

IEEE P802.3da D2.0 10 Mbps Multidrop Enhancements

CI 00 SC FM P1 L37 # 185
Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So
Comment Type E Comment Status A EZ
change copyright variate & dates to 2025, editor should check globally
SuggestedRemedy
change copyright (variable and dates globally if hardcoded) to 2025.
Response Response Status C
ACCEPT.

CI 00 SC FM P3 L3 # 186
Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So
Comment Type E Comment Status A Editorial
abstract doesn't change the 10BASE-T1S physical layer.
SuggestedRemedy
suggest change "modifications to the 10BASE-T1S Physical Layer (including reconciliation sublayers), management..." to "modifications to enhance the 10 Mb/s shared-medium (multidrop) mode of the 10BASE-T1S Physical Layer in a new, multidrop-only physical layer specification. This includes reconciliation sublayers, management..."
Response Response Status C
ACCEPT IN PRINCIPLE.

(Corrects typos in the spelling of 'modifications' and 'Physical' in the Suggested Remedy.)

Change from, "This amendment to IEEE Std 802.3-2022 specifies additions and appropriate modifications to the 10BASE-T1S Physical Layer (including reconciliation sublayers), management parameters, Ethernet support for time synchronization protocols, and optional power delivery to support multiple Powered Devices on the 10 Mb/s mixing segment."

to, "This amendment to IEEE Std 802.3-2022 specifies additions and appropriate modifications to enhance the 10 Mb/s shared-medium (multidrop) mode of the 10BASE-T1S Physical Layer in a new, multidrop-only physical layer specification (including reconciliation sublayers, management parameters, Ethernet support for time synchronization protocols, and optional power delivery to support multiple Powered Devices on the 10 Mb/s mixing segment)."

CI 00 SC FM P3 L5 # 187
Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So
Comment Type E Comment Status A Editorial
There is no such thing as 10BASE-T1 - it shouldn't be a keyword
SuggestedRemedy
suggest delete 10BASE-T1 as a keyword.
Response Response Status C
ACCEPT.

CI 00 SC FM P1 L34 # 184
Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So
Comment Type E Comment Status A EZ
draft is for initial Working Group ballot - not Task Force review
SuggestedRemedy
Change "Task Force review" to "Recirculation Working Group Ballot" (which will be appropriate for 2.1)
Response Response Status C
ACCEPT IN PRINCIPLE.
Change "Task Force review" to "Working Group ballot recirculation"

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Cl 00 SC 0 P 0 L 0 # 271

Dawe, Piers

Nvidia

Comment Type E Comment Status A EZ

pdf metadata says:

Title: IEEE P802.3xx name of Task Force

Author: IEEE P802.3xx Task Force

Subject: IEEE P802.3xx amendment

Keywords: P802.3xx,

SuggestedRemedy

Correct the metadata

Response Response Status C

ACCEPT IN PRINCIPLE.

Change title to, "IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement Task Force"

Change Author to: "IEEE P802.3da Task Force"

Change Subject to: "IEEE P802.3da amendment"

Change keywords to: "P802.3da"

Cl 00 SC 0 P 3 L 1 # 303

Schreiner, Stephan

Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type E Comment Status A Front Matter

The text reads: "This amendment to Specifies additions and appropriate modification to the 10BASE-T1S Physical Layer". However, the 10BASE-T1S Physical Layer is specified within 147 which is only touched in the overview section. Instead of modifications to 10BASE-T1S, a new 10BASE-T1M Physical Layer is created.

SuggestedRemedy

This amendment to IEEE Std 802.3-2022 specifies additions and appropriate modifications to enhance 10 Mb/s half duplex multidrop Physical Layer (PHY) specifications ...

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #186.

(Corrects typos in the spelling of 'modifications' and 'Physical' in the Suggested Remedy.)

Change from, "This amendment to IEEE Std 802.3-2022 specifies additions and appropriate modifications to the 10BASE-T1S Physical Layer (including reconciliation sublayers), management parameters, Ethernet support for time synchronization protocols, and optional power delivery to support multiple Powered Devices on the 10 Mb/s mixing segment."

to, "This amendment to IEEE Std 802.3-2022 specifies additions and appropriate modifications to enhance the 10 Mb/s shared-medium (multidrop) mode of the 10BASE-T1S Physical Layer in a new, multidrop-only physical layer specification (including reconciliation sublayers, management parameters, Ethernet support for time synchronization protocols, and optional power delivery to support multiple Powered Devices on the 10 Mb/s mixing segment)."

Cl 00 SC 0 P 8 L # 115

Lusted, Kent

Independent

Comment Type E Comment Status A EZ

List of balloters is empty.

SuggestedRemedy

Add the list

Response Response Status C

ACCEPT.

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CI 00 SC 0 P 42 L 6 # 203

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

Comment Type E Comment Status A EZ

Font size is larger in the Length and Format columns than others. This is not consistent with other clause 79 tables.

SuggestedRemedy

Change font size of the contents of the Length and Format Columns to be consistent with the rest of the table.

Response Response Status C

ACCEPT.

CI 00 SC Keywords P 3 L 8 # 273

Dawe, Piers Nvidia

Comment Type E Comment Status A EZ

physical layer

SuggestedRemedy

Physical Layer

Response Response Status C

ACCEPT.

CI 1 SC 1.4 P 22 L 4 # 266

Wienckowski, Natalie IVN Solutions LLC

Comment Type E Comment Status A EZ

The subclause numbers in 1.4 don't match the numbers in 8023-2022, which is the most recent published version that all changes should apply to.

SuggestedRemedy

Correct both instructions and subclause numbers per the following:

change 1.4.63 to 1.4.59

change 1.4.427 to 1.4.405

change 1.4.433 to 1.4.411

change 1.4.582 to 1.4.558

Response Response Status C

ACCEPT.

CI 1 SC 1.4 P 22 L 10 # 146

Baggett, Tim Microchip

Comment Type E Comment Status A Naming

Definition 1.4.206 BASE-T1 definition to include 10BASE-T1M, clause 188.

SuggestedRemedy

Insert following text into draft. **insert** --delete--

/Change 1.4.206 as follows:/

1.4.206 BASE-T1: PHYs that belong to the set of specific Ethernet PCS/PMA/PMDs that operate on a single twisted-pair copper cable, including 10BASE-T1L, 10BASE-T1S, **10BASE-T1M, ** 100BASE-T1, and 1000BASE-T1. (See IEEE Std 802.3, Clause 96, Clause 97, Clause 146, --and-- Clause 147**, and Clause 188**.)

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #147.

Editorial license granted to modify "10BASE-T1M" as necessary to align with Response to comment #188 prior to implementing the Remedy.

Editor to add after L10, P22:

Change 1.4.225 as follows:

1.4.225 BASE-T1: PHYs that belong to the set of specific Ethernet PCS/PMA/PMDs that operate on a single pair of conductors<ST>twisted-pair copper cable<ST>, including 10BASE-T1L, 10BASE-T1M, 10BASE-T1S, 100BASE-T1, and 1000BASE-T1. (See IEEE Std 802.3, Clause 96, Clause 97, Clause 146, <ST>and <ST>Clause 147 , and Clause 188.)

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Cl 1 SC 1.4.63a P 22 L 7 # 188

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

Comment Type TR Comment Status R Naming

I have found that 10BASE-T1M gets confused in the industry as a totally new phy, with "10BASE-T1S" being short-reach, T1L being long reach, and T1M, instead of being "M" for "multidrop", MEDIUM reach... I suggest a better naming would be the relationship between 10BASE-T and 10BASE-Te, where the only real difference is the PMD/media spec. Therefore, I would suggest a global change to 10BASE-T1Sm or perhaps 10BASE-T1Se. indicating that it is the same PHY with some restriction.

Definition should parallel how 10BASE-Te relates to 10BASE-T and reference the 10BASE-T1S PHY. (SUBTYPE_MASTER_COMMENT)

SuggestedRemedy

Globally change references to 10BASE-T1M to 10BASE-T1Sm.
change references 10BASE-T1M / 10BASE-T1S to 10BASE-T1S / T1Sm
Change definition to read "IEEE 802.3 Physical Layer specification for a version of 10BASE-T1S supporting only the multidrop mode of operation (with an enhanced mixing segment specification) for a 10 Mb/s Ethernet local area network using a single balanced pair of conductors as a shared medium. (See IEEE Std 802.3, Clause 188.)"

Response Response Status U

REJECT.

No consensus for change.

Straw Poll:
I support (indicate as many as possible):
No change (stay with 10BASE-T1M): 19
Change to 10BASE-T1Se: 10
Change to 10BASE-T1Sm: 7
Change to 10BASE-T1S+: 16
Change to 10BASE-T1Sp: 4

No consensus for change

Cl 1 SC 1.4.206 P 22 L 10 # 147

Baggett, Tim Microchip

Comment Type E Comment Status A Naming

Even before adding 10BASE-T1M to the 1.4.206 BASE-T1 definition and to the draft, we have a problem. The definition specifies "single twisted-pair copper cable". This is not true for 10BASE-T1L, 10BASE-T1S, and 10BASE-T1M which are defined to operate over a "balanced pair of conductors" which could be ribbon cable, twinax, or PCB differential traces in addition to single twisted-pair cable".

SuggestedRemedy

In 1.4.206, change "single twisted-pair copper cable" to "single pair of conductors".

Response Response Status C

ACCEPT IN PRINCIPLE.

Editorial license granted to modify "10BASE-T1M" as necessary to align with Response to comment #188 prior to implementing the Remedy.

Editor to add after L10, P22:

Change 1.4.225 as follows:

1.4.225 BASE-T1: PHYs that belong to the set of specific Ethernet PCS/PMA/PMDs that operate on a single pair of conductors<ST>twisted-pair copper cable<ST>, including 10BASE-T1L, 10BASE-T1M, 10BASE-T1S, 100BASE-T1, and 1000BASE-T1. (See IEEE Std 802.3, Clause 96, Clause 97, Clause 146, <ST>and <ST>Clause 147, and Clause 188.)

Cl 1 SC 1.4.427b P 22 L 18 # 189

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

Comment Type E Comment Status A Editorial

A reference to clause 189, similar to those on the definition of MPD and MPSE would be useful here.

SuggestedRemedy

Add "(see IEEE Std 802.3, Clause 189)." to the end of the definition for the MPI. (Clause 189 is a cross ref)

Response Response Status C

ACCEPT IN PRINCIPLE.

Insert "(see IEEE Std 802.3, Clause 189)" before the "." at the end of the definition for MPI. (Clause 189 is a cross ref)

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 1

SC 1.4.427b

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1/27/2025 11:53:17 AM

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Cl 1 SC 1.4.427c P 22 L 21 # 47

Ran, Adeo Cisco

Comment Type T Comment Status A MPSE

"A device that provides power to a mixing segment which may also carry data"

The definition is ambiguous: is it the device that may also carry data or the mixing segment?

My guess is that it is the mixing segment - but why is it necessary to state in this definition that a mixing segment can carry data?

SuggestedRemedy

Delete "which may also carry data".

Response Response Status C

ACCEPT IN PRINCIPLE.

Change: "A device that provides power to a mixing segment which may also carry data"

to:

"A device that provides power to a mixing segment, which may also carry data"

(Editor's note: Comma added to make MPSE definition parallel to the PSE definition in the base standard. Note that the mixing segment and the device both optionally carry data. (If there are devices which can transmit data on the mixing segment, the segment and the devices will have data. It is also possible that the MPSE device itself is merely a power source, without a data connection to the mixing segment.))

Cl 1 SC 1.4.433 P 22 L 25 # 267

Wienckowski, Natalie IVN Solutions LLC

Comment Type E Comment Status A EZ

The term being defined is supposed to be in bold print.

SuggestedRemedy

BOLD "network interface device (NID)"

Response Response Status C

ACCEPT IN PRINCIPLE.

BOLD "network interface device (NID):"

(include colon as well)

Cl 1 SC 1.4.582a P 22 L 28 # 48

Ran, Adeo Cisco

Comment Type T Comment Status A TCI

The definition of TCI makes it an instance of MDI. From the definition, it is unclear why a new term is used instead of just MDI. But the description in 188.9 and Figure 188-18 suggests that it is quite different from an MDI.

Based on the text in 188.9 the definition would better be "The interface of the Clause 188 PHY to the mixing segment" or something similar.

A reference to clause 188 would be helpful (especially after this amendment is integrated into the next revision).

SuggestedRemedy

Change the definition to "An interface of a 10BASE-T1M PHY to a mixing segment (see Clause 188)" or something similar.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add "(see IEEE Std 802.3, 188.9)." at the end of the definition.

(Editors note: By the definition of the MDI, a TCI is a type of MDI. A new term is used because the TCI has some structure differences, namely 2 connections to the medium vs. the usual one. While the TCI is currently only used in clause 188, the construct is generic to multidrop topologies; however, a reference is useful as there is more description in 188.9.)

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Cl 1 SC 1.4.582a P 22 L 30 # 190

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

Comment Type E Comment Status A Editorial

A reference to clause 188, similar to those on the definition of 10BASE-T1M, MPD, and MPSE would be useful here.

SuggestedRemedy

Add "(see IEEE Std 802.3, Clause 188)." to the end of the definition for the TCI. (Clause 188 is a cross ref)

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #48.

Add "(see IEEE Std 802.3, 188.9)." at the end of the definition.

(Editors note: By the definition of the MDI, a TCI is a type of MDI. A new term is used because the TCI has some structure differences, namely 2 connections to the medium vs. the usual one. While the TCI is currently only used in clause 188, the construct is generic to multidrop topologies; however, a reference is useful as there is more description in 188.9.)

Cl 22 SC 22 P 23 L 2 # 49

Ran, Ade Cisco

Comment Type E Comment Status R MII

If Clause 22 is opened for editing it would be good to correct the title to include GMII and to differentiate it from other clauses that define Reconciliation Sublayer, such as clause 46, 81, etc.

SuggestedRemedy

Change the title to "Reconciliation Sublayer (RS) and Media Independent Interface for 10 and 100 Megabit (MII) and 1 Gigabit (GMII) ".

Response Response Status C

REJECT.

GMII is out of scope for this project, as it is gigabit. Further, commenter is incorrect. GMII is defined in clause 35, not 22.

Cl 22 SC 22.1 P 23 L 17 # 238

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A Editorial

white outline box around the text "RECONCILIATION" in the left had column (MII/PLS/AUI...)

SuggestedRemedy

delete the box, basically copy the right hand RECONCILIATION box.

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor' note: Editor has confirmed that the white outline box is present in the source 8023-22.fm file.)

Delete extraneous white outline box in the figure.

Underline NOTE at line 3

Replace Editor's Instruction on line 6, P23 with:

Change Figure 22-1 as follows and delete white outline box surrounding the word RECONCILIATION in the left column above MII:

Cl 22 SC 22.1 P 23 L 30 # 50

Ran, Ade Cisco

Comment Type E Comment Status A Editorial

The new NOTE should be underlined

SuggestedRemedy

Per comment

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #238.

Delete extraneous white outline box in the figure.

Underline NOTE at line 3

Replace Editor's Instruction on line 6, P23 with:

Change Figure 22-1 as follows and delete white outline box surrounding the word RECONCILIATION in the left column above MII:

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CI 22 SC 22.1 P 23 L 31 # 281

Dawe, Piers

Nvidia

Comment Type E Comment Status A

Editorial

If the NOTE is new

SuggestedRemedy

it should be underlined

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #238.

Delete extraneous white outline box in the figure.

Underline NOTE at line 3

Replace Editor's Instruction on line 6, P23 with:

Change Figure 22-1 as follows and delete white outline box surrounding the word RECONCILIATION in the left column above MII:

CI 22 SC 22.1 P 23 L 34 # 51

Ran, Adeo

Cisco

Comment Type E Comment Status R

MI

The title of Figure 22-1 should include both MII and GMII.

SuggestedRemedy

Change "MI" to "MI and GMII".

Response Response Status C

REJECT.

Clause 22 does not describe GMII, clause 35 does.

CI 30 SC 30.2.5 P 24 L 22 # 239

Jones, Chad

Cisco Systems, Inc.

Comment Type E Comment Status A

EZ

Table 30-11, left margin has double lines the first three entries

SuggestedRemedy

make them single lines like the rest of the table.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #191.

Change double horizontal lines in the first column to single lines ...

CI 30 SC 30.2.5 P 24 L 22 # 191

Zimmerman, George

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

Comment Type E Comment Status A

EZ

Why are there double horizontal lines in the first column above the first 3 table rows (these rows are together)

SuggestedRemedy

Change double horizontal lines in the first column to single lines ...

Response Response Status C

ACCEPT.

CI 30 SC 30.3.2 P 24 L 36 # 192

Zimmerman, George

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

Comment Type TR Comment Status R

Naming

If the construct for 10BASE-T1M to become 10BASE-T1Sm (a variant of 10BASE-T1S) is accepted, then, following the usage for 10BASE-T vs 10BASE-Te, there is no need for separate PhyType and MauType - you just use 10BASE-T1S. (SUBTYPE)

SuggestedRemedy

Delete 30.3.2 and subclauses. (P24 L36-54)

Response Response Status U

REJECT.

No consensus for change, see comment #188.

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Cl 30	SC 30.6	P 25	L 14	# 193
Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So				
Comment Type	TR	Comment Status	A	Management
No autonegotiation is defined for multidrop - hence addition of 10BASE-T1M to auto-negotiation management is inappropriate.				
SuggestedRemedy				
Delete 30.6 and subclauses (P25 L144-26)				
Response		Response Status	C	
ACCEPT IN PRINCIPLE.				
Accommodated by comment #52.				
Delete 30.6 and its subclauses.				

Cl 30	SC 30.6	P 25	L 20	# 52
Ran, Adeo Cisco				
Comment Type	TR	Comment Status	A	Management
188.1.1 says that Auto-negotiation is not available for 10GBASE-T1M. So why does this subclause need to be changed to add 10BASE-T1M?				
SuggestedRemedy				
Delete 30.6 and its subclauses.				
Response		Response Status	W	
ACCEPT.				

Cl 30	SC 30.6.1.1.5	P 25	L 26	# 42
Jones, Peter Cisco Systems				
Comment Type	TR	Comment Status	A	Management
Since T1M doesn't do autoneg, I don't understand why we should add a aAutoNegLocalTechnologyAbility for it.				
SuggestedRemedy				
remove 30.6.1.1.5 aAutoNegLocalTechnologyAbility				
Response		Response Status	C	
ACCEPT IN PRINCIPLE.				
Accommodated by comment #52.				
Delete 30.6 and its subclauses.				

Cl 30	SC 30.16.1.1.3	P 25	L 40	# 333
Law, David HPE				
Comment Type	T	Comment Status	A	LATE

The 10BASE-T1S and 10BASE-T1M PHYs are defined to loop back BEACONS from the transmit MII path to the receive MII path during collision-free transmission. This loopback is described in Figure 147-8 'PCS Receive state diagram part b', and IEEE P802.3da Figure 188-8 'PCS Receive state diagram part b'. Both these state diagrams require BEACON to be signalled across the MII (RX_ER = TRUE, RXD = 0010) if the rx_sym parameter of the PMA_UNITADATA.indication primitive is BEACON (RXn = BAECON). This is regardless of the state of the transmitter, so it includes BEACON being transmitted by the PHY.

A D-PLCA node with coordinator_role_allowed set TRUE will initially after the wait_beacon timer has expired, send a BEACON and then take on the coordinator role (Figure 148-8 D-PLCA Control State Diagram enters the COORDINATOR state). If, however, it receives a BEACON from another node, it will relinquish the coordinator role and become a learner (Figure 148-8 D-PLCA Control State Diagram enters the LEARNING state). As a result, if there are multiple D-PLCA nodes with coordinator_role_allowed set TRUE, they will eventually converge, with only one node in the coordinator role.

When enabled (dplca_en = true), the Figure 148-8 D-PLCA Control State Diagram enters the WAIT_BEACON state, starting the wait_beacon_timer. If coordinator_role_allowed is set to true, the D-PLCA Control State Diagram will enter the COORDINATOR state on the expiration of the wait_beacon timer, setting local_nodeID to zero. Setting local_nodeID to zero will result in the PLCA Control state diagram entering the SEND_BEACON state, resulting in the transmission of a BEACON.

The Figure 148-8 D-PLCA Control State Diagram, however, does not account for BEACON being looped back by the PHY. As a result, when the BAECON is looped back, and therefore rx_cmd is set to BEACON, the D-PLCA Control State Diagram will transition from the COORDINATOR to the LEARNING state due to the condition ... + (rx_cmd = BEACON) for the transition.

This means there won't be any node to send BEACONS on the segment. Eventually, after the to_timer_done expires 255 times, CurID will be set to 255, causing the PLCA Control state diagram to enter the RESYNC state. This will set plca_active to FALSE, which causes plca_status to be set to FAIL, which in turn will cause the D-PLCA Control State Diagram to return to the WAIT_BEACON state, and after the wait_beacon_timer expires, the above cycle will repeat.

SuggestedRemedy

Two potential options would seem to be:

[1] Define a variable loopback_block that is used to qualify rx_cmd = BEACON on the transition from the COORDINATOR to the LEARNING state so that it reads '... (rx_cmd = BEACON * ! loopback_block). The variable loopback_block would be defined to be (tx_cmd = BEACON + (loopback_block * (rx_cmd == BEACON + COL + CRS))).

[2] Add a new state LOOPBACK entered from the COORDINATOR state when tx_cmd =

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BEACON and exited to the COORDINATOR once rx_cmd != BEACON * !CRS & !COL.

In either case, tx_cmd, CRS and COL would have to be added to subclause 148.4.7.2 D-PLCA 'variables'.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add a new state LOOPBACK entered from the COORDINATOR state when tx_cmd = BEACON and exited to the COORDINATOR once rx_cmd != BEACON * !CRS & !COL.

In either case, tx_cmd, CRS and COL would have to be added to subclause 148.4.7.2 D-PLCA 'variables'.

Editorial license to change the state name if a better one comes to mind.

Cl **30** *SC* **30.16.1.1.3** *P* **25** *L* **40** # **318**

Law, David HPE

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

Since subclause 30.16.1.1.3 defines the aPLCANodeCount attribute, it seems it should map to the plca_node_count variable rather than the local_nodeID variable as stated. In addition, this is an attribute, not a parameter.

SuggestedRemedy

Suggest that the text 'This parameter maps to the local_nodeID variable in 148.4.4.2.' is changed to read 'This attribute maps to the plca_node_count variable in 148.4.4.2.'

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.16.1.1.4** *P* **25** *L* **47** # **319**

Law, David HPE

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

Since subclause 30.16.1.1.4 defines the aPLCALocalNodeID attribute, it seems it should map to the local_nodeID variable rather than the plca_node_count variable as stated. In addition, this is an attribute, not a parameter.

SuggestedRemedy

Suggest the text 'This parameter maps to the plca_node_count variable in 148.4.4.2.' is changed to read 'This attribute maps to the local_nodeID variable in 148.4.4.2.'

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.16.1.1.13** *P* **27** *L* **16** # **124**

Huber, Thomas Nokia

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

Since the enumerated values are TRUE and FALSE, why not make the syntax BOOLEAN?

SuggestedRemedy

Change Appropriate Syntax to BOOLEAN

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change Appropriate Syntax to BOOLEAN

(Editor's Note: The same error exists in the base standard's definition of a similar variable 30.16.1.1.2 aPLCAStatus. Commenter (or others) may wish to submit a maintenance request.)

Cl **30** *SC* **30.16.1.1.14** *P* **27** *L* **27** # **125**

Huber, Thomas Nokia

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

Since the enumerated values are TRUE and FALSE, why not make the syntax BOOLEAN?

SuggestedRemedy

Change Appropriate Syntax to BOOLEAN

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.17.1.1.1** *P* **28** *L* **21** # **43**

Jones, Peter Cisco Systems

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

The attribute is named aMPSEAdminState but is described as " operational state". It's either operational or administrative.

SuggestedRemedy

replace
"A read-only value that identifies the operational state of the MPSE function"
with
"A read-only value that identifies the administrative state of the MPSE function."

Response *Response Status* **C**

ACCEPT.

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CI 30 SC 30.17.1.1.2 P 28 L 41 # 44

Jones, Peter Cisco Systems

Comment Type TR Comment Status A Management

In aMPSEPowerState, the mappings from the states to the enums are not obvious, e.g., what does HIGH_MARK map to. We need to define the mappings, here is probably the best place.

SuggestedRemedy

Create a mapping table either here or in 189.4.4.5 that defines how these values are mapped.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add state names beside enumerated values in lines 31-38 as follows:

unknown MPSE true state unknown (state unknown)
 offline MPSE offline (DISABLED state)
 idle MPSE idle (IDLE state)
 discovery MPSE discovery (HIGH_MARK or any of the DISCOVERY_x states)
 inrush MPSE inrush (INRUSH state)
 powering MPSE powering (POWER_ON state)
 error MPSE error (ERROR_DELAY state)
 backoff MPSE backoff (BACKOFF)

CI 30 SC 30.17.1.1.3 P 28 L 50 # 194

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

Comment Type T Comment Status A Big Ticket Item

the aMPSETypeDiscovery enumerated values miss the case where type "mixed" MPDs are discovered... they just have the case where Both type 0 and type 1 MPDs have been discovered. This case should also include type "mixed" discovered, as listed in 30.17.2.1.1 (as well as in clause 189)

SuggestedRemedy

Change description of "mixed" to read "Type Mixed, or a mixture of MPD Types"

Response Response Status C

ACCEPT IN PRINCIPLE.

Adopt changes in
https://www.ieee802.org/3/da/public/0125/cjones_D2p0_comment194_V3.pdf

Editorial license to adjust any remaining "type Mixed" to align with this comment.

CI 30 SC 30.17.1.1.3 P 28 L 52 # 53

Ran, Adeo Cisco

Comment Type E Comment Status A EZ

Missing space "in189.4.6"

SuggestedRemedy

Insert space

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #195.

Change cross-reference to 189.5.1 and put space prior to cross-reference.

CI 30 SC 30.17.1.1.3 P 28 L 53 # 195

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

Comment Type E Comment Status A EZ

189.4.6 is the wrong cross reference for MPD types. 189.5.1 lists MPD types

SuggestedRemedy

Change cross-reference to 189.5.1 and put space prior to cross-reference.

Response Response Status C

ACCEPT.

CI 30 SC 30.17.1.1.3 P 28 L 53 # 45

Jones, Peter Cisco Systems

Comment Type TR Comment Status A EZ

The reference for aMPSETypeDiscovery is wrong.

SuggestedRemedy

replace
 "MPD(s) as specified in189.4.6.;"
 with
 "MPD(s) as specified in 189.3.;"

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #195.

Change cross-reference to 189.5.1 and put space prior to cross-reference.

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CI 30 SC 30.17.1.1.4 P 29 L 8 # 3

Jones, Peter Cisco Systems

Comment Type E Comment Status A EZ

aMPSEPoweringCounter is described as
"This counter is incremented when the MPSE transitions to the POWER_ON state in from the MPI as specified in Figure 189-4.;"
"transitions to the POWER_ON state in from the MPI" doesn't make sense.

SuggestedRemedy

Fix description.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change:

"transitions to the POWER_ON state in from the MPI as specified in Figure 189-4.;"

to:

"transitions to the POWER_ON state as specified in Figure 189-4.;"

CI 30 SC 30.17.1.1.4 P 29 L 8 # 240

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A EZ

"...to the POWER_ON state in from the MPI..." extra word "in" in the sentence.

SuggestedRemedy

Delete "in", making it "...to the POWER_ON state from the MPI..."

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #3.

Change "transitions to the POWER_ON state in from the MPI as specified in Figure 189-4.;"
to "transitions to the POWER_ON state as specified in Figure 189-4.;"

CI 30 SC 30.17.1.1.4 P 29 L 8 # 46

Jones, Peter Cisco Systems

Comment Type TR Comment Status R Management

aMPSEPoweringCounter is described as
"This counter is incremented when the MPSE transitions to the POWER_ON state in from the MPI as specified in Figure 189-4.;"
I think the counter variable and it's update should be part of the state machine.

SuggestedRemedy

For this and similar counters, e.g. aMPSEShortCircuitCounter, define a counter variable and show the increment in the state machine.

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

CI 30 SC 30.17.1.1.5 P 29 L 18 # 196

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

Comment Type T Comment Status A EZ

189.4.9 is short circuit current, 189.4.8 is overload....

SuggestedRemedy

Change 189.4.9 cross-ref to point to 189.4.8

Response Response Status C

ACCEPT.

CI 30 SC 30.17.1.1.6 P 29 L 28 # 197

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

Comment Type T Comment Status A EZ

189.4.10 is the power removal section, 189.4.9 is short circuit

SuggestedRemedy

Change 189.4.10 cross-ref to point to 189.4.9

Response Response Status C

ACCEPT.

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CI 30 SC 30.17.1.1.7 P 29 L 39 # 257
Wienckowski, Natalie IVN Solutions LLC
Comment Type E Comment Status R Management
subject/verb agreement
SuggestedRemedy
change: frequency and averaging is vendor-defined
to: frequency and averaging are vendor-defined
Response Response Status Z
REJECT.
This comment was WITHDRAWN by the commenter.

CI 30 SC 30.17.1.1.7 P 29 L 39 # 4
Jones, Peter Cisco Systems
Comment Type TR Comment Status A Management
the description for aMPSEActualPower says:
"The sampling frequency and averaging is vendor-defined."
If this is relevant to the consumer of clause 30, we need to report what it is. If they don't care,
then we should remove this.
SuggestedRemedy
Remove "The sampling frequency and averaging is vendor-defined." from the description.
Response Response Status C
ACCEPT.

CI 30 SC 30.17.1.1.8 P 29 L 48 # 241
Jones, Chad Cisco Systems, Inc.
Comment Type E Comment Status A EZ
"...aMPSEActualPower in \pm milliwatts.;" extraneous character in the text.
SuggestedRemedy
delete " \pm "
Response Response Status C
ACCEPT IN PRINCIPLE.
Accomdated by comment #54.
Change "in \pm milliwatts" to "in milliwatts (e.g., a value of 1 means \pm 1 mW).
Apply similar changes in 30.17.2.1.9.

CI 30 SC 30.17.1.1.8 P 29 L 48 # 5
Jones, Peter Cisco Systems
Comment Type T Comment Status R Management
The description for aMPSEPowerAccuracy includes
"indicating the accuracy associated with aMPSEActualPower"
I'm wondering if we need to say anything about how this is determined?
SuggestedRemedy
Consider adding text described how power accuracy can be assessed.
Response Response Status C
REJECT.
Commenter provides insufficient information for a remedy.

CI 30 SC 30.17.1.1.8 P 29 L 48 # 54
Ran, Adele Cisco
Comment Type T Comment Status A EZ
"the accuracy associated with aMPSEActualPower in \pm milliwatts" - it is unclear what "in \pm
milliwatts" means.
The suggested remedy is my interpretation.
Also applies in 30.17.2.1.9.
SuggestedRemedy
Change "in \pm milliwatts" to "in milliwatts (e.g., a value of 1 means \pm 1 mW).
Apply similar changes in 30.17.2.1.9.
Response Response Status C
ACCEPT IN PRINCIPLE.
Change "in \pm milliwatts" to "in milliwatts (e.g., a value of 1 means \pm 1 mW).
Apply similar changes in 30.17.2.1.9.

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Cl 30 **SC 30.17.1.1.9** **P 30** **L 8** # **6**

Jones, Peter Cisco Systems

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

aMPSECumulativeEnergy is described as
"A count of the cumulative energy supplied by the MPSE as measured at the MDI in kilojoules."
Do we need to say anything about how this is measured?

SuggestedRemedy

Consider adding text described how power measurement can be done..

Response **Response Status C**

REJECT.

Commenter provides insufficient information for a remedy.

Cl 30 **SC 30.17.1.2.1** **P 30** **L 18** # **198**

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

Comment Type E **Comment Status A** **Editorial**

"This action provides a means to alter 189.4.4.2 mpse_enable.;" seems like this got editorially jumbled...

SuggestedRemedy

Change to read: "This action provides a means to alter mpse_enable as specified in 189.4.4.2.;"

Response **Response Status C**

ACCEPT.

Cl 30 **SC 30.17.1.2.1** **P 30** **L 19** # **7**

Jones, Peter Cisco Systems

Comment Type E **Comment Status A** **Editorial**

acMPSEAdminControl is described as
"This action provides a means to alter 189.4.4.2 mpse_enable.;"
A little more description would be useful.

SuggestedRemedy

replace
"This action provides a means to alter 189.4.4.2 mpse_enable.;"
with
"This action provides a means to alter 189.4.4.2 mpse_enable and the change is reflected in aMPSEAdminState".;

Response **Response Status C**

ACCEPT IN PRINCIPLE.

Accommodated by comment #198.

Change to read: "This action provides a means to alter mpse_enable as specified in 189.4.4.2.;"

Cl 30 **SC 30.17.2.1.2** **P 30** **L 47** # **8**

Jones, Peter Cisco Systems

Comment Type E **Comment Status A** **Editorial**

the aMPDAdminState description includes the following:
"A read-only value that identifies the operational state of the MPD functions"
"The operational state of the MPD function"
It's either operational or administrative.

SuggestedRemedy

replace both instances of
"operational state "
with
"administrative state."

Response **Response Status C**

ACCEPT IN PRINCIPLE.

replace both instances of
"operational state "
with
"administrative state"

(Editor's note: Extraneous space and "." deleted from Suggested Remedy).

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Cl 30 **SC 30.17.2.1.2** **P 30** **L 48** # **55**

Ran, Adeel Cisco

Comment Type E **Comment Status A** **Management**

"An interface which can provide the MPD functions specified in Clause 189 will be enabled to do so when this attribute has the enumeration "enabled"."

The word "will" is deprecated and its usage here suggests (incorrectly) that the enumeration controls the enablement.

SuggestedRemedy

Change the quoted sentence and the one that follows (which is about "disabled") to:
"An interface that supports the MPD functions specified in Clause 189 indicates that these functions are available when this attribute has the enumeration "enabled" and that these functions are not available when this attribute has the enumeration "disabled"."

Response **Response Status C**

ACCEPT IN PRINCIPLE.

Delete the 2nd sentence of "BEHAVIOUR" reading, "An interface which can provide the MPD functions specified in Clause 189 will be enabled to do so when this attribute has the enumeration "enabled".

Change 3rd sentence of "BEHAVIOUR" to read: "When this attribute reports the enumeration "disabled" the interface acts as it would if it had no MPD function." (P30L49-50)

Cl 30 **SC 30.17.2.1.3** **P 31** **L** # **201**

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

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

The states listed for the MPD power state are not consistent with the state diagram, more explanation is needed - identifying state names with the descriptions .

SuggestedRemedy

change idle description to "MPD idle (PON_NO_POWER state)"
change discovery description to "MPD discovery (DO_MARKn, DO_DISCOVERYn, and DISCOVERY_LOW_TYPE_x, states)"

and change powered description to "MPD powered (PON_EVAL, INRUSH, or PON_LOAD_ON states)".

Response **Response Status C**

ACCEPT.

Cl 30 **SC 30.17.2.1.3** **P 31** **L 13** # **9**

Jones, Peter Cisco Systems

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

In aMPDPowerState, the mappings from the states to the enums are not obvious, e.g., what does PON_EVAL map to. We need to define the mappings, here is probably the best place.

SuggestedRemedy

Create a mapping table either here or in 189.5.3.5 that defines how these values are mapped.

Response **Response Status C**

ACCEPT IN PRINCIPLE.

Accommodated by comment #201.

change idle description to "MPD idle (PON_NO_POWER state)"

change discovery description to "MPD discovery (DO_MARKn, DO_DISCOVERYn, and DISCOVERY_LOW_TYPE_x, states)"

and change powered description to "MPD powered (PON_EVAL, INRUSH, or PON_LOAD_ON states)".

Cl 30 **SC 30.17.2.1.4** **P 31** **L 22** # **199**

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

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

DO_MARK1 is in Figure 189-6, not 189-8. (189-6 is part a of the state diagram and 189-8 is part c...)

SuggestedRemedy

Change cross-referenece to Figure 189-6

Response **Response Status C**

ACCEPT.

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CI 30 SC 30.17.2.1.4 P 31 L 22 # 10

Jones, Peter

Cisco Systems

Comment Type TR Comment Status R Management

aMPDDiscoveryCounter is described as

"This counter is incremented when the MPD enters the DO_MARK1 state in Figure 189–8.;"

I think the counter variable and it's update should be part of the state machine.

SuggestedRemedy

For this and similar counters, e.g. aMPDMismatchCounter , define a counter variable and show the increment in the state machine.

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

CI 30 SC 30.17.2.1.5 P 31 L 31 # 200

Zimmerman, George

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

Comment Type T Comment Status A Editorial

There is no longer any PON_MISMATCHED_TYPE state. It has been replaced by present_mismatch_indicator being set to true.

SuggestedRemedy

Change "enters the PON_MISMATCHED_TYPE state" with "present_mismatch_indication is set to true"

Response Response Status C

ACCEPT.

CI 30 SC 30.17.2.1.8 P 32 L 1 # 242

Jones, Chad

Cisco Systems, Inc.

Comment Type ER Comment Status A Management

aMPDActualPower - this requires a PD to measure its power, this is a big requirement to place on some of the PDs targeted by this standard. I see we say the PD reports 0 if the MPI is not powered. What does an MPD report if it doesn't support power measurement?

SuggestedRemedy

Add a value that designates that the MPD doesn't support this feature.
"An MPD that does not support measuring MPI power reports 1 mW."

Response Response Status C

ACCEPT IN PRINCIPLE.

Implement solution in

https://www.ieee802.org/3/da/public/0125/jones_3da_02a_242_alternate_resolution.pdf

CI 30 SC 30.17.2.1.8 P 32 L 9 # 11

Jones, Peter

Cisco Systems

Comment Type TR Comment Status A Management

the description for aMPDActualPower says:

"The sampling frequency and averaging is vendor-defined."

If this is relevant to the consumer of clause 30, we need to report what it is. If they don't care, then we should remove this.

SuggestedRemedy

Remove "The sampling frequency and averaging is vendor-defined." from the description.

Response Response Status C

ACCEPT.

CI 30 SC 30.17.2.1.8 P 32 L 10 # 258

Wienckowski, Natalie

IVN Solutions LLC

Comment Type E Comment Status R Management

subject/verb agreement

SuggestedRemedy

change: frequency and averaging is vendor-defined
to: frequency and averaging are vendor-defined

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

CI 30 SC 30.17.2.1.9 P 32 L 19 # 243

Jones, Chad

Cisco Systems, Inc.

Comment Type E Comment Status A EZ

"...aMPDActualPower in \pm milliwatts.;" extraneous character in the text.

SuggestedRemedy

delete " \pm "

Response Response Status C

ACCEPT IN PRINCIPLE.

Accomodated by comment #54.

Change "in \pm milliwatts" to "in milliwatts (e.g., a value of 1 means \pm 1 mW).

Apply similar changes in 30.17.2.1.9.

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

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CI 30 SC 30.17.2.1.9 P 32 L 19 # 12

Jones, Peter Cisco Systems

Comment Type T Comment Status R Management

The description for aMPDPowerAccuracy includes
"indicating the accuracy associated with aMPDActualPower"
I'm wondering if we need to say anything about how this is determined?

SuggestedRemedy

Consider adding text described how power accuracy can be assessed.

Response Response Status C

REJECT.

Commenter provides insufficient information for a remedy.

CI 30 SC 30.17.2.2.1 P 32 L 35 # 244

Jones, Chad Cisco Systems, Inc.

Comment Type ER Comment Status A Editorial

"APPROPRIATE SYNTAX: Same as aMPDAdminState" - why make a reader page back to
see what this is? Make it easy, cut and paste it here, we aren't trying to optimize the number
of bits required to display the standard.

SuggestedRemedy

Here's the text from aMPDAdminState that should be copied in:
An ENUMERATED VALUE that has one of the following entries:
enabled MPD functions enabled
disabled MPD functions disabled

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace:
"Same as aMPDAdminState"

with,
"An ENUMERATED VALUE that has one of the following entries:
enabled MPD functions enabled
disabled MPD functions disabled"

Related, in 30.17.1.2.1 acMPSE AdminControl, change APPROPRIATES SYNTAX
Same as aMPSEAdminState

to

APPROPRIATE SYNTAX:
An ENUMERATED VALUE that has one of the following entries:
enabled MPSE functions enabled
disabled MPSE functions disabled

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Cl 30 SC 30.17.2.2.1 P 32 L 38 # 13

Jones, Peter Cisco Systems

Comment Type E Comment Status R Management

the acMPDAdminControl description includes
 "This action provides a means to alter 189.5.3.3 mpd_reset and dte_power_required. A
 "disabled" to "enabled" transition"
 to "disabled"
 A little more description would be useful, as would breaking up the paragraph

SuggestedRemedy

replace
 "This action provides a means to alter 189.5.3.3 mpd_reset and dte_power_required. A
 "disabled""
 with
 "This action provides a means to alter 189.5.3.3 mpd_reset and dte_power_required, and the
 change is reflected in aMPDAdminState.
 A "disabled""

Response Response Status C

REJECT.

The commenter's proposed addition puts requirements on aMPDAdminState which is
 described elsewhere in the text (30.17.2.1.2). The behavior is already specified, and
 specifying it in this location as well creates issues for maintenance.

Cl 45 SC 45.2.1.16 P 33 L 32 # 202

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

Comment Type T Comment Status R Naming

If the construct for 10BASE-T1M to become 10BASE-T1Sm (a variant of 10BASE-T1S) is
 accepted, then, following the usage for 10BASE-T vs 10BASE-Te, there is no need for new
 identification of 10BASE-T1M in the extended ability register, or the PMA/PMD control
 register. (SUBTYPE)

SuggestedRemedy

Delete 44.2.1.16 and 45.2.1.214 from the draft (P33 L21-54)

Response Response Status C

REJECT.

No consensus for change, see comment #188.

Cl 45 SC 45.2.1.234 P 35 L 5 # 179

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

Comment Type E Comment Status A EZ

This clause is an example where center justifying the paragraph causes non-uniform spacing
 for the phrase "10BASE-T1M / 10BASE-T1S"

SuggestedRemedy

Globally insert non-breaking spaces between "10BASE-T1M" and the "/" and between the "/"
 and "10BASE-T1S".

Response Response Status C

ACCEPT.

Cl 45 SC 45.2.1.234.3 P 35 L 42 # 14

Jones, Peter Cisco Systems

Comment Type TR Comment Status R Management

I think its odd to have low-power mode defined only in clause 145.
 I think it should be mentioned in clause 188, and there probably should be a PICS.

SuggestedRemedy

Specify low-power mode in clause 188 or remove T1M from 45.2.1.234.3/45.2.1.235.2

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

The low-power mode referenced here is specified this way for most all PHYs (this register is
 the single-pair equivalent of 45.2.1.1.2 Low power (1.0.11). It is not defined for any of the
 phys in the phy clauses.

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CI 45 SC 45.2.1.235.4 P 37 L 4 # 15

Jones, Peter Cisco Systems

Comment Type TR Comment Status A Management

In the description of 45.2.1.235.4 Receive fault ability it says
When read as a one, bit 1.2298.9 indicates that the 10BASE-T1M / 10BASE-T1S PMA has
the ability to detect a fault condition on the receive path.
I don't see anything in 188.5 that describes how to detect a fault condition.

SuggestedRemedy

Either add text to 188.5 describing how to detect a fault condition, or remove T1M from
45.2.1.235.4/5.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add to the end of 45.2.1.235.4 - "10BASE-T1M PHYs shall indicate a zero in bit 1.2298.9."

CI 45 SC 45.2.1.236 P 37 L 22 # 56

Ran, Adee Cisco

Comment Type E Comment Status A EZ

Missing dash in "10BASET1S"

SuggestedRemedy

Insert a dash

Response Response Status C

ACCEPT.

CI 45 SC 45.2.1.236 P 37 L 24 # 16

Jones, Peter Cisco Systems

Comment Type TR Comment Status A Editorial

The bit descriptions for "10BASE-T1M / 10BASET1S test mode control register" just identify
a "Test mode 4", but don't say what it does.

SuggestedRemedy

Add text from "188.6.2 Test modes" saying what the tests do, or add a cross reference to
188.6.2.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add 45.2.1.236.1 to the draft, changing the first sentence from:
"Transmitter test mode operations defined by bits 1.2299.15:13 are described in 147.5.2."

to:
"Transmitter test mode operations defined by bits 1.2299.15:13 are described in 147.5.2 for
10BASE-T1S and 188.6.2 for 10BASE-T1M."

CI 45 SC 45.2.1.236 P 37 L 29 # 57

Ran, Adee Cisco

Comment Type E Comment Status A EZ

Missing 10 in "BASE-T1S"

SuggestedRemedy

Insert "10"

Response Response Status C

ACCEPT.

CI 45 SC 45.2.3 P 37 L 44 # 126

Huber, Thomas Nokia

Comment Type E Comment Status A EZ

In all the changed register names, 10BASE=T1S should be 10BASE-T1S, and there should
be a space after the /

SuggestedRemedy

Add a space after the / and change = to - (in all 4 rows)

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note - make the space non-breaking if comment #179 is accepted).

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Cl 45 SC 45.2.3 P 37 L 48 # 58

Ran, Adeo Cisco

Comment Type E Comment Status A EZ

"=" should be "-", multiple instances in Table 45-233

SuggestedRemedy

Change per comment

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #126.

Add a space after the / and change = to - (in all 4 rows)

Cl 45 SC 45.2.3.72.3 P 39 L 5 # 127

Huber, Thomas Nokia

Comment Type E Comment Status A EZ

Stray space in 10BASE- T1M

SuggestedRemedy

Delete the space after the hyphen

Response Response Status C

ACCEPT.

Cl 45 SC 45.2.3.73.1 P 39 L 28 # 17

Jones, Peter Cisco Systems

Comment Type TR Comment Status A Management

The text for "45.2.3.73.1 Fault" includes
"the 10BASE-T1M / 10BASE-T1S PCS has detected a fault condition on either the transmit
or receive path."

I don't see anything in clause 188 that defines what a fault condition is and how to detect it.

SuggestedRemedy

Either add text to 188.5 describing how to detect a fault condition, or remove T1M from
45.2.3.73.1.

Response Response Status C

ACCEPT IN PRINCIPLE.

Remove addition of "10BASE-T1M/" on P39 L28 (45.2.3.73.1).

Add as next-to-last sentence of the paragraph, "10BASE-T1M and 10BASE-T1S PHYs in
multidrop mode shall report 0 when bit 3.2292.7 is read."

(Commenter may consider maintenance with regards to 10BASE-T1S point to point
functionality of this bit)

Cl 45 SC 45.2.3.73.2 P 39 L 40 # 59

Ran, Adeo Cisco

Comment Type T Comment Status A Management

"10BASE-T1M PHYs do not have full duplex capability." = but this subclause is about the
register, not about the capability; it is not stated what the register reads in this case..

SuggestedRemedy

Change the quoted sentence to "For 10BASE-T1M PHYs this bit always reads as a zero"..

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace:

"10BASE-T1M PHYs do not have full duplex capability."

with:

"This bit always reads as a zero for 10BASE-T1M PHYs, which do not have full duplex
capability."

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CI 45 SC 45.2.3.74 P 40 L 10 # 18

Jones, Peter Cisco Systems

Comment Type TR Comment Status A Editorial

The register bit definitions say
"16-bit field counting the number of remote jabber errors received since last read of this register".
I think this needs a cross reference to where remote jabber errors are specified in clause 188 for T1M, and clause 147 to T1S

SuggestedRemedy

Add cross references in table or in text above.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change 188.4.3.9 by adding " (Remote jabber count) " after "register 3.2293"

(Commenter may wish to file maintenance on 147.3.3.9 for similar change.)

CI 45 SC 45.2.3.75 P 40 L 27 # 19

Jones, Peter Cisco Systems

Comment Type TR Comment Status R Management

The table of bit definitions for "10BASE-T1M / 10BASE-T1S PCS diagnostic 2 " contains 'CorruptedTxCnt', but I don't see any text defining what this is and how it's counted.

SuggestedRemedy

Either add text to 188 to specify How to count it, or remove T1M from 45.2.3.75

Response Response Status C

REJECT.

The text is clear, and parallel to clause 147, which has no cross reference and no confusion, the description is in the base standard at Table 45-301.

CI 45 SC 45.3.72.3 P 39 L 5 # 259

Wienckowski, Natalie IVN Solutions LLC

Comment Type E Comment Status A EZ

extra space

SuggestedRemedy

change: 10BASE- T1M PCS
to: 10BASE-T1M PCS

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #127.

Delete the space after the hyphen

CI 78 SC 78.3 P 41 L 17 # 121

Jones, Peter Cisco Systems

Comment Type TR Comment Status A New Feature

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 proposal to be submitted at least one week before January interim

Response Response Status U

ACCEPT IN PRINCIPLE.

Insert an Editor's note at 78.3 stating:

"Editor's Note (to be removed prior to final Working Group recirculation): The CRG is considering adding new features associated with new LLDP TLVs in response to required comments. This text does not currently have consensus to adopt, but is included here for the ballot pool to consider the concept. Please see
<https://www.ieee802.org/3/da/public/0125/<JASON TO PROVIDE>.pdf>,
https://www.ieee802.org/3/da/public/0125/jones_3da_01_ldlp_mpo_e.pdf, and
https://www.ieee802.org/3/da/public/0125/jones_3da_01_ldlp_mpo_e_proposal.pdf for use cases and information. Unapproved text related to this follows:"

Insert text from SPMD_potterf_LLDP_TLV_Proposals.pdf

(Editor to put unapproved text in a box)

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Cl 78 SC 78.3 P41 L 17 # 122

Jones, Peter Cisco Systems

Comment Type TR Comment Status A New Feature

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 proposal to be submitted at least one week before January interim

Response Response Status U

ACCEPT IN PRINCIPLE.

Accommodated by comment # 121.

Insert an Editor's note at 78.3 stating:

"Editor's Note (to be removed prior to final Working Group recirculation): The CRG is considering adding new features associated with new LLDP TLVs in response to required comments. This text does not currently have consensus to adopt, but is included here for the ballot pool to consider the concept. Please see <https://www.ieee802.org/3/da/public/0125/<JASON TO PROVIDE>.pdf>, https://www.ieee802.org/3/da/public/0125/jones_3da_01_ldp_mpoes.pdf, and https://www.ieee802.org/3/da/public/0125/jones_3da_01_ldp_mpoes_proposal.pdf for use cases and information. Unapproved text related to this follows:"

Insert text from SPMD_potterf_LLDL_TLV_Proposals.pdf

(Editor to put unapproved text in a box)

Cl 79 SC 79.3.9.3 P41 L 6 # 284

Dawe, Piers Nvidia

Comment Type E Comment Status A EZ

Uneven font size

SuggestedRemedy

Remove formatting overrides

Response Response Status C

ACCEPT.

Cl 79 SC 79.3.9.3 P41 L 48 # 60

Ran, Adeo Cisco

Comment Type E Comment Status R LLDP

This subclause is titled "PLCA TLV usage rules" but it does not contain any rules - only recommendations.

SuggestedRemedy

Change the title to "PLCA TLV usage".

Response Response Status C

REJECT.

This is the title given to equivalent sections throughout clause 79. Changing it would break parallelism with the other TLV definitions. The reason for this relates to the fact that LLDP describes operation of the client, and IEEE Std 802.3 cannot put requirements on the client, but can make recommendations.

Cl 79 SC 79.3.9.3 P41 L 52 # 128

Huber, Thomas Nokia

Comment Type T Comment Status A LLDP

The last sentence of the paragraph seems out of place. It is unclear what "this field" is. The subclause is about TLV usage rules, not a field within the TLV.

SuggestedRemedy

Name the field that has the value 255, or move the sentence to the appropriate subclause if it belongs somewhere else.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #282.

Delete the sentence from 79.3.9.3

Replace content of 79.3.9.2 with:

"The PLCA nodeID field contains an integer value indicating the value of the variable local_nodeID (see 148.4.4.2). If PLCA is not enabled, this field reports 255."

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CI 79 SC 79.3.9.3 P 41 L 52 # 61

Ran, Adeo Cisco

Comment Type TR Comment Status A LLDP

"If PLCA is not enabled, this field reports 255"

Which field? The subclauses title is "PLCA TLV usage rules" and it does not mention any specific field.

SuggestedRemedy

Clarify or delete this sentence.

Response Response Status W

ACCEPT IN PRINCIPLE.

Accommodated by comment #282.

Delete the sentence from 79.3.9.3

Replace content of 79.3.9.2 with:

"The PLCA nodeID field contains an integer value indicating the value of the variable local_nodeID (see 148.4.4.2). If PLCA is not enabled, this field reports 255."

CI 79 SC 79.3.9.3 P 41 L 52 # 282

Dawe, Piers Nvidia

Comment Type T Comment Status A LLDP

"this field reports 255", but this subclause is about a TLV not a field.

SuggestedRemedy

If you mean the PLCA nodeID field, say so, and move the sentence to the relevant subclause, 79.3.9.2.

Response Response Status C

ACCEPT IN PRINCIPLE.

Delete the sentence from 79.3.9.3

Replace content of 79.3.9.2 with:

"The PLCA nodeID field contains an integer value indicating the value of the variable local_nodeID (see 148.4.4.2). If PLCA is not enabled, this field reports 255."

CI 79 SC 79.3.9.3 P 41 L 52 # 283

Dawe, Piers Nvidia

Comment Type T Comment Status R LLDP

"If PLCA is not enabled, this field reports 255": it is not clear what "not enabled" means here.

Presumably not supported is not enabled, and according to 148.4.6.1, INACTIVE or FAIL would be disabled. Also, if PLCA is not enabled, it seems strange that a PLCA TLV would be sent at all.

SuggestedRemedy

If a station without PLCA or with it not enabled would not send a PLCA TLV, delete the sentence. If it would, explain, and tie the language to that in Clause 148.

Response Response Status C

REJECT.

Clause 148 and Clause 30 both show PLCA can be supported but not enabled.

CI 79 SC 79.3.9.3 P 42 L 6 # 285

Dawe, Piers Nvidia

Comment Type T Comment Status R Management

This is normative behaviour, so the references should go to normative material, not auxiliary material such as Management.

SuggestedRemedy

In the Notes column, add or change the references to refer to the relevant places in 148.

Response Response Status C

REJECT.

The LLDP supports the management states in clause 30. Because PLCA is an RS, the only specified management is in clause 30. The reference is correct.

CI 79 SC 79.3.9.3 P 42 L 8 # 286

Dawe, Piers Nvidia

Comment Type T Comment Status A LLDP

TRUE or FALSE doesn't make sense for a status. 30.16.1.1.2 (too arcane) says that aPLCAStatus indicates whether PLCA Control state diagram is receiving BEACON indication or transmitting BEACON request, but then it refers to 148.4.6.2 where the values are OK or FAIL, which is more understandable.

SuggestedRemedy

Refer to 148.4.6.2 and change TRUE and FALSE to OK and FAIL. 30.16.1.1.2 could be improved sometime, but that's maintenance.

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 79

SC 79.3.9.3

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CI 79 SC 79.5.1 P 43 L 30 # 287

Dawe, Piers

Nvidia

Comment Type T Comment Status R LLDP

79.3.9.3 says should not shall, so it's not a requirement, and a PICS is not appropriate

SuggestedRemedy

Delete PICS PLC3 or change should to shall in 79.3.9.3

Response Response Status C

REJECT.

Syntax in clause 79 has these as "should" but other TLVs also have PICS. Clause 79 has this style because LLDP refers to a client that IEEE Std 802.3 cannot put requirements on.

CI 79 SC 79.5.13 P 43 L 30 # 20

Jones, Peter

Cisco Systems

Comment Type TR Comment Status A EZ

The "Value/Comment" item for PLC3 in the PLCA TLV table (below) doesn't match many similar descriptions and doesn't make sense.

"PLCA support/status TLV should contain no more than one PLCA TLV"

SuggestedRemedy

replace

"PLCA support/status TLV should contain no more than one PLCA TLV"

with

"LLDPDU contains no more than one"

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #129.

Change the comment to "LLDPDU should contain no more than one PLCA TLV".

Editors given license to make appropriate PICS changes.

CI 79 SC 79.5.13 P 43 L 30 # 62

Ran, Adeo

Cisco

Comment Type TR Comment Status R LLDP

"PLCA support/status TLV should contain no more than one PLCA TLV" is a recommendation, not an option. Recommendations typically don't have PICS items. It is unclear why this is not a mandatory requirement (what usage model has more than one TLV) and assuming it's optional, is it important that an implementation reports whether it sends more than one?

SuggestedRemedy

Delete PICS item PLC3, unless the "rule" is made mandatory.

Response Response Status W

REJECT.

This is an option in clause 79 and mirrors the PICS related to usage of the other TLVs in the clause. Clause 79 has this style because LLDP refers to a client that IEEE Std 802.3 cannot put requirements on.

CI 79 SC 79.5.13 P 43 L 30 # 129

Huber, Thomas

Nokia

Comment Type E Comment Status A PLCA

The comment for PLC3 should be talking about the LLDPDU rather than the PLCA TLV.

SuggestedRemedy

Change the comment to "LLDPDU should contain no more than one PLCA TLV":

Response Response Status C

ACCEPT IN PRINCIPLE.

Change the comment to "LLDPDU should contain no more than one PLCA TLV".

Editors given license to make applicable PICS changes.

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CI 147 SC 147.1 P 45 L 10 # 288

Dawe, Piers

Nvidia

Comment Type T Comment Status A Naming

Specifications for one PHY are "refined" in the clause for another PHY. That's weird, and leaves the reader at a loss to know what to obey. Same problem in 188.1. It seems that 188 is complete, in that it does not rely on 147.

SuggestedRemedy

Change "refined" to "given", each time.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change "refined" to "provided"

CI 147 SC 147.1 P 45 L 10 # 63

Ran, Adeo

Cisco

Comment Type TR Comment Status A Naming

The new paragraph inserted makes a statement about a PHY in another clause, which is unclear (what does "refined" mean?).

This statement is not required in clause 147 and is out of scope (the project is not intended to change the 10BASE-T1S PHYs). It is also repeated in 188.1, where it seems to belong.

SuggestedRemedy

Delete this statement (and the whole of clause 147).

Response Response Status U

ACCEPT IN PRINCIPLE.

Accommodated by comment #288:

Change "refined" to "provided"

CI 148 SC 148.2 P 46 L 13 # 289

Dawe, Piers

Nvidia

Comment Type E Comment Status A Editorial

unique to

SuggestedRemedy

unique in

Response Response Status C

ACCEPT IN PRINCIPLE.

Change "unique to" to "unique within"

CI 148 SC 148.2 P 46 L 15 # 204

Zimmerman, George

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

Comment Type E Comment Status A D-PLCA

This is the first instance of "Dynamic PLCA" it seems appropriate to introduce the acronym D-PLCA here.

SuggestedRemedy

Change "Dynamic PLCA (see 148.4.7)" to "Dynamic PLCA (D-PLCA, see 148.4.7)"

Response Response Status C

ACCEPT IN PRINCIPLE.

Change "Dynamic PLCA (see 148.4.7)" to "Dynamic PLCA (D-PLCA) (see 148.4.7)"

CI 148 SC 148.4.4 P 46 L 21 # 320

Law, David

HPE

Comment Type T Comment Status A D-PLCA

It appears that the description in IEEE Std 802.3-2022 subclause 148.4.4.1 'PLCA Control state diagram' needs to be updated based on the addition of DPLCA to the PLCA Control state diagram. As an example, it appears that the second paragraph of subclause 148.4.4.1 reads, 'To achieve error free operation the PLCA node should be configured ...' and then says that 'Each local_nodeID is unique to the local collision domain.' needs to be updated to reflect that this is only the case for a node that does not support DPLCA or does, but does not have it enabled. As another example, it appears that the antepenultimate paragraph of subclause 148.4.4.1 starts 'When condition (2) occurs ...' should perhaps be updated to reflect that COMMIT is appended to transmissions if DPLCA is enabled.

SuggestedRemedy

Add IEEE Std 802.3-2022 subclause 148.4.4.1 'PLCA Control state diagram' to the draft and modify as required to account for the addition of DPLCA.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add 148.4.4.1 PLCA Control state diagram to the draft with the following edit:

"<ed instruction>Change the first sentence of the second paragraph in 148.4.4.1 as follows:<ed instruction>

When D-PLCA is enabled, the PLCA nodeID and BEACON are automatically configured. For configuration when D-PLCA is enabled, see 148.4.7.1. <SO>To achieve error free operation the PLCA node should be configured appropriately before transmit functions are enabled. <SO> The PLCA node should be configured appropriately before transmit functions are enable to achieve error free operation when D-PLCA is not enabled. Appropriate configuration includes the following:"

(Editor's note: double check reference to descriptive text on D-PLCA operation.)

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 148.4.4

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CI 148 SC 148.4.4.2 P 46 L 29 # 205

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

Comment Type E Comment Status A EZ

"Values:TRUE" lacks a space after the colon. This lack of space between the value and the description appears for every variable in 148.4.4.2, except dplca_txop_claim.

SuggestedRemedy

insert space after colon at P46 L29, L33, L48, L52, and P47 L3.

Response Response Status C

ACCEPT.

CI 148 SC 148.4.4.2 P 46 L 33 # 321

Law, David HPE

Comment Type TR Comment Status A D-PLCA

The definition of the dplca_en variable in subclause 148.4.4.2 says, 'This signal maps to TRUE when aDPLCAAdminState is enabled and to FALSE when aDPLCAAdminState is disabled.'. Since IEEE Std 802.3 subclause 30.1 'Overview' says, 'Implementation of part or all of Layer Management is not a requirement for conformance to any other clause of this standard.', the D-PLCA state diagram has to be able to operate in the absence of this attribute.

SuggestedRemedy

Suggest that the text 'This signal maps to TRUE when aDPLCAAdminState is enabled and to FALSE when aDPLCAAdminState is disabled.' be deleted.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change sentence "This signal maps to TRUE..." to "When clause 30 management is present, this signal maps to TRUE..."

(Editor's note: this same structure is used in the existing standard text of clause 148, for plca_reset and plca_en (and possibly elsewhere). Maintenance may be considered.)

CI 148 SC 148.4.4.2 P 47 L 3 # 150

Baggett, Tim Microchip

Comment Type T Comment Status A D-PLCA

The description for node count seems wrong in PLCA/DPLCA. The variable plca_node_count and attribute aPLCANodeCount in 30.16.1.1.3 describe it as "number of nodes getting a transmit opportunity before a new BEACON is generated". It essentially sets the number of transmit opportunities between BEACONS in the PLCA bus cycle.

dplca_txop_node_count is a copy of plca_node_count so it takes the same range.

A value of 0 currently is permitted, but according to the description this would allow for no transmit opportunities makes no sense. Instead a value of 0 yields one transmit opportunity between BEACONS. See exit from NEXT_TX_OPPORTUNITY to RESYNC via B in Figure 148-4.

Recommend to disallow the value of zero in these variables/attributes.

SuggestedRemedy

P47 L3 (dplca_txop_node_count)

Change: "Values: integer from 0 to 255"

To: "Values: integer from 1 to 255"

In Clause 148.4.4.2, change the valid values for plca_node_count from "0 to 255" to "1 to 255"

P25 L40 (30.16.1.1.3 aPLCANodeCount)

Change: "Valid range is 0 to 255, inclusive."

To: "Valid range is 1 to 255, inclusive."

Response Response Status C

ACCEPT IN PRINCIPLE.

Incorporate slides 8 & 9 of

https://www.ieee802.org/3/da/public/0125/Baggett_3da_Cmts148_150_plca_variable_ranges_v01.pdf

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CI 148 SC 148.4.4.6 P 48 L 46 # 117

Huszak, Gergely

Kone

Comment Type E Comment Status R Editorial

Non-elementary expressions shall be embraced in a pair of parentheses

SuggestedRemedy

Change "!CRS" to "(!CRS)" at exit from SYNCING, RECEIVE, and ABORT states (across 2 pages)

Response Response Status C

REJECT.

When there is only a single term in the expression, there is no chance for ambiguity in order of operations, or need for grouping. Therefore no parentheses are needed. Note that these instances are in the base standard, unchanged by this draft amendment, and should be commented through the revision or maintenance process if the commenter wishes to pursue.

CI 148 SC 148.4.4.6 P 49 L 30 # 206

Zimmerman, George

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

Comment Type E Comment Status A State Diagrams

Transition from BURST back to TRANSMIT crosses over transition line from WAIT_TO to NEXT_TX_Opportunity and Transition from TRANSMIT to BURST, making it hard to follow.

SuggestedRemedy

Change transition out of Burst to TRANSMIT to go to a tag (I believe it would be E) , and have that tag be the entry to TRANSMIT.

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: There is an E tag to EARLY_RECEIVE in the upper right hand corner.)

Change transition out of Burst to TRANSMIT to go to a tag (F) and have that tag be the entry to TRANSMIT.

CI 148 SC 148.4.4.6 P 49 L 33 # 322

Law, David

HPE

Comment Type TR Comment Status R D-PLCA

The bc variable is defined as an integer from 0 to 255 (see subclause 148.4.4.2). The first action on entry to the BURST state in Figure 148-4 'PLCA Control state diagram' is to set bc to equal bc + 1. There is then an IF-THEN-ELSE statement that tests if bc > 0. If it is, the burst_timer is started (the THEN condition). If it isn't, the append_commit_timer is started (the ELSE condition).

The intent seems to be to append COMMIT after a packet transmission when bursting is not enabled. Since, however, bc is set to 0 in the COMMIT state and incremented on entry to the BURST state, the bc variable will always be > 0 when the IF-THEN-ELSE statement is reached. As a result, the THEN condition will always execute (start burst_timer), and the ELSE condition (start append_commit_timer) will never be reached.

What will happen is then deb=pendant on the setting of burst_timer when bursting isn't enabled. If it is set to zero, it appears that COMMIT will not be appended after a packet transmission. If it is set to the default of 128 bit times (see subclause 30.16.1.1.7), the appended COMMIT will be longer than the append_commit_timer duration of 22 bit times.

SuggestedRemedy

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

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CI 148 SC 148.4.4.6 P 51 L 49 # 323

Law, David

HPE

Comment Type TR Comment Status A D-PLCA

When Figure 148–4 'PLCA Control state diagram' enters the NEXT_TX_OPPORTUNITY state, it will set `dplca_txop_claim` to TRUE. Since the exit conditions from the NEXT_TX_OPPORTUNITY state are an equation and an ELSE, one of the two will be true. As a result, the state diagram will exit the NEXT_TX_OPPORTUNITY state immediately, either transitioning to the RESYNC or WAIT_TO state. If the `nodeID` is non-zero, the PLCA Control state diagram will immediately transition to the WAIT_TO state, where it sets `dplca_txop_claim` to NONE.

When `dplca_aging` is ON, the operation of the Figure 148–9 'D-PLCA Aging State Diagram' is controlled by the `dplca_txop_end` variable from the PLCA Control state diagram. When `dplca_txop_end` is set TRUE by the PLCA Control state diagram, the D-PLCA Aging State Diagram will immediately transition from the WAIT_TXOP_END state to the TXOP_END state. The actions in the TXOP_END state will execute instantaneously, and then the D-PLCA Aging State Diagram will transition immediately to the UPDATE_SOFT, NOTIFY or UPDATE_HARD state depending on the value of `dplca_txop_claim`.

As a result, there is a form of race condition between the variables set in the PLCA Control state diagram and their use in the D-PLCA Aging State Diagram. The PLCA Control state diagram sets the variable `dplca_txop_claim` to TRUE in the NEXT_TX_OPPORTUNITY state immediately followed by setting the `dplca_txop_claim` variable to NONE in the WAIT_TO state (in the cases where the `nodeID` is non-zero). The D-PLCA Aging State Diagram state diagram exits the WAIT_TXOP_END state due to `dplca_txop_end` being TRUE, executes the actions in the WAIT_TXOP_END state, and then transitions either to the UPDATE_SOFT, NOTIFY or UPDATE_HARD state depending on the value of `dplca_txop_claim`.

Since actions inside a state block execute instantaneously (IEEE Std 802.3-2022, subclause 21.5.1), and the PLCA Control state diagram will exit the NEXT_TX_OPPORTUNITY state immediately, it is not clear if the value of `dplca_txop_claim` will be tested by the D-PLCA Aging State Diagram before or after it is set to NONE by the PLCA Control state diagram. If it is after it is set to NONE by the PLCA Control state diagram, the D-PLCA Aging State Diagram will not operate correctly as it will never reach the UPDATE_SOFT or UPDATE_HARD states.

Suggest that the PLCA Control state diagram should not transition out of the NEXT_TX_OPPORTUNITY state until the D-PLCA Aging State Diagram has tested the value of `dplca_txop_claim`. This can be achieved by waiting in the NEXT_TX_OPPORTUNITY state until the `dplca_txop_table_upd` is set to TRUE in the NOTIFY state of the D-PLCA Aging State Diagram. This condition should be ignored when `dplca_aging` is OFF.

SuggestedRemedy

Suggest that:

[1] The transition condition for the transition from the NEXT_TX_OPPORTUNITY state to the RESYNC state in Figure 148–4 'PLCA Control state diagram, part b' is changed to:

$((\text{local_nodeID} = 0) * (\text{curlID} \geq \text{plca_node_count})) + (\text{curlID} = 255) * (\text{dplca_txop_table_upd} + \text{dplca_aging} = \text{OFF})$

[2] The transition condition for the transition from the NEXT_TX_OPPORTUNITY state to the WAIT_TO state in Figure 148–4 'PLCA Control state diagram, part b' is changed to:

$((\text{local_nodeID} \neq 0) + (\text{curlID} < \text{plca_node_count})) * (\text{curlID} \neq 255) * (\text{dplca_txop_table_upd} + \text{dplca_aging} = \text{OFF})$

Response

Response Status C

ACCEPT IN PRINCIPLE.

[1] The transition condition for the transition from the NEXT_TX_OPPORTUNITY state to the RESYNC state in Figure 148–4 'PLCA Control state diagram, part b' is changed to:

$((\text{local_nodeID} = 0) * (\text{curlID} \geq \text{plca_node_count})) + (\text{curlID} = 255) * ((\text{dplca_txop_table_upd} + \text{dplca_aging} = \text{OFF}) + (!\text{dplca_en}))$

[2] The transition condition for the transition from the NEXT_TX_OPPORTUNITY state to the WAIT_TO state in Figure 148–4 'PLCA Control state diagram, part b' is changed to:

$((\text{local_nodeID} \neq 0) + (\text{curlID} < \text{plca_node_count})) * (\text{curlID} \neq 255) * ((\text{dplca_txop_table_upd} + (\text{dplca_aging} = \text{OFF}) + (!\text{dplca_en}))$

add variables `dplca_txop_table_upd` and `dplca_aging` to the variables list, with descriptions, "See 148.4.7.2".

Replace the definition of `dplca_en` in 148.4.4.2 (P46L32) with:

The `dplca_en` variable controls the operation of the optional D-PLCA function when D-PLCA is implemented. When the optional D-PLCA function is not implemented, the `dplca_en` variable is set to FALSE. When clause 30 management is present, this variable maps to TRUE when the `adPLCASupported` attribute is set to TRUE and the `adPLCAAdminState` is set to enabled, and maps to FALSE when the `adPLCASupported` attribute is set to FALSE or the `adPLCAAdminState` is set to disabled.

Values:

TRUE: The D-PLCA function is enabled

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

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 148.4.4.6

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Cl 148	SC 148.4.5.7	P 51	L 51	# 118	
Huszak, Gergely		Kone			
Comment Type	E	Comment Status	R		Editorial
Non-elementary expressions shall be embraced in a pair of parentheses					
<i>SuggestedRemedy</i>					
Change "!plca_txen" to "(!plca_txen)" at exit from ABORT and COLLIDE states (across 2 pages)					
Response		Response Status	C		
REJECT.					
When there is only a single term in the expression, there is no chance for ambiguity in order of operations, or need for grouping. Therefore no parentheses are needed. Note that these instances are in the base standard, unchanged by this draft amendment, and should be commented through the revision or maintenance process if the commenter wishes to pursue.					

Cl 148	SC 148.4.7	P 53	L 3	# 290	
Dawe, Piers		Nvidia			
Comment Type	E	Comment Status	A		EZ
Dynamic (D-PLCA) - ungrammatical					
<i>SuggestedRemedy</i>					
Change to: Dynamic PLCA (D-PLCA)					
Response		Response Status	C		
ACCEPT.					

Cl 148	SC 148.4.7.1	P 53	L 5	# 324	
Law, David		HPE			
Comment Type	T	Comment Status	A		D-PLCA
While subclause 148.4.7.1 'D-PLCA state diagram overview' provides a high-level overview of the operation of DPLCA, it does not provide the level of detail offered by subclause 148.4.4.1 'PLCA Control state diagram', subclause 148.4.5.1 'PLCA Data state diagram' and subclause 148.4.6.1 'PLCA Status state diagram' regarding the operation of the respective state diagrams. While strictly speaking, only the normative requirements (in this case, the state diagram) is required, it is difficult to review the operation of the state diagram without the additional description.					
<i>SuggestedRemedy</i>					
Suggest that subclause 148.4.7.1 'D-PLCA state diagram overview' be updated to provide a high-level description of the operation of the state diagram.					

Response	Response Status	C
ACCEPT IN PRINCIPLE.		

Propose add the following text at the end of section 148.4.4.1 of IEEE 802.3-2022:

When the optional Dynamic PLCA (D-PLCA) functionality is implemented, the PLCA control function also performs the detection of hard and soft commitment of other nodes to transmit opportunities for the purpose of identifying the availability of transmit opportunities within the PLCA cycle. Soft commits are from nodes with PLCA disabled or not implemented and is simply the reception of a packet during a transmit opportunity. Nodes that are not operating with PLCA enabled do not have a specific transmit opportunity assigned to them.

A hard commit is indicated by a sequence of COMMIT symbols that are appended or prepended to each packet. Hard commit sequences are transmitted in the following conditions:

- 1) in the COMMIT state when curID becomes equal to local_nodeID while the packetPending variable is TRUE, meaning this node now owns the transmit opportunity and has a packet to transmit.
- 2) in the BURST state following the transmission of a packet.

Propose add the following text at the end of section 148.4.7.1 P53 L24:

When D-PLCA functionality is enabled the node switches to the WAIT_BEACON state and waits for the reception of a BEACON. If no BEACON is detected before wait_beacon_timer_done and the coordinator role is allowed, the node promotes itself as the D-PLCA coordinator by switching to the COORDINATOR state.

The D-PLCA coordinator always maintains the plca_node_count such that transmit opportunity plca_node_count-1 is always unused. This allows new D-PLCA nodes to be added to the mixing segment by claiming this unused transmit opportunity. Upon detecting a node performing a hard claim on this transmit opportunity, the D-PLCA coordinator will switch to the INCREASE_NODE_COUNT state and increase plca_node_count by one to create a new unused transmit opportunity.

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The D-PLCA coordinator also shrinks `plca_node_count` to accommodate D-PLCA nodes being removed from the network. When the coordinator detects that no node has a hard claim on the last two transmit opportunities of the cycle it will switch to the `REDUCE_NODE_COUNT` state. In this state the coordinator will reduce `plca_node_count` to the highest hard claimed transmit opportunity, plus one to maintain an unused transmit opportunity at the end of the PLCA cycle.

Detection of a BEACON or a hard claim on transmit opportunity zero by the D-PLCA coordinator indicates the existence of another coordinator on the mixing segment. In this case, the D-PLCA coordinator switches to the `LEARNING` state where it demotes itself as a D-PLCA follower and begins identifying a transmit opportunity that it may claim.

Upon detection of a BEACON, new D-PLCA followers switch to the `LEARNING` state where they monitor the mixing segment for one PLCA cycle to identify transmit opportunities that have a hard claim. At the end of the PLCA cycle, the D-PLCA follower will select a free transmit opportunity that does not have a hard claim. The follower will continue to monitor all transmit opportunities maintaining a table of transmit opportunities that are claimed by other followers. Once the follower has selected a transmit opportunity, if it later detects another follower perform a hard claim on the same transmit opportunity, it will select a new transmit opportunity that does not have a hard claim.

If at any time BEACONs cease to be regularly detected and `plca_status` fails, followers will switch back to the `WAIT_BEACON` state through `DISABLED`.

CI 148	SC 148.4.7.1	P 53	L 12	# 325
Law, David		HPE		
Comment Type	TR	Comment Status	A	Editorial

Subclause 148.4.7.1 'D-PLCA state diagram overview' says that 'D-PLCA adjusts `aPLCANodeCount` and `aPLCALocalNodeID` based on transmit opportunity claims ...'. `aPLCANodeCount` and `aPLCALocalNodeID` are, however, management attributes that reflect the values of the `plca_node_count` and `local_nodeID` variables, respectively. Since IEEE Std 802.3 subclause 30.1 'Overview' says, 'Implementation of part or all of Layer Management is not a requirement for conformance to any other clause of this standard.', the D-PLCA state diagram has to be able to operate in the absence of these attributes.

SuggestedRemedy

Suggest that the text 'D-PLCA adjusts `aPLCANodeCount` and `aPLCALocalNodeID` based on transmit opportunity claims ...' is changed to read 'D-PLCA adjusts `plca_node_count` and `local_nodeID` based on transmit opportunity claims ...'.

Response	Response Status	C
ACCEPT.		

CI 148	SC 148.4.7.2	P 54	L 9	# 207
Zimmerman, George		CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So		
Comment Type	T	Comment Status	A	D-PLCA

shouldn't `hard_aging_cycles` (and the associated `soft_aging` and counters) have a range?
Not sure what it would be right now...

SuggestedRemedy

Consider ranges for aging cycles variables.

Response	Response Status	C
ACCEPT IN PRINCIPLE.		

Change to read:

`soft_aging_cycles`

Defines the number of BEACON cycles before the SOFT claims over the transmit opportunities expire. When clause 30 management is implemented, this variable maps to the `aDPLCASoftAgingCycles` attribute defined in 30.16.1.1.8.

Values: integer from 1 to 65535

Default: 50

`hard_aging_cycles`

Defines the number of BEACON cycles before the HARD claims over the transmit opportunities expire. When clause 30 management is implemented, this variable maps to the `aDPLCAHardAgingCycles` attribute defined in 30.16.1.1.9.

Values: integer from 1 to 65535

Default: 1000

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CI 148 SC 148.4.7.2 P 54 L 39 # 148

Baggett, Tim Microchip

Comment Type T Comment Status A D-PLCA

There are only 255 usable transmit opportunities, 0->254. The local_nodeID value of 255 is reserved for PLCA disabled. This can be seen by the global transition into the DISABLE state of Figure 148-3 - PLCA Control state diagram. This global transition condition includes the term (local_nodeID=255). Also, the transition from NEXT_TX_OPPORTUNITY to RESYNC (via B) to transmit begin a new PLCA cycle occurs when curlD=255, after curlD was incremented in NEXT_TX_OPPORTUNITY. There is no Transmit Opportunity 255.

A number of variables and functions need to be updated to reflect this.

SuggestedRemedy

P54 L39 (txop_claim_table)

Change: "...claim state of the 256 transmit opportunities IDs."

To: "...claim state of the 255 transmit opportunity IDs."

P54 L51 (txop_claim_table)

Change: "Array of 256 elements..."

To: "Array of 255 elements..."

P55 L14 (CLEAR_TXOP_TABLE)

Change: "...all of the 256 elements..."

To: "...all of the 255 elements..."

P55 L19 (HARD_CLAIMING)

Change: "...range of 0 to 255..."

To: "...range of 0 to 254..."

P55 L40 (SOFT_CLAIMING)

Change: "...range of 0 to 255..."

To: "...range of 0 to 254..."

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #150.

Incorporate slides 8 & 9 of

https://www.ieee802.org/3/da/public/0125/Baggett_3da_Cmts148_150_plca_variable_ranges_v01.pdf

CI 148 SC 148.4.7.4 P 55 L 47 # 326

Law, David

HPE

Comment Type TR Comment Status A D-PLCA

Subclause 148.4.7.4 'Timers' says that wait_beacon_timer '... is defined by the aDPLCAWaitBeaconTimer configuration Parameter.'. aDPLCAWaitBeaconTimer, however, is not a configuration parameter but a management attribute, one of four types of elements found in a managed object (see the third paragraph of subclause 30.1.4 'Management model'). Further, IEEE Std 802.3 subclause 30.1 'Overview' says, 'Implementation of part or all of Layer Management is not a requirement for conformance to any other clause of this standard.'. This timer, therefore, must be defined to operate in the absence of this attribute.

SuggestedRemedy

[1] Suggest that 30.16.1.1.12 'aDPLCAWaitBeaconTimer' is changed to read:

30.16.1.1.12 aDPLCAWaitBeaconTimer

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET operation returns the current wait_beacon_timer value in bit times (see 148.4.7.4).

A SET operation changes the wait_beacon_timer value. The value of this attribute is preserved across reset, including loss of power.;

[2] Suggest that wait_beacon_timer in subclause 148.4.7.4 'Timers' is changed to read:

wait_beacon_timer

Represents the time the D-PLCA state diagram waits for a BEACON indication.

Duration: 40 bit times.

Tolerance: +/- 1 bit time.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #299.

Change the duration of the wait_beacon_timer (in 148.4.7.4, P55 L45) to read:

Duration: the duration of this timer is four times a random integer uniformly distributed ranging from 40 and 295 inclusive, in bit times, selected upon entering the DISABLED state. (tolerance remains unchanged)

Delete 30.16.1.1.12 aDPLCAWaitBeaconTimer

Delete row for aDPLCAWaitBeaconTimer in Table 30-11 in 30.2.5

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CI 148 SC 148.4.7.5 P 56 L 12 # 151

Baggett, Tim Microchip

Comment Type T Comment Status A D-PLCA

DPLCA is intended to work with nodes statically assigned node IDs. If a node is statically assigned to a node ID greater than 7 then it is possible that the DPLCA coordinator will never expand the node count and therefore the number of transmit opportunities enough to allow for the statically assigned node to gain a transmit opportunity. This occurs because the plca_node_count is initialized to 8, allowing for TOs 0-7. If no node ever claims TO 7, then the DPLCA coordinator will never increase the plca_node_count upwards.

A proposed solution is to change the assigned initialization value of plca_node_count from 8 to 255 in the WAIT_BEACON state. This will start the DPLCA coordinator with the longest possible PLCA cycle with all possible transmit opportunities available and giving the statically assigned nodes a chance to hard commit. The DPLCA coordinator will then shrink the plca_node_count downwards. The disadvantage is that this may increase the convergence time.

SuggestedRemedy

In the WAIT_BEACON state of Figure 148-8, change the initialization value of plca_node_count from 8 to 255.

Response Response Status C

ACCEPT IN PRINCIPLE.

Insert new third sentence in second paragraph of 148.4.7.1 after, "When a mixing segment contains a mixture of nodes with D-PLCA active and not active, the D-PLCA nodes select IDs outside the space of the statically assigned IDs." stating, "When using D-PLCA with statically assigned IDs, values in the range of 0 to 7 should be used first."

Change P55 L32 (148.4.7.3) in definition of PICK_FREE_TXOP from:

"b. it shall not return an ID greater than the highest HARD claimed in the table, unless this is the only one available."

to: "b. 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."

CI 148 SC 148.4.7.5 P 56 L 31 # 119

Huszk, Gergely Kone

Comment Type E Comment Status R Editorial

Non-elementary expressions shall be embraced in a pair of parentheses

SuggestedRemedy

Change "!dplca_new_age" to "(!dplca_new_age)" at exit from INCREASE_NODE_COUNT

Response Response Status C

REJECT.

When there is only a single term in the expression, there is no chance for ambiguity in order of operations, or need for grouping. Therefore no parentheses are needed. Note that adding parentheses would be inconsistent with usage in the base standard in the same clause.

CI 148 SC 148.4.7.5 P 56 L 35 # 149

Baggett, Tim Microchip

Comment Type T Comment Status R D-PLCA

There are only 255 usable transmit opportunities, 0->254. The local_nodeID value of 255 is reserved for PLCA disabled. This can be seen by the global transition into the DISABLE state of Figure 148-3 - PLCA Control state diagram. This global transition condition includes the term (local_nodeID=255). Also, the transition from NEXT_TX_OPPORTUNITY to RESYNC (via B) to transmit begin a new PLCA cycle occurs when curID=255, after curID was incremented in NEXT_TX_OPPORTUNITY. There is no Transmit Opportunity 255.

Figure 148-8 DPLCA Control State Diagram incorrectly allows for the PLCA bus cycle to expand to allow Transmit Opportunity ID 255 to exist.

SuggestedRemedy

In the Figure 148-8 state transition from COORDINATOR to INCREASE_NODE_COUNT,

Change: "(plca_node_count < 255) *"

To: "(plca_node_count < 254) *"

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

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CI 148 SC 148.4.7.6 P 57 L 2 # 120

Huszak, Gergely

Kone

Comment Type E Comment Status R Editorial

Non-elementary expressions shall be embraced in a pair of parentheses

SuggestedRemedy

Change "dplca_aging = OFF" to "(dplca_aging = OFF)" at entry to DISABLED,
"dplca_txop_claim = SOFT" to "(dplca_txop_claim = SOFT)" at entry to UPDATE_SOFT,
"dplca_txop_claim = NONE" to "(dplca_txop_claim = NONE)" at entry to NOTIFY,
"dplca_txop_claim = HARD" to "(dplca_txop_claim = HARD)" at entry to UPDATE_HARD,
and "!dplca_txop_end" to "(!dplca_txop_end)" to exit from NOTIFY

Response Response Status C

REJECT.

When there is only a single term in the expression, there is no chance for ambiguity in order of operations, or need for grouping. Therefore no parentheses are needed. Note that adding parentheses would be inconsistent with usage in the base standard in the same clause.

CI 148 SC 148.4.7.6 P 57 L 19 # 327

Law, David

HPE

Comment Type E Comment Status A State Diagrams

Both soft_aging_cycles and hard_aging_cycles are defined as variables in subclause 148.4.7.1. As a result, their use in Figure 148–9 'D-PLCA Aging State Diagram' should be in lowercase.

SuggestedRemedy

Suggest that in the TXOP_END state:

- [1] 'IF short_cnt = SOFT_AGAIN_CYCLES THEN' should be changed to read 'IF short_cnt = soft_aging_cycles THEN'.
[2] 'IF long_cnt = HARD_AGING_CYCLES THEN' should be changed to read 'IF long_cnt = hard_aging_cycles THEN'.

Response Response Status C

ACCEPT.

CI 148 SC 148.4.7.6 P 57 L 19 # 328

Law, David

HPE

Comment Type E Comment Status A Editorial

Typo.

SuggestedRemedy

In the TXOP_END state, '... = SOFT_AGAIN_CYCLES ...' should read '... = SOFT_AGING_CYCLES ...'.

Response Response Status C

ACCEPT IN PRINCIPLE.

Implement commenters resolution and harmonize with comment #327 (state diagrams).

CI 148 SC 148.4.7.6 P 57 L 26 # 329

Law, David

HPE

Comment Type E Comment Status A State Diagrams

The CLEAR_TXOP_TABLE() function is defined in subclause 148.4.7.3. As a result, its use in Figure 148–9 'D-PLCA Aging State Diagram' should be in uppercase. This is the case in the DISABLED state but not the TXOP_END state.

SuggestedRemedy

Suggest that in the TXOP_END state 'clear_txop_table(txop_claim_table_new)' should read 'CLEAR_TXOP_TABLE(txop_claim_table_new)'.

Response Response Status C

ACCEPT.

IEEE P802.3da D2.0 10 Mbps Multidrop Enhancements

Cl 148 SC 148.7.5 P 56 L 18 # 299

McClellan, Brett

Marvell

Comment Type TR Comment Status A D-PLCA

In Figure 148–8 D-PLCA Control State Diagram, in the COORDINATOR state, a coordinator lockup happens when two nodes send the BEACON at the same time. The PLCA is not able to register activity from other nodes while transmitting BEACON.

SuggestedRemedy

I will submit a presentation on proposed changes to the D-PLCA Control State Diagram.

Response Response Status U

ACCEPT IN PRINCIPLE.

Change the duration of the wait_beacon_timer (in 148.4.7.4, P55 L45) to read:

Duration: the duration of this timer is four times a random integer uniformly distributed ranging from 40 and 295 inclusive, in bit times, selected upon entering the DISABLED state. (tolerance remains unchanged)

Delete 30.16.1.1.12 aDPLCAWaitBeaconTimer

Delete row for aDPLCAWaitBeaconTimer in Table 30-11 in 30.2.5

Cl 188 SC 188 P 60 L 1 # 177

Maguire, Valerie

Copperopolis; aff'l w/ CME Consulting and Cisco

Comment Type E Comment Status A EZ

and' seems like a better word choice than 'to' here.

SuggestedRemedy

Replace "Insert Clause 188 to Clause 189 in numeric order:" with "Insert Clause 188 and Clause 189 in numeric order:"

Response Response Status C

ACCEPT.

Cl 188 SC 188 P 60 L 1 # 155

Baggett, Tim

Microchip

Comment Type T Comment Status R 10BASE-T1S

Clause 147 specifies a PHY with three fundamentally different analog drivers/receivers: Multidrop, point-to-point half duplex and point-to-point full duplex. The analog impedances are different, and full-duplex requires an echo canceller / hybrid. Because of this multidrop has primarily been implemented in the market. Where point-to-point is needed, 10BASE-T1L or 100BASE-T1 seems to be a better choice.

To aid in market acceptance of 10BASE-T1M as the same technology as 10BASE-T1S (multidrop), recommend deprecating/deleting point-to-point full and half duplex from Clause 147. Then merging Clause 188 into Clause 147 by adding 10BASE-T1M TCI and segment.

SuggestedRemedy

Delete point-to-point full and half duplex from Clause 147.

Merge Clause 188 into Clause 147 *adding* specifications for TCI and enhanced mixing segment specifications. We do not delete existing Clause 147 multidrop MDI and mixing segment specifications.

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

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CI 188 SC 188 P 60 L 4 # 123

Jones, Peter Cisco Systems

Comment Type T Comment Status A New Feature

We have discussed physical topology discovery many times, but we have not specified it in the draft.

SuggestedRemedy

Implement proposal to be submitted at least one week before January interim

Response Response Status U

ACCEPT IN PRINCIPLE.

Accommodated by comment #121.

Insert an Editor's note at 78.3 stating:

"Editor's Note (to be removed prior to final Working Group recirculation): The CRG is considering adding new features associated with new LLDP TLVs in response to required comments. This text does not currently have consensus to adopt, but is included here for the ballot pool to consider the concept. Please see https://www.ieee802.org/3/da/public/0125/JASON_TO_PROVIDE.pdf, https://www.ieee802.org/3/da/public/0125/jones_3da_01_ldp_mpo.pdf, and https://www.ieee802.org/3/da/public/0125/jones_3da_01_ldp_mpo_proposal.pdf for use cases and information. Unapproved text related to this follows:"

Insert text from SPMD_potterf_LLDP_TLV_Proposals.pdf

(Editor to put unapproved text in a box)

CI 188 SC 188.1 P 60 L 14 # 208

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

Comment Type T Comment Status R 10BASE-T1S

if the clause 188 specification is a refinement and subtype of clause 147, then this needs to be stated in the overview (SUBTYPE)

SuggestedRemedy

Insert at the end of the first paragraph of 188.1 "The 10BASE-T1Sm PCS and PMA specifications in this clause are refinements of the specifications in Clause 147 when the multidrop mode of operation is the only mode used. In some cases they are tightened for improved interoperability, or restated for clarity. Mixing segment specifications and the specifications for the interface from the PHY to the medium are restated and altered to improve usability and increase plug-and-play functionality.

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

CI 188 SC 188.1 P 61 L 13 # 145

D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei

Comment Type TR Comment Status A MII

Fig 188-1 indicates that the MII is optional via Note 1. However, other parts of Clause 188 are written in such a way that assumes the MII is present. Therefore, it is assumed that Note 1 is really discussing a physical implementation of the MII.

Other BASE-T clauses address this by inclusion of a subclause that addresses interfaces and notes that implementations of the xMII interface are optional. Reference 165.1.5

SuggestedRemedy

Following changes are proposed -

1. Modify Note 1 of Figure 188-1 to read "Physical implementation of MII is optional."
2. Add new subclause -
Interfaces

All 10BASE-T1M PHY implementations are compatible at the MDI and at the MII, if implemented. Physical implementation of the MII is optional. Designers are free to implement circuitry within the PCS and PMA in an application-dependent manner provided that the MDI and MII (if the MII is implemented) specifications are met. System operation from the perspective of signals at the MDI and management objects are identical whether the MII is physically implemented or not.

Response Response Status W

ACCEPT IN PRINCIPLE.

(Editor's note: Commenter did not indicate where to add new subclause. Editor proposes as 188.1.2 - re-numbering "Conventions in this clause" as 188.1.3. No other changes to Suggested Remedy.)

1. Modify Note 1 of Figure 188-1 to read "Physical implementation of MII is optional."
2. Add new subclause 188.1.2 and re-number following subclauses.
Interfaces

All 10BASE-T1M PHY implementations are compatible at the MDI and at the MII, if implemented. Physical implementation of the MII is optional. Designers are free to implement circuitry within the PCS and PMA in an application-dependent manner provided that the MDI and MII (if the MII is implemented) specifications are met. System operation from the perspective of signals at the MDI and management objects are identical whether the MII is physically implemented or not.

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CI 188 SC 188.1.2.2 P 61 L 46 # 64

Ran, Adeo

Cisco

Comment Type E Comment Status A State Diagrams

"All timers operate in the manner described in 40.4.5.2"

This statement appears in 188.1.2.2 and in 189.1.3.2.

The referenced subclause, 40.4.5.2, points to 14.2.3.2, where timer conventions are described; it also makes an additional convention (regarding "stop timer") that is not used in clause 188 (in this amendment it is only used in Figure 148-4).

Also, 189.4.4.3 and 189.5.3.4 repeat the timers convention with the same text as in 40.4.5.2.

The result is a bit messy: apparent contradictory cross-references, which are in fact duplicate, and unnecessary indirect cross references due to a convention that is not used.

SuggestedRemedy

In 188.1.2.2 and 189.1.3.2, change the cross-reference to 14.2.3.2.

In 189.4.4.3 and 189.5.3.4, delete the "conventions" statements (they are duplicates and covered by the general conventions in the subclauses above).

Response Response Status C

ACCEPT IN PRINCIPLE.

Change cross references in 188.1.2.2 and 189.1.3.2 to 14.2.3.2

Delete the first sentence of 189.4.4.3 (P107 L53 & 54) "All timers operate in the manner described in 14.2.3.2 with the following addition: a timer is reset and stops counting upon entering a state where "stop_x_timer" is asserted."

Delete the first sentence of 189.5.3.4 (P118 L14 & 15) (same sentence).

CI 188 SC 188.2 P 62 L 11 # 209

Zimmerman, George

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

Comment Type E Comment Status A EZ

"two level Differential Manchester Encoding" should have "two level" hyphenated, as it is a compound adjective.

SuggestedRemedy

Change two level to two-level

Response Response Status C

ACCEPT.

CI 188 SC 188.3 P 63 L 18 # 158

Baggett, Tim

Microchip

Comment Type E Comment Status A Primitives

Remove PCS_STATUS.indication from diagram. It is not used since point-to-point is not supported.

SuggestedRemedy

Remove PCS_STATUS.indication from diagram at line 18

Remove Remove PCS_STATUS.indication(pcs_status) at line 51

Response Response Status C

ACCEPT.

CI 188 SC 188.3 P 63 L 49 # 260

Wienckowski, Natalie

IVN Solutions LLC

Comment Type T Comment Status A Primitives

remove service primitives that aren't in figure 188-2

SuggestedRemedy

Delete PMA_LINK.indication (link_status) and PMA_LINK.request (link_control) from list of service primitives.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #157.

Delete the following lines:

P63 L49: PMA_LINK.indication (link_status)

P63 L50: PMA_LINK.request (link_control)

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CI 188	SC 188.3	P 63	L 49	# 21
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Jones, Peter Cisco Systems

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

In "188.3 Service primitives and interfaces", the PMA_LINK.indication () and PMA_LINK.request () service primitives need to be removed.
These are only used by Autoneg/Technology Dependent Interface (see 98.4.1) which does not apply to T1M, so should be removed.

SuggestedRemedy
Remove PMA_LINK.indication () and PMA_LINK.request () from the list.

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

Accommodated by comment #157.

Delete the following lines:
P63 L49: PMA_LINK.indication (link_status)
P63 L50: PMA_LINK.request (link_control)

CI 188	SC 188.3	P 63	L 49	# 157
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Baggett, Tim Microchip

Comment Type **E** Comment Status **A** Primitives

The PMA_LINK.request/indication service primitives do not exist in 10BASE-T1M since AutoNeg is not supported. They do not appear in figure 188-2, and therefore should not appear in the list of service primitives.

SuggestedRemedy
Delete the following lines:
P63 L49: PMA_LINK.indication (link_status)
P63 L50: PMA_LINK.request (link_control)

Response Response Status **C**
ACCEPT.

CI 188	SC 188.3	P 63	L 49	# 247
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Opsasnick, Eugene Broadcom Inc.

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

PMA_LINK.indication and PMA_LINK.request are listed as two of the service primitives across the PMA service interface, but they do not appear in Figure 188-2 between the PMA and PCS blocks, nor do they have a description in the 188.3.x subclauses.

SuggestedRemedy
These two primitives should be removed from this list or else added to figure 188-2 and defined further in a subclause within 188.3.

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

Accommodated by comment #157.

Delete the following lines:
P63 L49: PMA_LINK.indication (link_status)
P63 L50: PMA_LINK.request (link_control)

CI 188	SC 188.3	P 63	L 51	# 248
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Opsasnick, Eugene Broadcom Inc.

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

PCS_STATUS.indication is listed as one of the primitives on the PMA service interface and is shown in Figure 188-2 along with PMA_UNITDATA.indication, PMA_UNITDATA.request, and PMA_CARRIER.indication. PMA_UNITDATA.indication is defined in subclause 188.3.1. PMA_UNITDATA.request is defined in subclause 188.3.2. PMA_CARRIER.indication is defined in 188.3.3. PCS_STATUS.indication has no definition.

SuggestedRemedy
Add subclause 188.3.4 to define the semantics, when generated, and effect upon receipt of this primitive.

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

Accommodated by comment #158.

Remove PCS_STATUS.indication from diagram at line 18
Remove PCS_STATUS.indication(pcs_status) at line 51

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CI 188 SC 188.3.2.3 P 64 L 48 # 159

Baggett, Tim Microchip

Comment Type E Comment Status A Primitives

Text refers reader to DME encoding rules in 188.5. The DME rules are, however, in 188.5.2.

SuggestedRemedy

Change:

"DME following rules in 188.5"

To:

"DME following rules in 188.5.2"

Note: If this change is accepted, I would like to make the same correction in 147.2.2.3 either in 3.da or maintenance.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change:

"DME following rules in 188.5"

To:

"DME following rules in 188.5.2"

Change:

"Upon receipt of this primitive the"

To:

"Upon receipt of this primitive, the"

(Editor's note: changes to clause 147 because of multidrop would need to be made via a maintenance request.)

CI 188 SC 188.4 P 65 L 21 # 130

Huber, Thomas Nokia

Comment Type E Comment Status A PCS

The two sentences in this paragraph are not self-consistent. The first says the PCS consists of 3 functions that are shown in figure 188-3, the second describes 4 functions within the PCS.

SuggestedRemedy

add "and the PCS Loopback function" to the end of the first sentence. Or delete the clause in the second sentence that points to the loopback function.

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Operation of PCS loopback isn't really a functional block. Somehow it got promoted to one in the text in clauses 146 & 147, where previously it was simply described.)

Change the second sentence from:

"...the PCS Receive function is explained in 188.4.3, and the PCS Loopback function is explained in 188.4.4."

to:

"... the PCS Receive function is explained in 188.4.3. Operation of PCS Loopback is explained in 188.4.4."

Additionally, change the description on PICS Item PCSL2 (188.12.4.3, page 97, line 27) from "PCS loopback function" to "Operation of PCS loopback", and append "When in PCS loopback mode," to the "Value/Comment" text to read "When in PCS loopback mode, the PCS shall accept..."

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CI 188 SC 188.4 P 65 L 23 # 210

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

Comment Type T Comment Status A PCS

PCS loopback isn't a "function" as in a functional block. It is an operation. In 188.4.4 it is called a mode.

SuggestedRemedy

Change "and the PCS Loopback function is explained in 188.4.4" to "and operation in PCS Loopback mode is explained in 188.4.4".

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #130.
(note that comment #130 also fixes the PICS).

Change the second sentence from:

"...the PCS Receive function is explained in 188.4.3, and the PCS Loopback function is explained in 188.4.4."

to:

"... the PCS Receive function is explained in 188.4.3. Operation of PCS Loopback is explained in 188.4.4."

Additionally, change the description on PICS Item PCSL2 (188.12.4.3, page 97, line 27) from "PCS loopback function" to "Operation of PCS loopback", and append "When in PCS loopback mode," to the "Value/Comment" text to read "When in PCS loopback mode, the PCS shall accept..."

CI 188 SC 188.4.2.1 P 66 L 1 # 22

Jones, Peter Cisco Systems

Comment Type TR Comment Status A PCS

In "Figure 188-3—PCS reference diagram", the "Technology Dependent Interface" should not be here. It's only used by AutoNeg which is not supported by T1M.

SuggestedRemedy

Remove "Technology Dependent Interface" and associated signals.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #160.

Make the following changes:

P66 L2 - Delete from Figure 188-3 the Technology Dependent Interface and link_control lines to PCS TRANSMIT and PCS RECEIVE boxes.

P67 L10 - Delete the link_control variable entry (lines 10-15)

P71 L4 - Figure 188-4 - Change the transition logic into the SILENT state from:

pcs_reset + (link_control = DISABLE)

to:

pcs_reset

P73 L51 - Delete the link_control variable entry (lines 51-53)

P76 L3 - Figure 188-7 - Change the transition logic into the WAIT_SYNC state from:

pcs_reset + (transmitting) + (link_control = DISABLE)

to:

pcs_reset + (transmitting)"

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CI 188 SC 188.4.2.1 P 66 L 2 # 160

Baggett, Tim Microchip

Comment Type E Comment Status A PCS

Link control is not needed since AutoNeg is not supported and therefore needs to be fully removed.

SuggestedRemedy

Make the following changes:

P66 L2 - Delete from Figure 188-3 the Technology Dependent Interface and link_control lines to PCS TRANSMIT and PCS RECEIVE boxes.

P67 L10 - Delete the link_control variable entry (lines 10-15)

P71 L4 - Figure 188-4 - Change the transition logic into the SILENT state from:

pcs_reset + (link_control = DISABLE)

to:

pcs_reset

P73 L51 - Delete the link_control variable entry (lines 51-53)

P76 L3 - Figure 188-7 - Change the transition logic into the WAIT_SYNC state from:

pcs_reset + (transmitting) + (link_control = DISABLE)

to:

pcs_reset + (transmitting)

Response Response Status C

ACCEPT.

CI 188 SC 188.4.2.1 P 66 L 38 # 211

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

Comment Type E Comment Status A PCS

Figure 188-3 doesn't show PCS loopback (neither do the similar figures in 802.3)

SuggestedRemedy

Add to Figure 188-3, "NOTE - PCS Loopback not shown for clarity."

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Loopback is not capitalized when following PCS. Suggest it's not necessary to say why PCS loopback isn't shown.)

Add to Figure 188-3, "NOTE - PCS loopback not shown."

CI 188 SC 188.4.2.2 P 67 L 11 # 23

Jones, Peter Cisco Systems

Comment Type TR Comment Status A EZ

link_control is only used by AutoNeg which is not supported by T1M.

SuggestedRemedy

Remove the definition of link_control.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #160.

P66 L2 - Delete from Figure 188-3 the Technology Dependent Interface and link_control lines to PCS TRANSMIT and PCS RECEIVE boxes.

P67 L10 - Delete the link_control variable entry (lines 10-15)

P71 L4 - Figure 188-4 - Change the transition logic into the SILENT state from:

pcs_reset + (link_control = DISABLE)

to:

pcs_reset

P73 L51 - Delete the link_control variable entry (lines 51-53)

P76 L3 - Figure 188-7 - Change the transition logic into the WAIT_SYNC state from:

pcs_reset + (transmitting) + (link_control = DISABLE)

to:

pcs_reset + (transmitting)

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CI 188 SC 188.4.2.2 P 67 L 11 # 65

Ran, Adeel

Cisco

Comment Type TR Comment Status A PCS

link_control definition says "This variable is generated by the Auto-Negotiation function" - but 188.1.1 says this function is not available for this PHY.
The definition makes it unclear whether this is a control variable or a status indicator. If it is programmable it should be mapped to some MDIO register?

SuggestedRemedy

Delete the text about Auto-Negotiation, and clarify if this variable is a control or a status indicator. Add MDIO register mapping if necessary.

Response Response Status W

ACCEPT IN PRINCIPLE.

Accommodated by comment #160.

P67 L10 - Delete the link_control variable entry (lines 10-15)

CI 188 SC 188.4.2.3 P 68 L 2 # 249

Opsasnick, Eugene

Broadcom Inc.

Comment Type E Comment Status R PCS

The constant BEACON is missing from the list of constants.

SuggestedRemedy

Add BEACON "5B symbol defined as 'N' in the 4B/5B encoding" in alphabetical order in the list of constants in 188.4.2.3.

Response Response Status C

REJECT.

The constants defined are the constants used in the state diagram being defined. While the other defined constants are actually used in the state diagram (see, e.g., coming out of the COMMIT state where it tests tx_cmd = SILENCE), BEACON is not used as a constant in the PCS transmit diagram.

The commenter points out in comment 254 that BEACON shows up in the definition of the ENCODE function.

The use of BEACON as an encoding is fully defined in Table 188-1, under the definition of the function, but the value itself is not used in the diagram. The text is clear.

CI 188 SC 188.4.2.7 P 71 L 15 # 66

Ran, Adeel

Cisco

Comment Type TR Comment Status A State Diagrams

In Figure 188-4, the condition for the transition arc from SILENT to itself contains the phrase "(tx_sym <= TXCMD_ENCODE(tx_cmd))" - this is an assignment that cannot be a condition. It looks like a copy of the assignment within this state, rather than the intended condition; perhaps the intent was "tx_cmd != COMMIT".

SuggestedRemedy

Correct the condition to whatever it should be, without an assignment.

Response Response Status W

ACCEPT IN PRINCIPLE.

Accommodated by comment #164

In the transition condition from SILENT to SILENT, change the last term from:
(tx_sym <= TXCMD_ENCODE(tx_cmd))

to:
(tx_cmd != COMMIT)

CI 188 SC 188.4.2.7 P 71 L 15 # 131

Huber, Thomas

Nokia

Comment Type T Comment Status A State Diagrams

The last term in the transition from SILENT back to SILENT is "(tx_sym <- TXCMD_ENCODE(tx_cmd))", which appears to be a copy-paste error. Presumably the intent is tx_cmd != COMMIT, as that would cover all the cases that are not covered by the other two transitions.

SuggestedRemedy

Change "tx_sym <- TXCMD_ENCODE(tx_cmd)" to "tx_cmd != COMMIT"

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #164.

In the transition condition from SILENT to SILENT, change the last term from:
(tx_sym <= TXCMD_ENCODE(tx_cmd))

to:
(tx_cmd != COMMIT)

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Cl 188 SC 188.4.2.7 P71 L 15 # 164

Baggett, Tim Microchip

Comment Type TR Comment Status A State Diagrams

Figure 188-4 - PCS Transmit state diagram, part a
The transition condition from SILENT to SILENT is different from Clause 147 Figure 147-4.
The last term was (tx_cmd!=COMMIT) but is now (tx_sym<=TXCMD_ENCODE(tx_cmd)).
The new term isn't equivalent and having an assignment in a state transition condition makes no sense.

SuggestedRemedy

In the transition condition from SILENT to SILENT, change the last term from:
(tx_sym <= TXCMD_ENCODE(tx_cmd))
to:
(tx_cmd != COMMIT)

Response Response Status C

ACCEPT.

Cl 188 SC 188.4.2.7 P71 L 15 # 250

Opsasnick, Eugene Broadcom Inc.

Comment Type TR Comment Status A EZ

In Figure 188-4, the transition condition for the state SILENT to go back to itself contains an assignment which is not appropriate for a state transition condition. It also has an unblanced parenthesis. The condition is "STD * (!TX_EN) * (tx_sym <= TXCMD_ENCODE(tx_cmd))".

SuggestedRemedy

This state transition should probably be "STD * (!TX_EN) * (tx_cmd != COMMIT)".

Response Response Status W

ACCEPT IN PRINCIPLE.

Accommodated by comment #164.

In the transition condition from SILENT to SILENT, change the last term from:
(tx_sym <= TXCMD_ENCODE(tx_cmd))
to:
(tx_cmd != COMMIT)

Cl 188 SC 188.4.2.7 P72 L 13 # 24

Jones, Peter Cisco Systems

Comment Type TR Comment Status R New Feature

"188.4.2.9 Jabber functional requirements" describes how to detect jabber, and that's implemented in Figure 188-5, but there isn't a definition to a counter to record the error.

SuggestedRemedy

Define a "local jabber" counter in "188.4.2.2 Variables" and increment it in the "PCS Transmit state diagram".
Add a clause 45 object to expose this.
Base the new object on "45.2.3.74 10BASE-T1M / 10BASE-T1S PCS diagnostic 1"

Response Response Status U

REJECT.

Comment provides insufficient information to implement remedy.

No consensus for change.

Cl 188 SC 188.4.2.8 P72 L 41 # 1

He, Xiang Huawei Technologies

Comment Type E Comment Status A EZ

The term "self-synchronizing scrambler" has been used all over this subclause and is the preferred term in 802.3. "multiplicative scrambling" is used in the first sentence.

SuggestedRemedy

Change "multiplicative" to "self-synchronizing".

Response Response Status C

ACCEPT.

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CI 188 SC 188.4.2.8 P72 L48 # 251

Opsasnick, Eugene

Broadcom Inc.

Comment Type E Comment Status A PCS

In the last paragraph on page 72, the scrambler reset description states:

"The scrambler is reset upon execution of the PCS Reset function. If the PCS Reset is executed, all bits of the 17-bit vector representing the self-synchronizing scrambler state are arbitrarily set. The initialization of the scrambler state is left to the implementer. In no case shall the scrambler state be initialized to all zeros."

The sentence "The initialization of the scrambler state is left to the implementor." is redundant with the previous sentence that states "... all bits of the ... scrambler are arbitrarily set." and can be removed. However, the next sentence that states the scrambler shall not be reset to all zeros which contradicts the statement that the initial state can be completely arbitrary.

SuggestedRemedy

Suggest changing the quoted text to something like:

"The scrambler is reset upon execution of the PCS Reset function. When the PCS Reset is executed, the 17-bit vector representing the self-synchronizing scrambler state shall be set to a non-zero value."

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #67

At P72 L50, Delete "The initialization of the scrambler state is left to the implementer. In no case shall the scrambler state be initialized to all zeros."

Delete PICS item PCST5

(Editor's note: Commenter should consider maintenance on Clause 147 which has the same sentence.)

CI 188 SC 188.4.2.8 P72 L49 # 67

Ran, Adeo

Cisco

Comment Type TR Comment Status A PCS

"In no case shall the scrambler state be initialized to all zeros."

This is a valid requirement for an additive scrambler, but it is not necessary for a multiplicative (self-synchronizing) scrambler. Furthermore, it is impossible to detect whether this requirement is met; the scrambler state can occasionally be set to zero even during normal operation (assuming the incoming data in TXD is random, it will statistically happen once every 2^{17} bits, many times per second). A temporary zero state is not a problem; the state will change whenever a nonzero bit appears in TXD, and the output is DME-encoded anyway so there is no clock recovery issue. Neither is it a problem if it is initialized to this value at PCS reset.

Compare to the self-synchronizing scrambler of 49.2.6 (which is used in multiple high-speed PCS sublayers); it has no requirements for initialization, and in fact its state is initialized to 0 in many implementations.

There is also a PICS item for this unnecessary requirement.

SuggestedRemedy

Delete the quoted sentence.
Delete PICS item PCST5.

Response Response Status W

ACCEPT IN PRINCIPLE.

At P72 L50, Delete "The initialization of the scrambler state is left to the implementer. In no case shall the scrambler state be initialized to all zeros."

Delete PICS item PCST5

(Editor's note: Commenter should consider maintenance on Clause 147 which has the same sentence.)

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CI 188 SC 188.4.2.9 P 73 L 16 # 261

Wienckowski, Natalie

IVN Solutions LLC

Comment Type E Comment Status A Editorial

There is a run-on sentence that needs a comma to make it readable.

SuggestedRemedy

Add comma between "receivers" and "then" in the following sentence.

If the packet being transmitted continues longer than the specified time duration, the PCS Transmit sends an ESD, ESDJAB symbol sequence to notify the receivers then inhibits further transmissions for at least the duration of unjab_timer.

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace:

"the PCS Transmit sends an ESD, ESDJAB symbol sequence to notify the receivers then inhibits further transmission..."

with:

"the PCS Transmit sends an ESD, ESDJAB symbol sequence. This sequence notifies the receivers and inhibits further transmission..."

CI 188 SC 188.4.2.9 P 73 L 18 # 262

Wienckowski, Natalie

IVN Solutions LLC

Comment Type E Comment Status A Editorial

There is a run-on sentence that needs a comma to make it readable.

SuggestedRemedy

Add comma between "cleared" and "or" in the following sentence.

The PCS Transmit may return to normal operation automatically after unjab_timer elapsed and the error condition has been cleared or it may keep silent until reset.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change: "The PCS Transmit may return to normal operation automatically after unjab_timer elapsed and the error condition has been cleared or it may keep silent until reset."

to: "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."

CI 188 SC 188.4.3.1 P 73 L 39 # 253

Opsasnick, Eugene

Broadcom Inc.

Comment Type E Comment Status A PCS

The use of "either or" indicates a choice between two options or possibilities. In the 4th paragraph of 188.4.3.1, it is used awkwardly to present a choice between three options.

SuggestedRemedy

Suggest changing this sentence from:

"The DATA state, in which 5B symbols are decoded into MII data, is left when ESD or ESDBRS followed by either ESDOK, ESDERR, or ESDJAB symbol is encountered or when the PMA detects SILENCE on the media (e.g., the transmitter prematurely stops data transmission)."

to:

"The DATA state, in which 5B symbols are decoded to MII data, is left when an ESD or ESDBRS symbol is followed by an ESDOK, ESDERR, or ESDJAB symbol or when the PMA detects SILENCE on the media (e.g., the transmitter prematurely stops data transmission)."

Response Response Status C

ACCEPT.

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CI 188 SC 188.4.3.3 P74 L28 # 254

Opsasnick, Eugene

Broadcom Inc.

Comment Type E Comment Status A PCS

BEACON should be defined in 188.4.2.3 since it is also used by the transmit function (as defined in the TXCMD_ENCODE function on page 69). So the definition of BEACON should be moved to 188.4.2.3. But BEACON is not the only constant used in the RX state diagrams; other constants used include SYNC, SSD, and ESD, among others.

SuggestedRemedy

Move the definition of BEACON constant from 188.4.3.3 to 188.4.2.3. In addition, add text to 188.4.3.3 that all constants defined in 188.4.2.3 have the same meaning when used in the RX state diagrams. Something like:

"The constants BEACON, ESD, ESDERR, ESDJAB, ESDOK, ESDBRS, SILENCE, SSD, SYNC, and COMMIT have the same value as defined in 188.4.2.3."

Response Response Status C

ACCEPT IN PRINCIPLE.

Delete "See also 188.4.2.3"

Add to 188.4.3.3 the ESD, ESDOK/ESDBRS, SILENCE, SSD, SYNC/COMMIT each with description "See 188.4.2.3".

(Editor's note: other constants are unused in the state diagram.)

CI 188 SC 188.4.3.4 P74 L39 # 263

Wienckowski, Natalie

IVN Solutions LLC

Comment Type E Comment Status A Editorial

"value" is in the sentence twice, with just the variable between them.

SuggestedRemedy

Delete the second "value".

Response Response Status C

ACCEPT.

CI 188 SC 188.4.3.7 P76 L4 # 255

Opsasnick, Eugene

Broadcom Inc.

Comment Type E Comment Status A EZ

The condition to enter the WAIT_SYNC state in Figure 188-7 has an extra space between "transmitting" and the end parenthesis.

SuggestedRemedy

Replace "(transmitting)" with "(transmitting)"

Response Response Status C

ACCEPT.

CI 188 SC 188.4.3.7 P76 L9 # 161

Baggett, Tim

Microchip

Comment Type E Comment Status A EZ

Judging from P74 L30 (188.4.3.2) we want to change the constant from fc_supported (in CL147) to FC_SUPPORTED. If so, this change needs to be made throughout the draft.

SuggestedRemedy

Change fc_supported to FC_SUPPORTED in Figure 188-7 on page 76 in the following places:

L9 from SYNCING to WAIT_SYNC
L24 from SYNCING to BAD_SSD
L35 from COMMIT to WAIT_SYNC
L35 from WAIT_SSD to WAIT_SYNC
L38 from WAIT_SSD to BAD_SSD
L41 from COMMIT to BAD_SSD

Response Response Status C

ACCEPT.

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CI 188 SC 188.4.3.7 P76 L9 # 133

Huber, Thomas

Nokia

Comment Type E Comment Status A EZ

Inconsistent nomenclature between figure 188-7, where "fc_supported" is used, and 188.4.3.3, where the constant FC_SUPPORTED is defined.

SuggestedRemedy

Modify figure 188-7 to align with the name of the constant as specified in 188.4.3.3.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #161.

Change fc_supported to FC_SUPPORTED in Figure 188-7 on page 76 in the following places:

L9 from SYNCING to WAIT_SYNC
L24 from SYNCING to BAD_SSD
L35 from COMMIT to WAIT_SYNC
L35 from WAIT_SSD to WAIT_SYNC
L38 from WAIT_SSD to BAD_SSD
L41 from COMMIT to BAD_SSD

CI 188 SC 188.4.3.7 P76 L10 # 252

Opsasnick, Eugene

Broadcom Inc.

Comment Type E Comment Status A EZ

In Figure 188-7 "fc_supported" is a constant as defined in 184.3.3 and should be capitalized.

SuggestedRemedy

Replace "fc_supported" with "FC_SUPPORTED" in several places in Figure 188-7.
Alternatively, define fc_supported as a variable, and move its definition from 188.4.3.3 to 188.4.3.2.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #161

Change fc_supported to FC_SUPPORTED in Figure 188-7 on page 76 in the following places:

L9 from SYNCING to WAIT_SYNC
L24 from SYNCING to BAD_SSD
L35 from COMMIT to WAIT_SYNC
L35 from WAIT_SSD to WAIT_SYNC
L38 from WAIT_SSD to BAD_SSD
L41 from COMMIT to BAD_SSD

CI 188 SC 188.4.3.7 P76 L11 # 256

Opsasnick, Eugene

Broadcom Inc.

Comment Type T Comment Status A PCS

The variable rx_cmd is assigned the constant value NONE in Figure 188-7 (and also COMMIT and BEACON in Figures 188-7 and 188-8. But the constants NONE, COMMIT and BEACON are not defined in the constants subclause 188.4.3.3. And the definition of rx_cmd does not help.

SuggestedRemedy

For the definition of rx_cmd in 188.4.3.2 on page 74 line 7, replace:

"PLCA signalling decoded by the PCS."

with:

"PLCA signalling decoded by the PCS, see 148.4.4.2."

Response Response Status C

ACCEPT IN PRINCIPLE.

These are values a variable can take, not constants in the state diagram.

L7, P74

Replace:

"PLCA signalling decoded by the PCS."

with:

"PLCA signalling decoded by the PCS as specified for the variable rx_cmd in 148.4.4.2."

CI 188 SC 188.4.3.7 P76 L26 # 132

Huber, Thomas

Nokia

Comment Type E Comment Status A EZ

There is no off-page reference C in either figure 188-7 or 188-8, but there are references A, B, and D.

SuggestedRemedy

Change reference D in both figures to C.

Response Response Status C

ACCEPT.

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CI 188 SC 188.4.3.7 P76 L 51 # 25

Jones, Peter

Cisco Systems

Comment Type TR Comment Status R New Feature

"188.4.3.9 Jabber diagnostics" discusses how to detect "remote jabber" and how it is exposed via MDIO register 3.2293. but the "PCS Receive state diagram" does not show how/where this is done.

SuggestedRemedy

Define a "remote jabber" counter in "188.4.3.2 Variables" and increment it in the "PCS Receive state diagram".

Response Response Status U

REJECT.

Comment provides insufficient information to implement remedy.

No consensus for change.

CI 188 SC 188.4.3.8 P78 L 5 # 68

Ran, Adeo

Cisco

Comment Type TR Comment Status A PCS

The self-synchronizing descrambler cannot be a linear feedback shift register, because it needs to implement the inverse operation of the scrambler in 188.4.2.8. Since the scrambler is modeled by a linear feedback shift register, the descrambler has to be a linear feedforward shift register in order to be its inverse.

Figure 188-9 actually shows a linear feedforward (rather than feedback) shift register, except that an arrow to clarify the direction is missing.

SuggestedRemedy

Change "feedback" to "feedforward".

In Figure 188-9, format the line above the "+" on the left side as an arrow (downward), to clarify the flow direction.

Response Response Status W

ACCEPT IN PRINCIPLE.

Change P78 L 5 "linear-feedback" to "linear-feedforward"

Add arrowhead on down branch into first "+" in figure 188-9

CI 188 SC 188.4.5 P78 L # 152

Baggett, Tim

Microchip

Comment Type T Comment Status A PCS

Relax the need to detect carrier sense during receive-mode collisions by applying change referenced on slide 16 of presentation 2023-05-30 "Beruto Carrier Sensing in Harsh Noise Environments" at https://www.ieee802.org/3/da/public/0523/beruto_3da_20230515_carrier_sense_1p1.pdf

Carrier sense indication is defined in 188.3.3 as "a signal compatible with Differential Manchester Encoding (DME) encoding rules" being detected(P64 L52). Due to the corruption of signals during a collision, this may not always be possible to detect. If the need to detect carrier during a receive-mode collision is mandated then it will prevent signal processing techniques that can provide the immunity in harsh noise environments that is also needed. As shown in the above referenced presentation, this change has only minimal effect on CSMA/CD operation.

SuggestedRemedy

Change:

"The PHY shall assert CRS in the presence of a signal resulting from a collision between two or more other stations."

To:

"The PHY should assert CRS in the presence of a signal resulting from a collision between two or more other stations."

Apply same change to Clause 147.3.5

Response Response Status C

ACCEPT IN PRINCIPLE.

Change:

"The PHY shall assert CRS in the presence of a signal resulting from a collision between two or more other stations."

To:

"The PHY should assert CRS in the presence of a signal resulting from a collision between two or more other stations."

(Editor's note: Recommended that commenter bring the change to 147.3.5 to maintenance.)

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Cl 188 SC 188.5 P 79 L 38 # 162

Baggett, Tim Microchip

Comment Type E Comment Status A Primitives

"The PMA couples messages from the PMA service interface specified in 188.4.1 [**PCS Reset function**] onto the 10BASE-T1M physical medium."

The sentence here refers to 188.4.1 "PCS Reset function" which makes no sense. The corresponding Clause 147.4 also refers to its "PCS Reset function" in 147.3.1, but neither make sense. What is the correct reference?

SuggestedRemedy

Change the reference in L38 from "PCS Reset function":
188.4.1
to "service primitives and interfaces":
188.3

Response Response Status C

ACCEPT.

Cl 188 SC 188.5.2 P 80 L 43 # 163

Baggett, Tim Microchip

Comment Type T Comment Status A PMA

point-to-point is not supported, so we removed driving BI_DA+ and BI_DA- to 0V differential with a 100 Ohm impedance as was done in Clause 147. However, Figure 188-11 still shows this as being an option.

SuggestedRemedy

In the middle of the timing diagram between the first and second transmissions, identified as T1, change:
high-Z or diff. 0V
to:
high-Z

Response Response Status C

ACCEPT.

Cl 188 SC 188.5.2 P 81 L 7 # 69

Ran, Adeo Cisco

Comment Type T Comment Status A PMA Electrical

The minimum and maximum of a parameter are not a value in ppm - the ppm value is relative to the nominal value.

The columns are inconsistent between rows..

SuggestedRemedy

Change "-100 ppm" to "80 - 100 ppm" and "+100 ppm" to "80 + 100 ppm".

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Commenter may wish to file maintenance on clause 147 as well, where the text is identical.)

Implement Suggested Remedy as proposed:

Change "-100 ppm" to "80 - 100 ppm" and "+100 ppm" to "80 + 100 ppm".

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CI 188 SC 188.5.3 P 81 L 22 # 70

Ran, Adeo

Cisco

Comment Type TR Comment Status A PMA

"In order to meet the specifications of 188.6.5.1, the PMA Receive function must achieve proper synchronization on both the DME stream and the 5B boundary within 800 ns."

1. According to the style guide, the word "must" is deprecated and should not be used when stating mandatory requirements; must is used only to describe unavoidable situations. There is no unavoidable situation here.

2. the PMA receive function can synchronize on the DME stream, but from the information in the PMA specification alone it is unclear how it can find the 5B boundary; the output of the DME decoder is just a bit stream. Finding the 5B boundary requires some knowledge of the PCS transmit function behavior (e.g. Figure 188-4) which is not mentioned here

3. within 800 ns of what? I assume it is the appearance of a valid DME-encoded signal at the input following a SILENCE period?

SuggestedRemedy

Rewrite this sentence:

- As a normative requirement, using "shall" instead of "must", and clarifying where the 800 ns period starts.
- Add some reference to the expected initial 5B symbols and a reference to Figure 188-4.

Response Response Status W

ACCEPT IN PRINCIPLE.

Change: "In order to meet the specifications of 188.6.5.1, the PMA Receive function must achieve proper synchronization on both the DME stream and the 5B boundary within 800 ns."

to:

"In order to meet the specifications of 188.6.5.1, 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. "

CI 188 SC 188.5.3 P 81 L 28 # 71

Ran, Adeo

Cisco

Comment Type TR Comment Status A PMA

"When the PMA Receive function does not detect activity on the line, it shall convey the symbol 'I' "

It is not specified what the PMA receive function should do when there is "activity on the line" but it is not valid input; for example, if the signal is not proper DME.

It is also possible that after DME decoding the output contains 5B symbols other than the ones listed in Table 188-1. It is unclear if the detection of this condition is done by the PMA or by the PCS.

SuggestedRemedy

Change the quoted sentence to include cases where the input is not valid DME.

Consider whether invalid 5B codes should also be mentioned here or elsewhere.

Response Response Status W

ACCEPT IN PRINCIPLE.

Change: "When the PMA Receive function does not detect activity on the line, it shall convey the symbol 'I' "

to: "When the PMA Receive function does not detect a DME symbol on the line, it shall convey the symbol 'I'"

Change Value/comment of PICS PMA3 (at 188.12.4.5.1, P98), to "See 188.5.3."

Editor's note: Energy is either decoded as DME or not - achieving synchronization is implementation dependent. 188.4.3.4 DECODE function in the PCS Receive State diagram defines what happens if invalid 5B codes are received.)

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CI 188 SC 188.6.1 P81 L 38 # 72

Ran, Adee

Cisco

Comment Type TR Comment Status A Editorial

"Direct Power Injection (DPI) and 150 Ω emission tests for noise immunity and emission as per 188.6.1.1 and 188.6.1.2 may be used to establish a baseline for PHY EMC performance"

"may" suggests this is optional (per the style manual, "may" equals "is permitted to"). It is not even a recommendation ("should"). Is this the intent?

As it stands, it means that the standards does not have normative EMC specifications or recommendations - there is a set of tests in 188.6.1.1 and 188.6.1.2 but it is optional, and other requirements that applications may have and are beyond the scope.

This style is appropriate for a white paper, not for a standard.

My assumption is that the standard sets some minimum requirements; applications can always have additional ones.

(after reading further I see that there is another subclause about EMC in 188.10.2.2. Should the text in 188.6.1 be merged into the latter?)

SuggestedRemedy

Change "may be used to establish a baseline" to "should be the baseline". Consider writing it more strongly with "shall" unless the intent is not to have normative requirements in this standard.

Alternatively, move the EMC test subclauses into 188.10.2.2.

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace "may be used" with "can be used".

(Editor's note: this text has been substantially debated in all SPE PHYs, and should not be given higher status as a requirement or even a should. Commenter is correct as to the special meaning of "may" and the change from "may" to "can" parallels clause 146. Commenter may wish to consider similar maintenance to clauses 96 and 147.)

CI 188 SC 188.6.1.1 P81 L 48 # 73

Ran, Adee

Cisco

Comment Type TR Comment Status R PMA Electrical

"In a real application, radio frequency (RF) common mode (CM) noise at the PHY is the result of electromagnetic interference coupling to the cabling system"

"In a real application" is redundant.
CM noise can result from multiple reasons; RF EM interference is one of them.

"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"

If the cabling system and the TCI convert CM to DM then it is not "additional noise", it's just a different representation of the noise.

Note that with signaling frequency of 125 MHz (and receiver BW much below 1 GHz) it seems that mode conversion would not be a significant issue unless there is a very large intra-pair mismatch (in the order of ~1 m); it may not be a practical issue worth mentioning.

SuggestedRemedy

Change the quoted sentences to
"Radio frequency (RF) electromagnetic interference coupled to the cabling system can result in both common mode (CM) and differential mode (DM) noise at the PHY input".

Consider dropping the DM part.

Response Response Status W

REJECT.

The DPI test method specified here does not reflect the real application as it is a direct pin injection of RF interference and the text makes the relevance to the real application clear (it is not redundant). Mode conversion on the cabling is important at these frequencies because the levels are much greater than commonly encountered in data center ethernet LANs.

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CI 188 SC 188.6.1.1 P 81 L 51 # 74

Ran, Adeo Cisco

Comment Type TR Comment Status R Test Modes

"may be tested" means it is optional.

Similarly in 188.6.1.2.

See reasoning in another comment.

SuggestedRemedy

Rephrase the sentences that include "may" to be recommendations ("should") or normative requirements ("shall").

Response Response Status W

REJECT.

These provide tests which "are permitted" which is the proper use of may. The test is not required to be performed in this way. Additionally, this language is related to the method of test, without a specific requirement. (such requirement may be a user requirement beyond our standard)

CI 188 SC 188.6.2 P 82 L 22 # 75

Ran, Adeo Cisco

Comment Type T Comment Status A Test Modes

The positive and negative voltage levels are not specified; they are not even required to be driven by the same circuit as the DME generator (rather than for example a special "droop-compensated" driver).

It may be preferable to define the test pattern using logic levels corresponding to the DME levels.

SuggestedRemedy

State that the signal created shall also conform with the peak-to-peak voltage specified in 188.6.4.1.

Consider additional requirements to clarify that output is generated by the same circuit as the DME.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add "Transmit levels are as specified in 188.6.4.1." after "This sequence is repeated continually." (P82 L23).

CI 188 SC 188.6.2 P 82 L 25 # 114

Wu, Peter Marvell

Comment Type TR Comment Status A Test Modes

Test Mode 3 does not include 4B/5B encoding , but it is not clerally stated in the text. It may bring in confusion for the implmenattors.

SuggestedRemedy

Suugest to add in the clarification. Such as " When test mode 3 is enabled, the PHY shall transmit continually a pseudo-random sequence of positive and negative voltage levels generated by the scrambler defined in 188.4.2.8 and encoded using DME as in 188.5.2., At the test mode, the scrambler generates the random data clocked at 12.5 MHz, and 5B-rate bit stream is sent to the DME encode, the data is not 4B5B encoded".

Response Response Status C

ACCEPT IN PRINCIPLE.

Change P82 L22-23 to read:

"When test mode 3 is enabled, the PHY shall continually transmit a pseudo-random sequence of positive and negative voltage levels generated by the scrambler defined in 188.4.2.8 and encoded using DME as in 188.5.2. In this test mode, the scrambler generates the random data clocked at 12.5 MHz, and the 5B-rate bit stream is sent to the DME encoder. Note that the data is not actually 4B5B encoded".

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CI 188 SC 188.6.2 P 82 L 26 # 156

Baggett, Tim Microchip

Comment Type ER Comment Status A Test Modes

The description of test mode 3 is not as clear as it could be, and, being the same as in the existing Clause 147, has caused some questions in the past.

SuggestedRemedy

inserted text

Change:

"When test mode 3 is enabled, the PHY shall transmit continually a pseudo-random sequence of positive and negative voltage levels generated by the scrambler defined in 188.4.2.8 and encoded using DME as in 188.5.2."

To:

"When test mode 3 is enabled, the PHY shall transmit continually a pseudo-random sequence of positive and negative voltage levels generated by the scrambler defined in 188.4.2.8 **at 12.5MBd** and encoded using DME as in 188.5.2. **4B/5B encoding is not applied.**"

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #114.

Change P82 L22-23 to read:

"When test mode 3 is enabled, the PHY shall continually transmit a pseudo-random sequence of positive and negative voltage levels generated by the scrambler defined in 188.4.2.8 and encoded using DME as in 188.5.2. In this test mode, the scrambler generates the random data clocked at 12.5 MHz, and the 5B-rate bit stream is sent to the DME encoder. Note that the data is not actually 4B5B encoded".

CI 188 SC 188.6.2 P 82 L 29 # 76

Ran, Adeo Cisco

Comment Type TR Comment Status A Test Modes

"the transmitter shall output the 'I' symbol" - this symbol is defined by the PCS as 5B "11111".

All other test modes define the signal at the PMA output (which is not necessarily generated by the normal PMA transmit function). If the PMA is to generate this pattern as a test mode, it would be a high-frequency toggling after DME encoding - this is probably not the intent.

To test the requirements of 188.5.2, the PCS should generate the 'I' symbol, and the PMA should behave normally.

Note that this requirement is also written in 188.6.4.5 (in a way that matches the suggested remedy); it may be simpler to just point to that and avoid duplicated requirements.

SuggestedRemedy

Change "the transmitter shall output" to "the PCS transmit function shall output" and clarify that the PMA behaves as in 188.5.2.

Response Response Status W

ACCEPT IN PRINCIPLE.

Change: "When test mode 4 is enabled, the transmitter shall output the 'I' symbol" (P82 L29)

to:

"When test mode 4 is enabled, the PCS transmit function shall output the 'I' symbol, and the PMA operates as specified in 188.5.2. "

CI 188 SC 188.6.3 P 83 L 3 # 77

Ran, Adeo Cisco

Comment Type TR Comment Status R PMA Electrical

"fixtures... can be used"

"can" indicates capability. Many fixtures can be used, but some may not be adequate.

Here it looks like a requirement for specific fixtures (with allowance of "functional equivalent").

SuggestedRemedy

Change "can be" to "shall be" or "is".

Response Response Status W

REJECT.

Specific test fixtures are not required.

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Cl 188 SC 188.6.4 P 83 L 44 # 153

Baggett, Tim Microchip

Comment Type E Comment Status A PMA Electrical

The first sentence specifies a 50 Ohm resistive differential load connected to the "transmitter output" when a load is not specified. This seems to indicate a test without the TCI, but only access to TC1 or TC2 is specified and not at the base of the tee connected to the transmitter. I believe the intention here is to state that the transmitter must 'see' a 50 Ohm load unless otherwise specified. This may be made more clear by rearranging the sentences of the paragraph.

SuggestedRemedy

Rearrange sentences of the paragraph as follows:

Where a load is not specified, the transmitter shall meet the requirements of this subclause with a 50 Ohm resistive differential load connected to the transmitter output. When both TC1 and TC2 are terminated, the 50 Ohm resistive differential load should be implemented as a 100 termination on each of TC1 and TC2. Transmitter electrical tests are specified with a load tolerance of +/-0.1%. Transmitter electrical specifications shall be measured at both TC1 and TC2.

Response Response Status C

ACCEPT IN PRINCIPLE.

Rearrange sentences of the paragraph as follows:

Where a load is not specified, the transmitter shall meet the requirements of this subclause with a 50 Ohm resistive differential load connected to the transmitter output. When both TC1 and TC2 are terminated, the 50 Ohm resistive differential load should be implemented as a 100 Ohm termination on each of TC1 and TC2. Transmitter electrical tests are specified with a load tolerance of +/-0.1%. Transmitter electrical specifications shall be measured at both TC1 and TC2.

Cl 188 SC 188.6.4.2 P 84 L 3 # 116

Lusted, Kent Independent

Comment Type T Comment Status A PMA Electrical

The transmitter output droop test text as written suggests to me that total amount of droop from the positive measurement and the negative measurement together must be less than 30%. For example, if the positive droop was measured as 18% and the negative droop was measured as 20%, the total droop of 38% would fail the requirement.

However, i think that the intent is that the positive droop by itself should be less than 30% and the negative droop by itself should be less than 30%. Clarification would be helpful for the reader.

SuggestedRemedy

Change:

"When tested using the test fixture shown in Figure 188–12 with the transmitter in test mode 2, the magnitude of both the positive and negative droop measured with respect to the initial peak value after the zero crossing and the value 800 ns after the initial peak, depicted as Vd in Figure 188–14, shall be less than 30%."

To:

"When tested using the test fixture shown in Figure 188–12 with the transmitter in test mode 2, the magnitude of the positive droop measured with respect to the initial peak value after the zero crossing and the value 800 ns after the initial peak, depicted as Vd in Figure 188–14, shall be less than 30%. The magnitude of the negative droop, when measured the same way, shall be less than 30%."

Response Response Status C

ACCEPT.

Cl 188 SC 188.6.4.2 P 84 L 10 # 78

Ran, Adeo Cisco

Comment Type TR Comment Status R PMA Electrical

The waveform seems to asymptotically approach some non-zero levels (it is almost flat before the transition). Shouldn't droop from AC coupling cause it to decay to 0 after long enough time?

SuggestedRemedy

Change the figure such that the signal has nonzero slope right before the transitions.

Response Response Status W

REJECT.

Decay does not asymptotically go to a flat level. The purpose of Figure 188-14 is not to provide a precise picture of a waveform, but rather to show the holdoff from the peak value that the droop is measured at.

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Cl 188 SC 188.6.4.3 P 84 L 31 # 79

Ran, Adee Cisco

Comment Type T Comment Status R PMA Electrical

5 ns jitter out of 80 ns nominal period, symbol to symbol, means up to 16 ns peak-to-peak or 0.2 UI in typical jitter units. This is a very loose requirement that suggests that jitter is not considered important in this type of physical layer. It does not prevent transmitters from having deterministic jitter which would occur in high probabilities.

Allowing high jitter in transmitters may result in reduced noise immunity if the channel bandwidth is limited. Channel specifications in this draft are not clear (e.g. with multiple TCIs), but bad channels can occur unexpectedly e.g. by poor connections.

Limiting jitter would provide better protection from unexpected bad channels.

The suggested remedy maintains the peak-to-peak limit but only at the probability of the maximum BER. The suggested RMS value corresponds to a fully Gaussian distribution. The value could be increased somewhat if it is considered challenging - although it should be quite easy to design transmitters with lower jitter than that.

SuggestedRemedy

Change from
"the maximum jitter at the transmitter side shall be less than 5 ns symbol-to-symbol"
to
"the peak symbol-to-symbol jitter at the transmitter output at a probability of $1-10^{-10}$ shall be less than 5 ns. The RMS value of the symbol-to-symbol jitter shall be less than 786 ps".

Response Response Status C

REJECT.

Specifications are identical to clause 147 which is proven in the field. Technical presentations justifying a revised jitter specification would be needed if the group is to consider a change.

Cl 188 SC 188.6.4.3 P 84 L 32 # 80

Ran, Adee Cisco

Comment Type TR Comment Status R PMA Electrical

The clock for measuring the jitter should be specified in some way; measuring jitter with respect to the tx_clk itself (without filtering) would not include the jitter of tx_clk, which may be a considerable component. If tx_clk is not available then a clock recovery unit has to be used, and the measured jitter can vary based on its bandwidth.

The suggested clock recovery bandwidth is 1/100 of the signaling rate, assuming that such bandwidth is feasible for receivers. It may be reduced if the CRG finds it too high.

SuggestedRemedy

Specify that the jitter is measured corresponding to a clock generated from either the measured signal or tx_clk, by a clock recovery unit that acts as a 1st-order high-pass jitter filter with a corner frequency of 1.25 MHz.

Response Response Status W

REJECT.

Commenter provides insufficient information for a remedy.

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CI 188 SC 188.6.5 P 86 L 50 # 84

Ran, Adeo Cisco

Comment Type TR Comment Status A PMA Electrical

The text does not specify anything about the behavior during PMA local loopback.

The "shall" statement applies always, not just in local loopback mode.

Is it the intent that the PMA and PCS behave normally, but the collision detection specified in 188.4.5 is disabled? If so, it should be written explicitly.

SuggestedRemedy

Clarify what the effect of PMA local loopback is.

Response Response Status W

ACCEPT IN PRINCIPLE.

(Editor's note: The statement about collisions isn't useful here. Collisions may be detected in multiple ways, so it shouldn't be a requirement.)

(P86 L50) Change:

"The PMA and PCS Receive functions shall pass the data decoded from the signal to the MII RX. This data is normally received during a transmission and may be used to detect collisions."

to:

"During PMA loopback, the PMA and PCS Receive functions shall pass the data decoded from the looped-back signal to the MII RX."

CI 188 SC 188.6.5.2 P 86 L 16 # 81

Ran, Adeo Cisco

Comment Type TR Comment Status A PMA Electrical

"with a Gaussian distribution bandwidth of 40 MHz and magnitude of -101 dBm/Hz"

Gaussian distribution is independent of the bandwidth.

The numbers cannot be exact; I assume they are they represent the minimum stress (if not, the wording can be changed).

SuggestedRemedy

Change to

"with a Gaussian distribution and a spectral density of at least -101 dBm/Hz at a bandwidth of at least 40 MHz"

Response Response Status W

ACCEPT.

CI 188 SC 188.6.5.2 P 86 L 20 # 82

Ran, Adeo Cisco

Comment Type ER Comment Status R PMA Electrical

"may be considered" - but is not an option (allowed behavior).

SuggestedRemedy

Change to "is considered".

Response Response Status W

REJECT.

This same language has been debated in multiple clauses. The "may" is permission to test this way, but not a requirement that the test be performed exactly that way. Saying "is" can be misinterpreted as a requirement on the user.

CI 188 SC 188.6.5.2 P 86 L 36 # 83

Ran, Adeo Cisco

Comment Type TR Comment Status A PMA Electrical

"Resistor matching to 1 part in 1000"

I assume this requirement is placed to make the source mostly common-mode.

This is good, but it should be accompanied by some requirement about the placement of the coupling into the mixing segment. If the two connections are too far apart, the noise can be partly converted to differential.

There is an additional label "< 0.1 m" but it is not attached to anything. The intent is perhaps that both coupling points are less than 0.1 m from the TCI?

SuggestedRemedy

Clarify in the figure, and preferably also in the subclause text, the requirements from the two connection points of the noise source.

Response Response Status W

ACCEPT IN PRINCIPLE.

Delete "< 0.1m" next to the noise source.

Change "NOTE - " to NOTE 1 -"

Add "NOTE 2 - The connection from the noise source to the TC under test should be less than 0.1 meter in length."

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Cl 188 SC 188.6.5.2 P 86 L 38 # 304

Schreiner, Stephan

Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type E Comment Status R PMA Electrical

The text reads: "The combination of Rs and the two 500 Ohm resistors matches the source impedance of the noise source". This requires some effort to guess the Rs value.

SuggestedRemedy

It would be beneficial to the user to either add an example for Rs for a given source impedance of the generator or add the calculation formula: $R_s = (1050 \text{ Ohm} * R_{Gen}) / (1050 \text{ Ohm} - R_{Gen})$

Response Response Status C

REJECT.

Adding basic electrical calculations to the draft does not enhance interoperability. Additionally, examples of a noise source impedance are often misread as test requirements.

Cl 188 SC 188.6.6 P 86 L 50 # 154

Baggett, Tim

Microchip

Comment Type E Comment Status A PMA Electrical

It is unclear from the text in the first sentence which signal is being referred to. Recommend reverting the paragraph back to the form it had in Clause 147.5.6 for clarity.

SuggestedRemedy

Change the paragraph in lines 50-51 as follows:

The PMA and PCS Receive functions shall pass to the MII RX the data decoded from the signal which is normally received during a transmission for the purpose of detecting collisions.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #84.

(Editor's note: The statement about collisions isn't useful here. Collisions may be detected in multiple ways, so it shouldn't be a requirement.)

(P86 L50) Change:

"The PMA and PCS Receive functions shall pass the data decoded from the signal to the MII RX. This data is normally received during a transmission and may be used to detect collisions."

to:

"During PMA loopback, the PMA and PCS Receive functions shall pass the data decoded from the looped-back signal to the MII RX."

Cl 188 SC 188.7 P 87 L 7 # 85

Ran, Adeel

Cisco

Comment Type TR Comment Status R Management

Is it just the MDIO electrical interface that is optional? In many places in this draft the text suggests that the MDIO registers are optional and alternative management methods can be used.

The PICS MDIO item also suggests that the registers are optional.

SuggestedRemedy

Rephrase to clarify that the registers are optional, or if that is not the intent, apply changes across the draft to clarify that a MDIO registers are required.

Response Response Status W

REJECT.

The registers themselves are not optional. See Clause 45: "The MDIO electrical interface is optional. Where no physical embodiment of the MDIO exists, provision of an equivalent mechanism to access the registers is recommended."

Nowhere does it say that the registers are optional, and they are an essential part of the management functionality not only of this PHY but most 802.3 PHYs. Most 802.3 clauses have similar text.

Cl 188 SC 188.8 P 87 L 19 # 26

Jones, Peter

Cisco Systems

Comment Type E Comment Status A Editorial

The second paragraph of this clause starts with:

"The mixing segment shall be a linear topology, with DTE attached to a trunk at a TCI"

"with DTE attached" doesn't make sense.

SuggestedRemedy

replace

"with DTE attached to a trunk at a TCI"

with

"with DTEs attached to a trunk at using TCIs" or similar.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change:

"with DTE attached to a trunk at a TCI"

to:

"with DTEs attached to a trunk at TCIs"

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CI 188 SC 188.8 P 87 L 25 # 305

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type T Comment Status A Mixing Segment

The text reads: "met with TCIs in place with or without attached DTEs". All specifications and limits are given with a DTE or a simulated DTE equivalent attached. Thus, with or without is problematic

SuggestedRemedy

Remove: "with or without attached DTEs"

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: (A DTE load may be used instead of a DTE, so commenter's solution is modified to simply reference the specification, also note that the mode conversion specification does not indicate whether DTE loads are attached, and I suspect they would be problematic...)

Change:
"with or without attached DTEs."

to:"with DTEs or representative DTE loads attached."

CI 188 SC 188.8 P 87 L 26 # 134

Huber, Thomas Nokia

Comment Type E Comment Status A Editorial

"but rather a (set of) interface planes." is awkward when the parenthetical text is omitted.

SuggestedRemedy

Remove the parentheses, or change to "one or more interface planes"

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: This text is a relic of the draft where we hadn't reached consensus on the structure of the TCI and its connection points. In the current draft, each TCI has a pair of planes - TC1 and TC2...)

Change "(set of)" to "pair of"

CI 188 SC 188.8 P 87 L 26 # 264

Wienckowski, Natalie IVN Solutions LLC

Comment Type E Comment Status A Editorial

When determining article and whether a verb is singular or plural, you ignore the text in parenthesis.

SuggestedRemedy

Change: but rather a (set of) interface planes.

To: but rather an (set of) interface plane.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #134.

Change "(set of)" to "pair of"

CI 188 SC 188.8 P 87 L 30 # 306

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type T Comment Status A Mixing Segment

The text reads: "The mixing segment specifications in 188.8 are referenced to these designated points and are to be met without the DTE or other loads attached.". However, all tests are described with DTE or simulated DTEs attached.

SuggestedRemedy

change "without" to "with"

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note:No need to keep repeating this text and it is specified where the specifications are written. This text is a relic of earlier drafts.)

Delete "and are to be met without the DTE or other loads attached"

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CI 188 SC 188.8 P 88 L 5 # 86

Ran, Adee

Cisco

Comment Type TR Comment Status A Editorial

The mixing segment and DTE stub in the diagram include pipe-like elements that imply some kind of shield. Is it the intent that the balanced pairs be electrically shielded? or is it just a non-conducting protection?

In addition, the balanced pairs do not appear to be twisted in the figure; is there an expectation that non-twisted pairs can be used? (note that the words "twisted-pair" only appear in 189.6.1.1.1 and 189.6.1.1.3)

SuggestedRemedy

Clarify in this figure and/or elsewhere if the medium is expected to be shielded and/or twisted. If multiple options are considered, please state that explicitly.

Specifically, clarify what the "pipes" in the figure mean.

Response Response Status W

ACCEPT IN PRINCIPLE.

Remove the "pipes", leaving the pairs connecting the TCI to the PMA on the left branch. Only a pair of conductors is required - grouping under a sheath, which is common in 802.3 systems is not required.

Change both instances of "a balanced twisted-pair MPI" and change to "an MPI" in 189.6.1.1.1 and 189.6.1.1.3 (first sentence of each). This correctly applies the isolation requirements to all MPIs regardless of twists, balance, or construction.

Use of twisted media is not required, see 188.1 2nd paragraph:

"The performance requirements for the mixing segment are specified in 188.8. This allows implementers to specify their own media to use with the 10BASE-T1M PHY as long as the normative requirements included in this clause are met."

CI 188 SC 188.8.1 P 88 L 33 # 87

Ran, Adee

Cisco

Comment Type ER Comment Status A Mixing Segment

Equation 188-3 is not easy to mentally visualize. It would help readers if a plot of the insertion loss limit is provided.

Also applies to other equations, RL in 188-4, mode conversion in 188-5, TCI IL in 188-6, and TCI RL in 188-7; figures would help. Equations like these are typically accompanied with figures in other clauses, and this amendment should follow precedence.

Also, the equation is almost too long for the page width; consider changing "Insertion loss" to "IL" (matching Equation 188-4), removing some parentheses, etc. to make it fit better into the page. Similarly in other equations.

SuggestedRemedy

Edit equations and add figures per comment.

Response Response Status W

ACCEPT IN PRINCIPLE.

Change Insertion Loss to IL in equation

Remove extra parentheses around "53log(f)"

(Editor's note: Do not add plots. A reader wishing to visualize the equation generally has better plotting tools available than reading a printed plot on a PDF.)

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CI 188 SC 188.8.2 P 89 L 14 # 317

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type TR Comment Status A Mixing Segment

Channel Return Loss Limit and TCI Return Loss Limit crossing each other at 22.2 MHz and 36.9 MHz. Within this range, the Channel Return Loss Limit is higher than the TCI Return Loss Limit. This can lead to a case, where the TCI specification is met but the channel specification is not met caused by the TCI.

SuggestedRemedy

Change Return Loss Limit in the frequency range from 2.8 MHz $\leq f \leq 40$ MHz from: $-42.5 - 20 \log_{10}(f) - (0.024/f) + 47.5 \sqrt{f} - 6.39 \sqrt{f} + 0.0259 f^2$ to: $-45.8 - 20 \log_{10}(f) - (4.3/f) + 53 \sqrt{f} - 8 \sqrt{f} + 0.046 f^2$

Response Response Status U

ACCEPT IN PRINCIPLE.

Change Mixing Segment Return Loss to:
 $19.5 - \text{Max}(0, 25 \log_{10}(F/12.5))$ dB for $40 \text{ MHz} > F > 6.8 \text{ MHz}$
 $0.65 + \text{Max}(0, .65 + 30 \log_{10}(F/1.6))$ dB for $0.3 < F < 6.8 \text{ MHz}$

Editorial license to reformat equation per other comments and 802.3 style.

CI 188 SC 188.8.2 P 89 L 14 # 296

Paul, Michael Analog Devices

Comment Type E Comment Status R Mixing Segment

Are there unnessecary parenthesis in the equation?

SuggestedRemedy

remove parens around $-20 \log \dots$ to $\dots 0.0259 f^2$

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

CI 188 SC 188.8.3 P 89 L 22 # 311

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type T Comment Status A Mixing Segment

Mode conversion loss of mixing segment does not mention the DTE attachment. If the TCI is integrate into the DTE (cf. p. 90 line 32), the mixing segment would not be closed, if no DTE is attached. Thus, the measurement can not be performed in this case.

SuggestedRemedy

Add the DTE load attachment sentence.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add new sentence at line 31:

"In the case where the TCI is expected to be incorporated within the DTE, the mode conversion loss measurement may be made with a simulated DTE load attached."

CI 188 SC 188.9 P 89 L 39 # 265

Wienckowski, Natalie IVN Solutions LLC

Comment Type E Comment Status A TCI

There is a run-on sentence that needs a comma to make it readable.

SuggestedRemedy

Add comma between "segment" and "mandates" in the following sentence.

While technically the TCI aligns with the definition of an MDI in 1.4.395, the fact that the TCI has two connections to the medium and plays a role in mixing segment specifications by connecting the upstream and downstream sides of the linear mixing segment mandates it has a unique role beyond what is normally considered in an MDI.

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: A comma would only further complicate a confusing sentence. Splitting for clarity.)

Change:

"While technically the TCI aligns with the definition of an MDI in 1.4.395, the fact that the TCI has two connections to the medium and plays a role in mixing segment specifications by connecting the upstream and downstream sides of the linear mixing segment mandates it has a unique role beyond what is normally considered in an MDI."

to: "The TCI technically aligns with the definition of an MDI in 1.4.395. However, the two connections of the TCI join the upstream and downstream sides of the linear mixing segment and plays a role in mixing segment specifications. Giving it a unique name reflects that the TCI's role and structure differs from other MDIs in IEEE Std 802.3."

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CI 188	SC 188.9	P 90	L 24	# 307
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Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type **T** *Comment Status* **A** *Mixing Segment*

The text reads: "the requirements of 188.8 are met with TCIs in place with or without attached DTEs as specified for the particular specification". However, there is no specification without DTEs attached

SuggestedRemedy

Remove: "or without"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: No need to keep repeating this text and it is specified where the specifications are written. This text is a relic of earlier drafts. Additionally, here, in the TCI section, referring to the requirements for the Mixing segment section is out of place.)

Change:

"The TCI is part of the mixing segment, and the requirements of 188.8 are met with TCIs in place with or without attached DTEs as specified for the particular specification."

to:

"The TCI is part of the mixing segment."

CI 188	SC 188.9	P 90	L 30	# 88
--------	----------	------	------	------

Ran, Adeo Cisco

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

Item 1 says "a two-conductor connection to the DTE" - but from figure 188-18, a TCI needs at least 4 conductors (2 for TC1 and 2 for TC2)?

Item 3 suggests that the TCI is integrated with the PMA - in which case there will indeed be 4 conductors.

Is item 1 intended to represent a DTE which includes a termination, and thus has only one TC?

Note that Figure 188-17 shows only two TCIs, not three as suggested by the last sentence in this subclause.

SuggestedRemedy

Please clarify or correct.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

(Editor's note: The text represents possible implementations of the TCI. Each is a possible implementation. The other conductors the commenter mentions (two at TC1 and two at TC2) are interface planes at the mixing segment, not connection to the DTE. In Item 3, if the TCI is integrated with the DTE, it still connects to the DTE (PMA) via two conductors. There is no mention of a DTE which includes a termination - that would be unspecified in this standard. The reference to Figure 188-17 is from an earlier rendition of the figure, and the current figure really isn't intended to show the configurations. Additionally, such figures have been confused to be normative specification of how devices must be built, and remove clarity.)

Delete "Figure 188-17 shows one example of each configuration."

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CI 188 SC 188.9 P90 L 36 # 308

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type E Comment Status A TCI

Text reads: "Figure 188-17 shows two configurations examples." and Line 28 to 32 indicating three possible configurations. The figure shows configurations 1) and 2), configuration 3 is missing.

SuggestedRemedy

Insert configuration 3) in Figure 188-17 or change to "Figure 188-17 shows two example configurations"

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: The text that the commenter quoted (Figure 188-17 shows two configuration examples." isn't in the draft. Assuming that the commenter is referring to the text on P90 L36 which states, "Figure 188-17 shows one example of each configuration." Figure 188-17 doesn't really show this and figures are often confused with specification.)

Accommodated by comment #88.

Delete "Figure 188-17 shows one example of each configuration."

CI 188 SC 188.9.1.1 P91 L 1 # 309

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type E Comment Status A Editorial

Sub-clause number is 188.9.1.1, however there is no 188.9.1.2. The following section is 188.9.2

SuggestedRemedy

Change number to: 188.9.1

Response Response Status C

ACCEPT IN PRINCIPLE.

Change "188.9.2" on L18, P91 to "188.9.1.2"

Change "188.9.3" on L34, P91 to "188.9.1.3"

Change "188.9.4" on L1, P92 to "188.9.1.4"

CI 188 SC 188.9.2 P91 L 20 # 310

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type E Comment Status A Editorial

Text reads: " ... Equation (188-7) with the other trunk TC (i.e. ..." However, the "T" in "TC" abbreviates the word trunk.

SuggestedRemedy

Remove: "trunk"

Response Response Status C

ACCEPT.

CI 188 SC 188.9.2 P91 L 26 # 298

Paul, Michael Analog Devices

Comment Type T Comment Status A TCI

Power coupling network for each node is limited by TCI return loss, but not necessarily specified anywhere else - like in clause 189. Ideally we can optimize power coupling networks based on power (current) at each node. However these RL lines are too rigid for this optimization.

SuggestedRemedy

See upcoming presentation mpaul_da_01.... Can we have different TCI RL limits for different unit load levels?

Response Response Status C

ACCEPT IN PRINCIPLE.

Adopt proposal on slide 3 of paul_3da_01a_20250120.pdf

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Cl 188 SC 188.9.3 P91 L 35 # 89

Ran, Adeel Cisco

Comment Type TR Comment Status R TCI

The subclause is under TCI specifications, but the requirement is from the DTE. A standalone TCI can probably withstand much higher voltages.

Similarly for 188.8.4; The TCI should have no issue with having an interface shorted or grounded - it's the PMA that should tolerate it.

SuggestedRemedy

Move these specifications to 188.6 PMA electrical specifications. Possibly under 188.6.1 (which would require renaming it).

Response Response Status W

REJECT.

This specification usually is incorporated under the MDI section, and is appropriate in it's place as worded. It is in the TCI section because the voltage is applied at TC1 or TC2 of the TCI.

Cl 188 SC 188.9.4 P92 L 10 # 295

Paul, Michael Analog Devices

Comment Type T Comment Status R TCI

Assuming some systems may have the high rail as 'ground', is there a better way to describe this table?

SuggestedRemedy

Rename the fault voltages Va and Vb where $|V_a - V_b| \leq 60V$

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

Cl 188 SC 188.10.3 P93 L 31 # 90

Ran, Adeel Cisco

Comment Type TR Comment Status A Environmental

"may connect telephony voltages to a DTE", in standard language, makes it allowed by the standard. It should not be so.

These statements about telephony are legacy and may not be required nowadays. If they are mentioned, these connections should be discouraged, as the voltages listed in this subclause are higher than the normal requirements and can damage components.

Also applies to 189.7.5.

SuggestedRemedy

Change "may" to "might" here and in the next sentence.
Add statements that care should be taken to avoid such connections because they can damage equipment.

Apply similarly in 189.7.5.

Response Response Status W

ACCEPT IN PRINCIPLE.

Change "may" to "might" at P93 L31. (that may connect)

Change "may" to "can" at P93 L 33 (that may be encountered)

Add new sentence at the end of the paragraph (P93 L38) : "Care should be taken to avoid such connections as they can damage equipment."

in 189.7.5, P128, make same changes at Lines 17 and 18.

Add new sentence at the end of the paragraph (P128 L24) : "Care should be taken to avoid such connections as they can damage equipment."

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Cl 188 SC 188.10.3 P 93 L 34 # 2

Nikolich, Paul

Self

Comment Type E Comment Status A EZ

The abbreviation "DC" when used to mean "direct current" should be capitalized everywhere in the document. 4 instances are capitalized (see Table 189-5, page 114), 20 instances are not.

SuggestedRemedy

Please change multiple instances of "dc" to "DC" throughout the document

Response Response Status C

ACCEPT IN PRINCIPLE.

(commenter's resolution plus doing the same thing for "ac")

Please change multiple instances of "dc" to "DC" throughout the document

Additionally change multiple instances of "ac" to "AC" as applies to alternating current.

Cl 188 SC 188.10.3 P 93 L 40 # 268

Brychta, Michal

Analog Devices

Comment Type E Comment Status A Environmental

I have seen in other 802.3 clauses where this requirement was written, (e.g. 14.7.2.4), it was with wording stating "Although equipment is not required to survive such wiring hazards without damage, application of any of the above voltages shall not result in any safety hazard."

My understanding is that the wording "...shall not preclude conformance with 188.10.1 and 188.10.2" here is addressing more specifically the "hazard". The "damage" piece may be missing here.

SuggestedRemedy

Adding appropriate wording to acknowledge that the DTE may get damaged under such condition may add clarity here.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #90.

Change "may" to "might" at P93 L31. (that may connect)

Change "may" to "can" at P93 L 33 (that may be encountered)

Add new sentence at the end of the paragraph (P93 L38) : "Care should be taken to avoid such connections as they can damage equipment."

in 189.7.5, P128, make same changes at Lines 17 and 18.

Add new sentence at the end of the paragraph (P128 L24) : "Care should be taken to avoid such connections as they can damage equipment."

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CI 188 SC 188.11 P 93 L 45 # 91

Ran, Adeo Cisco

Comment Type T Comment Status R Delay

Delay constraints are typically given from the MII to the MDI, in conjunction with "predictable operation of the MAC Control PAUSE operation". See 24.6 for a full explanation and 146.10 for an example in a similar PHY.

The current content of 188.11 does not provide the necessary information for this purpose, at least not in the expected format, and it is unclear if all the details are required.

SuggestedRemedy

Replace the existing content with the necessary information as explained in 24.6 using 146.10 as an example.

The current content may be moved to a separate subclause (with a different name) as additional specifications.

Response Response Status C

REJECT.

188.11 mirrors the same section in 147.11 for multidrop mode. Half duplex and PLCA compatibility impose additional constraints beyond the simple MAC Control PAUSE operation constraints in full-duplex PHYs and therefore require a more extensive table.

CI 188 SC 188.12.3 P 96 L 13 # 92

Ran, Adeo Cisco

Comment Type E Comment Status A Editorial

The subclause reference for "MII" seems incorrect.

SuggestedRemedy

Change it to whatever this item refers to.

Response Response Status C

ACCEPT IN PRINCIPLE.

Delete Major option MII in 188.12.3 (P96 L13), as it is unused in the PICS.

CI 188 SC 188.12.4.5.2 P 99 L 9 # 135

Huber, Thomas Nokia

Comment Type T Comment Status A PMA

The comment for PMAE2 suggests that the ability to enable test modes is required whether or not MDIO is implemented, since it describes an MDIO implementation and then says 'similar functionality provided otherwise'. As such, the Status of MDIO:M seems incorrect, since the MDIO condition is defined in 188.12.3 based on clause 45.1

SuggestedRemedy

Change the Status to M (i.e., the ability to enable test modes is required, either via MDIO or via an equivalent mechanism), or remove the "similar functionality provided otherwise" part of the comment, so that the item is in fact conditional on an MDIO per clause 45 being implemented.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change status to M

CI 188 SC 188.12.4.5.2 P 99 L 44 # 312

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type E Comment Status A PMA

Feature: "AC coupling at TCI" should be "AC coupling to TCI" [cf. 188.6.4 page 83 line 42]

SuggestedRemedy

Change to: "AC coupling to TCI"

Response Response Status C

ACCEPT IN PRINCIPLE.

Change to: "AC coupling to the TCI"

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CI 188 SC 188.12.4.5.2 P 99 L 46 # 313

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type T Comment Status R PMA

PMAE10 might become obsolete because of introduction of TCI.

SuggestedRemedy

Delete PMAE10 and insert the termination loads as well as accuracy into Value/Comment of PMAE11

Response Response Status C

REJECT.

A configuration where the transmitter is separate from the TCI would be tested with a 50 ohm termination, whereas one with an integral TCI would be tested with 100 ohms at each TC1 and TC2.

CI 188 SC 188.12.4.5.2 P 100 L 29 # 136

Huber, Thomas Nokia

Comment Type T Comment Status A PMA

PMAE19 and PMAE20 have the same feature name. 19 is about the ability to enable/disable PMA local loopbacks via MDIO, and is tagged MDIO:O (indicating that the ability to enable/disable PMA loopbacks via MDIO is optional when MDIO is implemented), whereas 20 is about the behavior of the loopback itself and is tagged MDIO:M (indicating that PMA loopbacks are mandatory if an MDIO is implemented). Per 188.6.6, the entire PMA loopback is optional and is invoked via MDIO or equivalent interface. The PICS items are not consistent with the text in 186.6.6

SuggestedRemedy

Change PMAE19 to be about the implementation of the loopback itself; this should be identified as * PMAE19 so it can be used as a condition. The status for PMAE19 should be O (without any conditions - it is entirely optional to implement the loopback). Change PMAE20 to be about the MDIO support for PMA loopback. The status should be (PMAE19 * MDIO):M. In other words, if the optional PMA loopback is present, and the optional MDIO interface is present, it is mandatory to provide the MDIO bits to control the PMA loopback.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change PMAE19 feature to "PMA local loopback control"

Change PMAE20 status to O

Change PMAE20 Value/Comment to "When (optional) PMA local loopback is engaged, the PMA and PCS Receive..."

CI 188 SC 188.12.4.6 P 101 L 11 # 314

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type T Comment Status A Mixing Segment

Item MXS3, the "Return loss at each PMA port of TCI" is not defined. Additionally, this point is not accessible in all DTE / TCI configurations. (This test point was called TC3 in former version of the document and TC3 was removed intentionally from the document)

SuggestedRemedy

Remove Item MXS3

Response Response Status C

ACCEPT IN PRINCIPLE.

Remove Item MXS3 and renumber following PICS

Replace MXS4:
"Return loss at edge termination attachments points"

with:
"Return loss"

CI 188 SC 188.12.4.7 P 101 L 25 # 315

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type E Comment Status A PICS

There is a mix between "Feature" and "Value / Comment" at TCI1.

SuggestedRemedy

Change Feature to: "TCI insertion loss between TC1 and TC2"; Change Value/Comment to: "In each direction, measured with a reference impedance of 100 Ohm and with DTE loading attached"

Response Response Status C

ACCEPT.

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CI 188 SC 188.12.4.7 P 101 L 28 # 316
Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG
Comment Type E Comment Status A PICS
Items "TCI1" and "TCI2" are identical in the feature description. Think it should be "return loss" instead of "insertion loss in the feature description of item TCI2."
SuggestedRemedy
Change: "insertion loss" to "return loss" at item TCI2. Please consider comment to Item "TCI1" of this table for this remedy
Response Response Status C
ACCEPT IN PRINCIPLE.
At item TCI2:
Change Feature to: "TCI return loss at TC1 and TC2"
Change Value/Comment to: "In each direction, measured with a reference impedance of 100 Ohm and with DTE loading attached"

CI 189 SC 1 P 102 L 6 # 300
Fuller, Paul Marvell
Comment Type E Comment Status A Editorial
Change comma to a semi-colon?
SuggestedRemedy
After the word "entities", it seems like this should be a semi-colon instead of a standard colon. A dash could also work?
Response Response Status C
ACCEPT IN PRINCIPLE.
Replace,
"two power entities, an MPoE Powered Device (MPD) and an MPoE Power Sourcing Equipment (MPSE)"
with,
"two power entities for use with the 10BASE-T1M Physical Layer. The defined entities are an MPoE Powered Device (MPD) and an MPoE Power Sourcing Equipment (MPSE)."
in first sentence of 189.1.

CI 189 SC 2 P 103 L 40 # 302
Fuller, Paul Marvell
Comment Type T Comment Status R Mixing Segment
What is the value of the AC coupling cap?
SuggestedRemedy
Suggest to add value of the AC cap in the text (at least a nominal value) and possibly include a reference to electrical characteristics table. Also, the figure above (189-1) could also include the value of the AC caps.
Response Response Status C
REJECT.
These figures are not normative specifications and are shown for reference points and to inform that DC power needs to be blocked from the termination resistance. The AC cap will be controlled by the mixing segment's need to meet insertion loss specifications given in the PHY clause. This is similar to the approach taken with terminations in PoDL and PoE clauses. Commenter provides insufficient information for a remedy (i.e., no value for AC caps provided).

CI 189 SC 4.5 P 113 L 1 # 301
Fuller, Paul Marvell
Comment Type E Comment Status A Editorial
Naming convention in the table that will be used for other parts of the document. Recommend to have consistent naming for Parameters and Symbols.
SuggestedRemedy
TBackoff signal could become T_Discovery_Backoff. This is a longer Symbol name but helps to describe it is part of Discovery. VDiscovery could be V_Discovery_LowV and VMark could be V_Discovery_HighV.
Response Response Status C
ACCEPT IN PRINCIPLE.
Change T{Backoff} to T{Discovery_Backoff }
Editor to implement replacement globally.

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CI 189 SC 189.1 P 102 L 9 # 27

Jones, Peter Cisco Systems

Comment Type ER Comment Status A MPoE

"189.1 Overview" first paragraph includes
 "MPoE can provide a multidrop single pair Ethernet Physical Layer device with an interface"
 The capitalization and hyphenation of "single pair Ethernet" is not consistent with other
 examples in the document, e.g. "Single-Pair Ethernet", "Single Pair Multidrop", "Single Pair
 Ethernet".

SuggestedRemedy

Decide how " single pair Ethernet" is supposed to be capitalized/hyphenated, and change all
 instances to be consistent.

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: "single-pair" (with a hyphen) is only used in the title of 802.3de and "Single Pair"
 (capitalized) is only used in the name of the Task Group in the Headers and references in the
 Front Matter. All instances are already consistent.)

Change to "In conjunction with a 10BASE-T1M PHY, MPoE can provide an Ethernet Physical
 Layer device with an interface to both the power and data using only a single balanced pair of
 conductors as a shared medium."

CI 189 SC 189.1 P 102 L 16 # 28

Jones, Peter Cisco Systems

Comment Type TR Comment Status A MPSE

Item c) says "A method for determining the presence of one or more MPDs prior to applying
 power".
 It doesn't mention detecting Type 0 vs Type 1 MPDs

SuggestedRemedy

replace
 "A method for determining the presence of one or more MPDs prior to applying power."
 with
 "A method for determining the presence of one or more MPDs, Type 0 and/or Type 1, prior to
 applying power"

Response Response Status C

ACCEPT IN PRINCIPLE.

Change:
 "A method for determining the presence of one or more MPDs wprior to applying power."

to:
 "A method for determining the presence and type of one or more MPDs prior to applying
 power."

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 189.1.1 P 102 L 32 # 29

Jones, Peter Cisco Systems

Comment Type E Comment Status R TCI

The last sentence is "Such compatibility may require additional specifications found within this
 clause (see 189.6.2)."
 I don't think it adds anything useful.

SuggestedRemedy

Remove "Such compatibility may require additional specifications found within this clause (see
 189.6.2)."

Response Response Status C

REJECT.

There are additional specifications, and the text was added to highlight that the TCI for MPoE
 has polarity sensitivity.

CI 189 SC 189.1.3.3 P 103 L 19 # 215

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A EZ

Why is Figure 189-1 here? It should follow 189.1.2 where it is referenced.

SuggestedRemedy

Move Figure 189-1 to follow 189.1.2

Response Response Status C

ACCEPT.

CI 189 SC 189.1.3.3 P 103 L 19 # 137

Huber, Thomas Nokia

Comment Type E Comment Status A EZ

Figure 189-1 is about the content of clause 189.2, but appears before that clause.

SuggestedRemedy

Change the anchor point for the figure to be below the heading for 189.2

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by #215.

Move Figure 189-1 to follow 189.1.2

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CI 189 SC 189.2 P 103 L 40 # 30

Jones, Peter Cisco Systems

Comment Type ER Comment Status A EZ

The last sentence of the first para says "The dc loop resistance of the cable..."
DC should be capitalized.

SuggestedRemedy

Replace
"The dc loop resistance of the cable..."
with
"The DC loop resistance of the cable..."
and check for other instances.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #2.

Please change multiple instances of "dc" to "DC" throughout the document

CI 189 SC 189.2 P 103 L 44 # 138

Huber, Thomas Nokia

Comment Type E Comment Status A EZ

Stray space between the m and omega at the end of the sentence

SuggestedRemedy

Delete the extra space.

Response Response Status C

ACCEPT.

CI 189 SC 189.3 P 104 L 3 # 93

Ran, Adeo Cisco

Comment Type TR Comment Status A Power

It is unclear what "system type" means and whether MPSE of one system type is compatible
with PMD of a different system type. If so, is it a device type rather than a system type?

Also on the 3rd paragraph there is "Type Mixed MPDs" which is not explained.

You have to go to 189.5.1 to figure out what "Type Mixed" is, and also to understand the
compatibility considerations, which are not straightforward.

SuggestedRemedy

Find a better term than "system type" that applies to devices rather than systems.

Move the compatibility considerations to 189.3 or provide appropriate cross-references.

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace the first two sentences of 189.3 with "MPSEs and MPDs are categorized by their
system type. The system type is defined by the operating voltage and specifications shown in
Table 189-1."

Add at the end of the first paragraph of 189.3 (P104 L5), " MPDs may support more than one
system type."

CI 189 SC 189.3 P 104 L 9 # 94

Ran, Adeo Cisco

Comment Type E Comment Status A EZ

Per the style manual, a space should separate the value and the unit.

SuggestedRemedy

Change 1W to 1 W (or 1 Watt). Similarly for 2W.
Change elsewhere if necessary.

Response Response Status C

ACCEPT IN PRINCIPLE.

L9, P 104 and L44, P124

Replace "1W" with "1 W"

L10, P 104 and L45, P124

Replace "2W" with "2 W"

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CI 189 SC 189.3 P 104 L 16 # 214

Jones, Chad

Cisco Systems, Inc.

Comment Type ER Comment Status A Unit Load

Unit loads again. I've been vocal that I hate that the concept "leaves power on the table", mostly because I know the biggest complaint we will get after approval is "why isn't there more power available?"

I still don't have a good solution to make it easy to keep a unit load concept and optimize the power budget, therefore I propose that we tell the reader that the unit load concept doesn't allocate all the power.

SuggestedRemedy

Add at the end of the section: "The unit load concept will result in a system that will work but one that has power left over that cannot be allocated. Unit loads were introduced to make it easy for the uninitiated to install a network. It is possible to design the network to completely comply with all the other requirements while exceeding the unit load restrictions. This should be done only by experienced installers or under engineering supervision."

Response Response Status C

ACCEPT IN PRINCIPLE.

Add at the end of the section: "The unit load concept provides margin to simplify system conformance, but generally results in power that cannot be allocated. Unit loads were introduced to make it easy to install a network. It is possible to design the network to comply with the other requirements while exceeding the unit load restrictions. This should be done only by experienced installers or under engineering supervision."

CI 189 SC 189.3 P 104 L 21 # 31

Jones, Peter

Cisco Systems

Comment Type TR Comment Status A Editorial

Table 189–1—System power types defines the 30V and 50V system types, but doesn't associate them with the Type 0/Type 1 labels.

SuggestedRemedy

Add "Type 0" and "Type 1" to the 30V and 50V row headers respectively.

Response Response Status C

ACCEPT IN PRINCIPLE.

Editor to delete first body row "System type", and add "(Type 0)" and "(Type 1)" to the column headers for 30V and 50V MPSE.

CI 189 SC 189.3 P 104 L 26 # 269

Brychta, Michal

Analog Devices

Comment Type T Comment Status R Power

30V Max MPSE: VMPSE min 26V

SuggestedRemedy

I think the intention was this voltage to be <24V, is 21.6V correct value?

Response Response Status C

REJECT.

See comment #297.

Technical justification for the change is needed.

CI 189 SC 189.3 P 104 L 26 # 297

Paul, Michael

Analog Devices

Comment Type ER Comment Status R Power

Vpse,min has a typo.

SuggestedRemedy

26 should be 21.6

Response Response Status U

REJECT.

This is not a typo. Task Force needs to consider if a change to Pmpse min is needed. No consensus to change.

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CI 189 SC 189.4 P 104 L 38 # 32

Jones, Peter Cisco Systems

Comment Type TR Comment Status A MPSE

Item a) says "To search the mixing segment for at least one available MPD."
I don't think we define "available MPD", and this should probably be "voltage compatible MPD"

SuggestedRemedy

Replace
"To search the mixing segment for at least one available MPD."
with
"To search the mixing segment for at least one voltage compatible MPD."

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace:
"To search the mixing segment for at least one available MPD."

with:
"To search the mixing segment for at least one voltage-compatible MPD."

CI 189 SC 189.4.1 P 104 L 51 # 33

Jones, Peter Cisco Systems

Comment Type ER Comment Status A Editorial

Grammar

SuggestedRemedy

Replace
"listed in Table 189–1 for the relevant type."
with
"listed in Table 189–1 for its type."

Response Response Status C

ACCEPT.

CI 189 SC 189.4.2 P 105 L 3 # 216

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A MPSE

"Table 189–2 in conjunction with Figure 189–1 illustrates the MPSE pinout." I see what the table tells me, but what do I get from Figure 189-1? I see nothing helping me identify the pinout. I don't think we need to refer to the figure.

SuggestedRemedy

change text to: "Table 189–2 illustrates the MPSE pinout."

Response Response Status C

ACCEPT.

CI 189 SC 189.4.3 P 105 L 29 # 139

Huber, Thomas Nokia

Comment Type E Comment Status A Power

The wording of the last sentence in the 4th and 5th paragraphs is awkward: "Current is measured as the sum of both higher voltage pins on MP1 and MP2 or both lower voltage pins on MP1 and MP2." The intent is presumably to sum the currents that are measured at those pins.

SuggestedRemedy

Change the text to "Current is measured as the sum of the currents at the higher voltage pins on MP1 and MP2 or the sum of the currents at the lower voltage pins on MP1 and MP2".

Response Response Status C

ACCEPT.

CI 189 SC 189.4.3 P 105 L 32 # 178

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

Comment Type E Comment Status A Power

Extraneous comma between two specifications. Remove redundant text.

SuggestedRemedy

Replace "If the specification calls for the voltage to be above a value, or below a value, both..." with "If the specification calls for the voltage to be above or below a value, both..."

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

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CI 189 SC 189.4.3 P 105 L 34 # 140

Huber, Thomas

Nokia

Comment Type E Comment Status A Power

The last sentence of the 5th paragraph is duplicating the last sentence of the fourth paragraph, and isn't really related to the rest of the 5th paragraph (which is about compliance to voltage specifications).

SuggestedRemedy

Delete the last sentence of the 5th paragraph.

Response Response Status C

ACCEPT.

CI 189 SC 189.4.4 P 106 L 4 # 34

Jones, Peter

Cisco Systems

Comment Type ER Comment Status A MPSE

Change "valid MPD" to "voltage-compatible MPD".

SuggestedRemedy

Replace
"MPSE determines the presence of at least one valid MPD."
with
"MPSE determines the presence of at least one voltage compatible MPD."

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace:
"MPSE determines the presence of at least one valid MPD."

with:
"MPSE determines the presence of at least one voltage-compatible MPD."

CI 189 SC 189.4.4 P 106 L 10 # 217

Jones, Chad

Cisco Systems, Inc.

Comment Type E Comment Status A MPSE

"After full operating voltage has been applied, the MPSE removes full operating voltage in response to a command from the management entity that results in mpse_enable being set to disable. For example, the management entity could monitor the link to determine if at least one MPD remains attached, and there have been no changes in the network topology." The second sentence are examples of keeping power, not removing it. Need to invert the logic to make it match the sentiment of the first sentence.

SuggestedRemedy

Change text to: "For example, the management entity could monitor the link to determine if no MPDs remain attached or there have been changes in the network topology."

Response Response Status C

ACCEPT.

CI 189 SC 189.4.4 P 106 L 11 # 165

Baggett, Tim

Microchip

Comment Type E Comment Status A Editorial

Last sentence of the paragraph refers to the management entity monitoring the *link* for at least one MPD being attached. I believe "link" as in "link segment" is typically reserved for point-to-point topologies and is not appropriate for multidrop.

SuggestedRemedy

Change:
"...monitor the link to determine..."
To:
"...monitor the mixing segment to determine..."

Response Response Status C

ACCEPT.

IEEE P802.3da D2.0 10 Mbps Multidrop Enhancements

CI 189 SC 189.4.4.3 P 108 L 3 # 166

Baggett, Tim Microchip

Comment Type E Comment Status A Editorial

The timers in this section need improved references to the appropriate entries in the referenced tables. As presently written, it is not clear which parameters some of the timers refer too.

SuggestedRemedy

Apply subscripts as necessary.

P108 L3: (discovery_backoff_timer)

Change: "See Table 189-3."

To: "See TBackoff in Table 189-3."

L108 L6: (mark_timer)

Change: "See Table 189-3."

To: "See TMark_measure in Table 189-3."

L108 L10: (measure_timer)

Change: "See Table 189-3."

To: "See TDiscover_measure in Table 189-3."

L108 L13: (mpse_inrush_timer)

Change: "See Table 189-5."

To: "See TInrush in Table 189-5."

L108 L16: (tdiscover_high_timer)

Change: "See Table 189-3."

To: "See TDiscover_high in Table 189-3."

L108 L18: (tdiscover_low_timer)

Change: "See Table 189-3."

To: "See TDiscover_low in Table 189-3."

L108 L21: (ted_timer)

Change: "See Table 189-5."

To: "See TED in Table 189-5."

L108 L24: (ttpsd_o_timer)

Change: "See Table 189-5."

To: "See TTPSDO in Table 189-5."

Response Response Status C

ACCEPT.

CI 189 SC 189.4.4.4 P 109 L 9 # 213

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

Comment Type E Comment Status A Editorial

Variables language is verbose. Of course a variable is set per the description. Also, values returned from do_discovery_high obviously represent the current at the time the function is called. The language is a relic of when we used to have do_discovery_high also present the mark voltage. We no longer need to say "during do_discovery_high" in the description, and in the two values.

SuggestedRemedy

delete "This variable is set per this description." at lines 10-11.

delete "during do_discovery_high" at lines 9, 12, and 13-14.

Response Response Status C

ACCEPT.

CI 189 SC 189.4.4.5 P 111 L 11 # 294

Paul, Michael Analog Devices

Comment Type T Comment Status R MPSE

We may need a DO_DISCOVERY6 and DO_MARK6 state if we expand the discovery interpretations

SuggestedRemedy

See presentation mpaul_da_02...

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

CI 189 SC 189.4.4.5 P 111 L 32 # 218

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A EZ

off page marker "A" not attached to the arrowhead.

SuggestedRemedy

attach the marker "A" to the arrowhead.

Response Response Status C

ACCEPT.

IEEE P802.3da D2.0 10 Mbps Multidrop Enhancements

CI 189 SC 189.4.5 P 112 L 3 # 35

Jones, Peter Cisco Systems

Comment Type E Comment Status A MPSE

The first sentence of "189.4.5 Discovering the presence of an MPD before powering" starts with "The ability for the MPSE to query all attached MPDs".

I don't think the MPSE queries all attached MPDs since it doesn't get individual responses.

SuggestedRemedy

replace

"The ability for the MPSE to query all attached MPDs"

with

"The ability for the MPSE to query any attached MPDs"

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace:

"The ability for the MPSE to query all attached MPDs"

with:

"The ability for the MPSE to query attached MPDs"

CI 189 SC 189.4.5 P 112 L 12 # 219

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A Editorial

I found this sentence hard to parse: "The MPSE waits TMark_measure between applying the mark event voltage at the entrance of HIGH_MARK before measuring the mark event current IDiscovery in DISCOVERY_HIGH_MARK."

I'll take a crack at making it better in the remedy.

SuggestedRemedy

Change text to: "The MPSE waits TMark_measure between applying the mark event voltage at the entrance of the HIGH_MARK state before measuring the mark event current IDiscovery in the DISCOVERY_HIGH_MARK state."

Alternately, this paragraph seems to be describing the state diagram with no new information, I could support deleting the paragraph.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change:

"The MPSE waits T{Mark_measure} between applying the mark event voltage at the entrance of HIGH_MARK before measuring the mark event current I{Discovery} in DISCOVERY_HIGH_MARK."

to:

"The MPSE waits T{Mark_measure} between the time it applies the mark event voltage at the entrance of the HIGH_MARK state and the time it measures the mark event current I{Discovery} in the DISCOVERY_HIGH_MARK state."

(Editor's note: { } indicates text as subscript)

CI 189 SC 189.4.5 P 112 L 19 # 212

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

Comment Type E Comment Status A EZ

State names shouldn't be hyphenated if it can be avoided.

SuggestedRemedy

Editor to invoke suppress hyphyation in lines 18 through 25.

Response Response Status C

ACCEPT.

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CI 189 SC 189.4.5 P 112 L 30 # 291

Paul, Michael Analog Devices

Comment Type E Comment Status A Editorial

T_{Discover_backoff} is not in table 189-3.

SuggestedRemedy

I believe we are looking for T_{Backoff} here.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change "T_Discovery_backoff" at P112 L30 to T_Backoff.

Editor to harmonize with other variable naming (see comment #301).

CI 189 SC 189.4.6 P 114 L 6 # 220

Jones, Chad Cisco Systems, Inc.

Comment Type ER Comment Status A Editorial

Table 189-5 needs the additional information column filled.

SuggestedRemedy

Add this additional information for the following items:

Item 2 see 189.4.7 (remove divider, same info for each type)

item 4 see 189.4.9

item 5 see 189.4.9

item 7,8,9 see 189.4.10.1

item 11,12 see 189.4.8

Response Response Status C

ACCEPT.

CI 189 SC 189.4.6 P 114 L 8 # 183

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

Comment Type E Comment Status R EZ

Remove empty table columns.

SuggestedRemedy

Delete column "Additional Information" in Table 189-5 and Table 189-10

Response Response Status Z

REJECT.

Comments #220 and #232 add content to the Additional Information column.

CI 189 SC 189.4.6 P 114 L 11 # 270

Brychta, Michal Analog Devices

Comment Type T Comment Status R MPSE

VMPSE V: Min 26V

SuggestedRemedy

I think the intention was this voltage to be <24V, is 21.6V correct value?

Response Response Status C

REJECT.

See comment #297.

No consensus for change.

CI 189 SC 189.4.6 P 114 L 12 # 141

Huber, Thomas Nokia

Comment Type E Comment Status A EZ

In table 189-5, the table cells in the Unit column for Item 1 should be merged, since the unit for both of the subsequent rows is V

SuggestedRemedy

Merge the table cells

Response Response Status C

ACCEPT.

IEEE P802.3da D2.0 10 Mbps Multidrop Enhancements

CI 189 SC 189.4.8 P 114 L 53 # 221

Jones, Chad

Cisco Systems, Inc.

Comment Type T Comment Status A MPSE

We state that Icut is "PMPSE/VMPSE" in item 11 and never explain this. As a previous comment has pointed the reader here, this is where we explain.

SuggestedRemedy

add the text: "The minimum value of Icut is PMPSE/VMPSE to ensure that the PSE delivers the guaranteed power regardless of VMPSE. Icut is required to scale with VMPSE if the MPSE cannot support a minimum of 1A at any VMPSE. There is no maximum ICUT as the minimum ILIM bounds the maximum ICUT."

Of course, fix the subscript text as required.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add text: "The minimum value of Icut is PMPSE (min)/VMPSE to ensure that the PSE delivers the guaranteed power regardless of VMPSE. Icut is required to scale with VMPSE if the MPSE cannot support a minimum of 1A at any VMPSE. There is no maximum ICUT as the minimum ILIM bounds the maximum ICUT."

(Editor's note: Of course, fix the subscript text as required. Editor to confirm how we write PMPSE(min) in other power clauses.)

CI 189 SC 189.4.10.1 P 115 L 30 # 222

Jones, Chad

Cisco Systems, Inc.

Comment Type ER Comment Status A EZ

"...ERROR_DELAY state in Table 189-4." This should be Figure, not Table.

SuggestedRemedy

Change to: "ERROR_DELAY state in Figure 189-4."

Response Response Status C

ACCEPT.

CI 189 SC 189.5 P 115 L 37 # 36

Jones, Peter

Cisco Systems

Comment Type E Comment Status A MPD

The last sentence of the first para of "189.5 Multidrop Powered Device (MPD)" says "An MPD requiring power from the MPI may simultaneously draw power from an alternate power source."

In this usage, I think the MPD is requesting power, not requiring it.

SuggestedRemedy

Replace

"An MPD requiring power from the MPI "

With

"An MPD requesting power from the MPI "

Response Response Status C

ACCEPT.

CI 189 SC 189.5.1 P 115 L 50 # 223

Jones, Chad

Cisco Systems, Inc.

Comment Type E Comment Status A EZ

Need to point the reader to figures to help them understand what was just stated.

SuggestedRemedy

Add: "See Figure 189-1 and Figure 189-5." to the end of the paragraph.

Response Response Status C

ACCEPT.

CI 189 SC 189.5.2 P 116 L 16 # 95

Ran, Adele

Cisco

Comment Type TR Comment Status R MPD

"MPDs are current sinks. See Figure 189-5"

It is not clear what "current sink" means. By Kirchhoff's current law, a 2-port network (which an MPD is) has the same current entering and exiting it, so cannot be current sink. Figure 189-5 does not clarify this statement.

SuggestedRemedy

Clarify the sentence. Perhaps "power sink" is intended.

Response Response Status W

REJECT.

No consensus for change.

Current sink is a term of art in power engineering.

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CI 189 SC 189.5.2 P 116 L 22 # 142

Huber, Thomas

Nokia

Comment Type E Comment Status A Editorial

The wording of the last sentence in paragraph above the note is awkward: "Current is measured as the sum of both higher voltage pins on MP1 and MP2 or both lower voltage pins on MP1 and MP2." The intent is presumably to sum the currents that are measured at those pins.

SuggestedRemedy

Change the text to "Current is measured as the sum of the currents at the higher voltage pins on MP1 and MP2 or the sum of the currents at the lower voltage pins on MP1 and MP2".

Response Response Status C

ACCEPT.

CI 189 SC 189.5.2 P 116 L 27 # 224

Jones, Chad

Cisco Systems, Inc.

Comment Type E Comment Status A MPD

"The current used by the MPD lowers the current supplied to the output MP feeding the rest of the MPDs that follow in the mixing segment."

What is the output MP? Do we mean MPx? I'm guessing MPI, but I could be wrong.

SuggestedRemedy

Change to: "... to the output MPI feeding the rest..."

Response Response Status C

ACCEPT IN PRINCIPLE.

Change to: "... to the output MPx (MP1 or MP2, as appropriate) feeding the rest..."

CI 189 SC 189.5.2 P 116 L 40 # 173

Baggett, Tim

Microchip

Comment Type E Comment Status A EZ

MPSD DTE box in Figure 189-5 appears mislabeled. Should be MPD DTE.

SuggestedRemedy

Change the text in the box labeled "MPSD DTE" in figure 189-5 to "MPD DTE"

Response Response Status C

ACCEPT.

CI 189 SC 189.5.2 P 116 L 40 # 96

Ran, Adele

Cisco

Comment Type TR Comment Status A EZ

"MPSD" in the figure is not defined. I assume it is "MPD", but if not, some other change needs to be made.

SuggestedRemedy

Change to "MPD".

Response Response Status W

ACCEPT.

CI 189 SC 189.5.2 P 116 L 41 # 37

Jones, Peter

Cisco Systems

Comment Type ER Comment Status A EZ

Type in Figure 189-5, it says "MPSD" where it should say "MPD".

SuggestedRemedy

Replace

"MPSD"

With

"MPD"

Response Response Status C

ACCEPT.

IEEE P802.3da D2.0 10 Mbps Multidrop Enhancements

CI 189 SC 189.5.3.2 P 117 L 7 # 167

Baggett, Tim Microchip

Comment Type E Comment Status A Editorial

Some of the constants in this section need improved references to the appropriate entries in the referenced tables. As presently written, it is not clear which parameters some of the constants refer too.

SuggestedRemedy

Apply subscripts as necessary.

P117 L7 (VDiscovery_th)

Change: "Mark discovery threshold voltage (see Table 189-7)"

To: "Mark discovery threshold voltage, VDiscovery_th (see Table 189-7)"

P117 L12 (VReset_th)

Change: "Mark discovery threshold voltage (see Table 189-7)"

To: "Mark discovery threshold voltage, <insert correct Symbol> (see Table 189-7)"

Response Response Status C

ACCEPT IN PRINCIPLE.

P117 L7 (VDiscovery_th)

Change: "Mark discovery threshold voltage (see Table 189-7)"

To: "Mark discovery threshold voltage, V{Discovery_th} (see Table 189-7)"

P117 L12 (VReset_th)

Change: "Reset voltage threshold (see Table 189-7)"

To: "Reset voltage threshold, V{MPD_reset} (see Table 189-7)"

CI 189 SC 189.5.3.2 P 117 L 9 # 330

Paul, Michael Analog Devices

Comment Type T Comment Status A LATE

V_{Reset_MPD_max} is not a useful constant for the state machine. We should use a threshold constant, not the maximum value of a voltage region.

SuggestedRemedy

Delete V_{Reset_MPD_max} from this section and rely on V_{Reset_th} for all places where V_{Reset_MPD_max} was used.

Response Response Status C

ACCEPT.

CI 189 SC 189.5.3.2 P 117 L 10 # 174

Baggett, Tim Microchip

Comment Type E Comment Status A EZ

Definition of VReset_MPD_max refers to wrong voltage symbol in Table 189-7

SuggestedRemedy

<x> denotes subscript 'x'

Change: V<Reset_MPD>

To: V<MPD_reset>

See P122 L23

Response Response Status C

ACCEPT.

CI 189 SC 189.5.3.2 P 117 L 14 # 168

Baggett, Tim Microchip

Comment Type E Comment Status A MPD

It is not clear to me what the values of Vtype0_th and Vtype1_th should be.

SuggestedRemedy

Please improve the description in L14 for Vtype0_th and L 17 for Vtype1_th

Response Response Status C

ACCEPT IN PRINCIPLE.

Add :(See Vtype0_th in Table 189-9) to L14 and

(See Vtype1_th in Table 189-9) to L17.

CI 189 SC 189.5.3.3 P 117 L 42 # 38

Jones, Peter Cisco Systems

Comment Type E Comment Status A EZ

the indentation for the values of 'present_sig' is not quite right

SuggestedRemedy

Fix indentation.

Response Response Status C

ACCEPT IN PRINCIPLE.

Align indentation of tabbed descriptions (e.g., between "MARK:" and "The MPD") on Lines 42 - 44, and 52-54 with 36-39, breaking lines where necessary.

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CI 189 SC 189.5.3.3 P 118 L 1 # 169

Baggett, Tim Microchip

Comment Type E Comment Status A State Diagrams

The variable present_mpi_power is missing a description.

SuggestedRemedy

Add a description for the present_mpi_power variable.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add description: "Controls the MPI drawing full operating power."

CI 189 SC 189.5.3.3 P 118 L 5 # 175

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

Comment Type E Comment Status A EZ

"Transmit Power Signature TPS" is redundant

SuggestedRemedy

Replace "Transmit Power Signature TPS" with "TPS"

Response Response Status C

ACCEPT.

CI 189 SC 189.5.3.3 P 118 L 10 # 170

Baggett, Tim Microchip

Comment Type E Comment Status A MPD

The entry for V<MPD> variable includes a reference to Table 189-9. I do not, however, see any connection to an entry in this table, not that their should be. This is simply the measured voltage at the MPD MPI, right?

SuggestedRemedy

Delete the reference to Table 189-9, or include a reference to a specific symbol/parameter within the table.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change "(See Table 189-9)" to "(See V_Port_MPD in Table 189-9):

(Editor's implementation note: "Port_MPD" should be subscript, both here and in the table.)

CI 189 SC 189.5.3.5 P 120 L 52 # 293

Paul, Michael Analog Devices

Comment Type T Comment Status A State Diagrams

We may need a DO_DISCOVERY7 and DO_MARK7 state if we expand the discovery interpretations

SuggestedRemedy

See presentation mpaul_da_02...

Response Response Status C

ACCEPT IN PRINCIPLE.

Adopt proposal on slide 5 of
https://www.ieee802.org/3/da/public/0125/paul_da_02_20240120_v0.pdf

CI 189 SC 189.5.3.5 P 121 L 22 # 225

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A EZ

arrowhead enters into the box for PON_LOAD_ON.

SuggestedRemedy

fix arrowhead to just touch the edge.

Response Response Status C

ACCEPT.

CI 189 SC 189.5.3.5 P 122 L 6 # 332

Paul, Michael Analog Devices

Comment Type T Comment Status A LATE

The reset threshold should be V_{Reset_th}, not V_{Reset_MPD_max}

SuggestedRemedy

Replace V_{Reset_MPD_max} with V_{Reset_th}

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace V_{Reset_MPD_max} with V_{Reset_th}
at P119 line 6 (in Fig 189-6 state diagram)

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CI 189 SC 189.5.4 P 122 L 8 # 226

Jones, Chad

Cisco Systems, Inc.

Comment Type E Comment Status A MPD

Additional information column needs filled out.

Also, what does 2.7V to 19.1V mean in item 9? It seems like not enough additional information. I suggest that is moved to the text and point to the section in the table (after we figure out what else to say).

SuggestedRemedy

Seems all this additional info is "see 189.5.4", which is the section we are in. Therefore, delete the column after relocating the 2.7 to 19.1 V into the text and explaining it. I apologize as I don't know what the solution is, not sure why it was needed in the table. I'm also happy with just deleting that with the column.

Response Response Status C

ACCEPT IN PRINCIPLE.

Delete "Additional Information Column"

Add Footnote to item 9 (input capacitance) attached to "Parameter" - "(1) Capacitance when voltages from 2.7 V to 19.1 V are presented at the MPI".

(Editor's note: it's believed these are the voltage ranges consistent with Discovery voltages before MPSE powering voltage is applied.)

CI 189 SC 189.5.4 P 122 L 19 # 97

Ran, Adee

Cisco

Comment Type E Comment Status A EZ

Some current values are expressed in mA while others are in uA. This is contrary to the style manual (16.3.1: "The same units of measure shall be used throughout each column"). Using mA always would still yield easily readable values.

SuggestedRemedy

Change the rows that use uA units to mA (200 uA ==> 0.2 mA).
Change elsewhere if necessary.

Response Response Status C

ACCEPT.

CI 189 SC 189.5.4 P 122 L 23 # 331

Paul, Michael

Analog Devices

Comment Type T Comment Status A LATE

Change name of Symbol V_{MPD_reset} to V_{Reset_th} for consistency. Other threshold in this table take the form of V_{xxx_th}. Also mpd_reset is a variable name that is not really related to this symbol name, so changing prevents confusion

SuggestedRemedy

Change name of Symbol V_{MPD_reset} to V_{Reset_th} for consistency

Response Response Status C

ACCEPT.

CI 189 SC 189.5.4 P 122 L 30 # 98

Ran, Adee

Cisco

Comment Type E Comment Status A EZ

Per the style manual, a space should separate the value and the unit.

SuggestedRemedy

Change "2.7V to 19.1V" to "2.7 V to 19.1 V"

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #226.

Delete "Additional Information Column"

Add Footnote to item 9 (input capacitance) attached to "Parameter" - "(1) Capacitance when voltages from 2.7 V to 19.1 V are presented at the MPI".

(Editor's note: it's assumed that these are the voltage ranges consistent with Discovery voltages before MPSE powering voltage is applied.)

CI 189 SC 189.5.4 P 122 L 39 # 227

Jones, Chad

Cisco Systems, Inc.

Comment Type E Comment Status A EZ

Two discovery symbols on this line that don't have the proper subscript: IMPD_discover and IMPD_mark.

SuggestedRemedy

Change them to match Item 4 and 5 in Table 189-7.
{IMPD_discover} and {IMPD_mark}.

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

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CI 189 SC 189.5.4 P 122 L 40 # 228

Jones, Chad

Cisco Systems, Inc.

Comment Type E Comment Status A EZ

"During event 3, Type 0 MPDs respond and Type 1 and Type mixed MPDs do not. During event 4, Type 1 MPDs respond and Type 0 and Type mixed MPDs do not. During event 5, Type mixed MPDs respond and Type 0 and Type 1 MPDs do not."
X respond and Y do not. I don't like the "and" and would prefer it replaced with "while".

SuggestedRemedy

Replace "and" with "while" in 3 spots"

"During event 3, Type 0 MPDs respond and Type 1 while Type mixed MPDs do not. During event 4, Type 1 MPDs respond and Type 0 while Type mixed MPDs do not. During event 5, Type mixed MPDs respond while Type 0 and Type 1 MPDs do not."

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #194.

Adopt changes in

https://www.ieee802.org/3/da/public/0125/cjones_D2p0_comment194_V3.pdf

Editorial license to adjust any remaining "type Mixed" to align with this comment.

CI 189 SC 189.5.4 P 123 L 17 # 292

Paul, Michael

Analog Devices

Comment Type T Comment Status R MPD

Potentially add other interpretations of the bits to table 189-8 so that we can use the da power standard for other point-to-point systems (dg)

SuggestedRemedy

See presentation mpaul_da_02...

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

CI 189 SC 189.5.5 P 123 L 27 # 229

Jones, Chad

Cisco Systems, Inc.

Comment Type E Comment Status A Editorial

Table 189-9 needs the additional information column filled.
Also, the value in item 5 needs the leading 0

SuggestedRemedy

Add text:

Item 3, delete what's there and replace with see 189.5.5.2

Item 5, see 189.5.5.1.

Also item 5, change .01 to 0.01.

Item 8, see 189.5.5.1

Response Response Status C

ACCEPT IN PRINCIPLE.

Item 3, replace "must be an integer" with see 189.5.5.2

Item 5, add "See 189.5.5.1" to Additional Information column

Item 5, Change ".01" to "10" and units from "A" to "mA"

Item 8, add "See 189.5.5.1" to Additional Information column

CI 189 SC 189.5.5 P 123 L 41 # 99

Ran, Adele

Cisco

Comment Type E Comment Status A EZ

Per the style manual, multiplication should be denoted by the sign ×. An asterisk should not be used.

SuggestedRemedy

Change per comment.

Change elsewhere if necessary.

Response Response Status C

ACCEPT IN PRINCIPLE.

Editor to replace "*" with "x" in Item 4 and P124, L51

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CI 189 SC 189.5.5 P 123 L 44 # 100

Ran, Adeo Cisco

Comment Type ER Comment Status A Editorial

Per the style manual (16.3.2) "the decimal point should be preceded by a zero".
Also, other current values in this table are in mA.

SuggestedRemedy

Change ".01" to "10" and units from "A" to "mA".

Response Response Status W

ACCEPT IN PRINCIPLE.

Accommodated by comment #229.

Item 3, replace "must be an integer" with see 189.5.5.2

Item 5, add "See 189.5.5.1" to Additional Information column

Item 5, Change ".01" to "10" and units from "A" to "mA"

Item 8, add 189.5.5.1 to Additional Information column

CI 189 SC 189.5.5 P 124 L 11 # 230

Jones, Chad Cisco Systems, Inc.

Comment Type TR Comment Status R MPD

Table 189-9, item 10. We put a value of 180uF in there and asked people to evaluate if that's acceptable. I've tried to (and failed so far) reach the original author of the 180uF in 802.3af to confirm my recollection. What I recall is that this is the biggest value that can be designed into a PD without putting inrush control while in the POWER_ON state. This was to ensure a PD didn't force a PSE to exceed the voltage slew rate in the case of a PSE changing from Vportmax to Vportmin or vice versa (for example in a redundant supply configuration during a failover).

As such, this 180uF is the TOTAL capacitance that can be on the mixing segment and needs to be divided by all the MPDs.

Also, the min to max range of AF was 13V. our worst case min to max is 16V, so I think the 180 needs scaled by 13/16. This would yield 9uF per unit load. Since a min to max swing is highly unlikely, I think we can round to 10uF.

SuggestedRemedy

Change the max value of item 10 to "10" and put "per unit load" in the additional information column. We might choose to 189.5.5.4 to explain this better.

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

CI 189 SC 189.5.5 P 124 L 22 # 245

Potterf, Jason Cisco

Comment Type TR Comment Status A MPD

The MPD current slew rate requires a test procedure to prove that the PD meets the appropriate limits.

SuggestedRemedy

After Table 189-9, insert test from 104.5.7.4 PD ripple and transients. I shall provide a presentation with specific suggested text for the Task Force to consider.

Response Response Status C

ACCEPT IN PRINCIPLE.

Implement resolution in slide 3 of

https://www.ieee802.org/3/da/public/0125/SPMD_Potterf_PD_Load_Transient_Test_2025-01-08.pdf

CI 189 SC 189.5.5.1 P 124 L 26 # 172

Baggett, Tim Microchip

Comment Type E Comment Status R MPD

Lines 26, 27, and 35 refer to conditions when the MPD voltage measured at its MDI, V<MPD>, is greater than Vtype0_th. By examination of Figure 189-6 and Figure 189-7 it appears that V<MPD> is compared to V<Discovery_th>.

SuggestedRemedy

Change "Vtype0_th" in lines 26, 27, and 35 to "VDiscovery_th"

Response Response Status C

REJECT.

The text is referring to the entry to the INRUSH state, which is determined during the state PON_EVAL in determining present_mismatch_indication. This operation compares V_MPD to V_type0_th and V_type1_th, as described.

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 189.5.5.1

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CI 189 SC 189.5.5.2 P 124 L 41 # 39

Jones, Peter

Cisco Systems

Comment Type E Comment Status A Unit Load

A lot of the text in "189.5.5.2 MPD unit load" is repeating text from "189.3 System type power requirement" where it could use a reference instead.

SuggestedRemedy

Replace

"MPDs consume integer units of load, known as "unit loads".

For Type 0 and Type Mixed MPDs, one unit load represents 1W. For Type 1 MPDs, one unit load represents

2W.

A mixing segment can support up to 16 unit loads. Each MPD is allocated a minimum of 1 unit load and

may consume no more than 16 unit loads. The MPD system type and unit load level should be clearly indicated so users can track loading on a mixing segment.

MPD unit load level shall be an integer indicating the maximum power required by the MPD, where Nunit * PMPD_1U is greater than the MPD's power requirements for the MPD system type."

With

"MPD unit loads are described in 189.3 System type power requirements.

MPD unit load level shall be an integer indicating the maximum power required by the MPD, where Nunit * PMPD_1U is greater than the MPD's power requirements for the MPD system type."

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Change Nunit * PMPD_1U to Nunit x PMPD_1U to align with resolution to comment #99.)

Consider with comment #231.

Replace:

"MPDs consume integer units of load, known as "unit loads".

For Type 0 and Type Mixed MPDs, one unit load represents 1W. For Type 1 MPDs, one unit load represents 2W.

A mixing segment can support up to 16 unit loads. Each MPD is allocated a minimum of 1 unit load and may consume no more than 16 unit loads. The MPD system type and unit load level should be clearly indicated so users can track loading on a mixing segment.

MPD unit load level shall be an integer indicating the maximum power required by the MPD, where Nunit * PMPD_1U is greater than the MPD's power requirements for the MPD system type."

With:

"MPD unit loads are described in 189.3.

MPD unit load level shall be an integer indicating the maximum power required by the MPD, where Nunit x PMPD_1U is greater than the MPD's power requirements for the MPD system type."

CI 189 SC 189.5.5.2 P 124 L 44 # 101

Ran, Adee

Cisco

Comment Type E Comment Status A EZ

Per the style manual, a space should separate the value and the unit.

SuggestedRemedy

Change 1W to 1 W (or 1 Watt). Similarly for 2W.

Change elsewhere if necessary.

Response Response Status C

ACCEPT IN PRINCIPLE.

Globally change "1W" to "1 W"

Globally change "2W" to "2 W"

Editorial license to find and correct other occurrences of missing spaces between the value and the unit.

(Editor's note: Changes to this clause accommodated by comment #39.)

CI 189 SC 189.5.5.2 P 124 L 52 # 102

Ran, Adee

Cisco

Comment Type E Comment Status A EZ

Per the style manual, multiplication should be denoted by the sign x. An asterisk should not be used.

SuggestedRemedy

Change per comment.

Change elsewhere if necessary.

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #99.

Editor to replace "*" with "x" in Item 4 and P124, L51

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 189.5.5.2

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CI 189 SC 189.5.5.2 P 125 L 3 # 231

Jones, Chad

Cisco Systems, Inc.

Comment Type ER Comment Status A Unit Load

We should repeat the unit load text here, to explain it for those that might only read the PD section (cause experience tells us that WILL happen). copied my previous comment: Unit loads again. I've been vocal that I hate that the concept "leaves power on the table", mostly because I know the biggest complaint we will get after approval is "why isn't there more power available?" I still don't have a good solution to make it easy to keep a unit load concept and optimize the power budget, therefore I propose that we tell the reader that the unit load concept doesn't allocate all the power.

SuggestedRemedy

See what we did for 189.3 and copy it here.
Add at the end of the section: "The unit load concept will result in a system that will work but one that has power left over that cannot be allocated. Unit loads were introduced to make it easy for the uninitiated to install a network. It is possible to design the network to completely comply with all the other requirements while exceeding the unit load restrictions. This should be done only by experienced installers or under engineering supervision."

Response Response Status C

ACCEPT IN PRINCIPLE.

Add at the end of the section: "The unit load concept provides margin to simplify system conformance, but generally results in power that cannot be allocated. Unit loads were introduced to make it easy to install a network. It is possible to design the network to comply with the other requirements while exceeding the unit load restrictions. This should be done only by experienced installers or under engineering supervision."

CI 189 SC 189.5.5.3 P 124 L 6 # 176

Maguire, Valerie

Copperopolis; affl w/ CME Consulting and Cisco

Comment Type E Comment Status A EZ

"transmit power signature (TPS)" is redundant

SuggestedRemedy

Replace, "transmit power signature (TPS)" with "TPS" in the first sentence of the clause.

Response Response Status C

ACCEPT.

CI 189 SC 189.5.5.3 P 125 L 10 # 171

Baggett, Tim

Microchip

Comment Type E Comment Status A MPD

The text attempts to state that the MPD may have its power removed if it does not send a Transmit Power Signature every T<TPSDO> seconds. However it states that power may be removed *within* the limits of T<TPSDO>. This should state that power will be removed after the timer expires without receiving a TPS, not during the timer.

SuggestedRemedy

Change:

"An MPD that does not report TPS may have its power removed within the limits of T<TPSDO> as defined in Table 189-5."

To:

"An MPD that does not report TPS within the limits of T<TPSDO> as defined in Table 189-5 may have its power removed."

Response Response Status C

ACCEPT.

CI 189 SC 189.5.5.3 P 125 L 17 # 232

Jones, Chad

Cisco Systems, Inc.

Comment Type E Comment Status A EZ

There is no additional information to add to Table 189-10.

SuggestedRemedy

Delete the additional information column of Table 189-10.

Response Response Status C

ACCEPT.

IEEE P802.3da D2.0 10 Mbps Multidrop Enhancements

CI 189 SC 189.6.1.1 P 125 L 43 # 246

Potterf, Jason

Cisco

Comment Type T

Comment Status A

Environmental

The current isolations environments need additional refinement.

SuggestedRemedy

I will provide a presentation for the task force to consider.

Response

Response Status C

ACCEPT IN PRINCIPLE.

Insert new subclause 188.6.1 (and renumber subsequent clauses)

188.6.1 Electrical isolation

A PHY with a TCI that is an MPI (see 189.1.2) shall meet the isolation requirements defined in 189.6.1.

(Editor's note: we REALLY mean 188.6.1...)

CI 189 SC 189.6.1.1 P 125 L 47 # 40

Jones, Peter

Cisco Systems

Comment Type ER

Comment Status A

EZ

Using "a LAN" or "a LAN or LAN segment" is more complicated than it needs to be. Just say "a mixing segment".

SuggestedRemedy

in MPoE Environment A/B/C, replace

""a LAN" or "a LAN or LAN segment" "

With

"a mixing segment"

Response

Response Status C

ACCEPT.

CI 189 SC 189.6.1.1.1 P 126 L 15 # 41

Jones, Peter

Cisco Systems

Comment Type ER

Comment Status A

EZ

In "189.6.1.1.1 MPoE Environment A requirements", the text includes "isolation requirements of the MAU or PHY" and "isolation requirement of the MAU/PHY"
T1M doesn't include an MAU.

SuggestedRemedy

in MPoE Environment A/B/C, replace

" the MAU or PHY" or "the MAU/PHY"

With

"the PHY"

Response

Response Status C

ACCEPT.

CI 189 SC 189.7 P 127 L 17 # 103

Ran, Adele

Cisco

Comment Type E

Comment Status A

Editorial

The title "Environmental" seems lacking. This subclause covers more than environmental things. Installation and labeling are not what people consider environmental.
Also in 188.10 "Environmental specifications".

SuggestedRemedy

Find the correct heading or restructure this subclause.

Align with 188.10.

Response

Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #182.

Replace, "189.7 Environmental" with "189.7 Environmental specifications"

(Editor's note: Structure of power clauses is slightly different than structure of PHY clauses, as labeling includes environmental attributes it is included in the environment section. This parallels clauses 33 and 145.)

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CI 189 SC 189.7 P 127 L 17 # 182

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

Comment Type E Comment Status A Editorial

Align clause header with 188.10 "Environmental specifications"

SuggestedRemedy

Replace, "189.7 Environmental" with "189.7 Environmental specifications"

Response Response Status C

ACCEPT.

CI 189 SC 189.7.2 P 127 L 34 # 104

Ran, Adeo Cisco

Comment Type E Comment Status A EZ

The list has both dashes and letters.
Letters don't contribute here.

SuggestedRemedy

Delete the letters.

Response Response Status C

ACCEPT.

CI 189 SC 189.7.2 P 127 L 41 # 143

Cox, Ian Broadcom

Comment Type E Comment Status A EZ

Installati looks like it should be Installation

SuggestedRemedy

change installatio to installation

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #105.

Replace paragraph on L40-44, P127 with:

"Such electrical safety hazards should be avoided or appropriately protected for proper network installation and performance. In addition to provisions for proper handling of these conditions in an operational system, special measures should be taken to verify that safety features are not negated during installation of a new network or during modification of an existing network."

CI 189 SC 189.7.2 P 127 L 41 # 233

Jones, Chad Cisco Systems, Inc.

Comment Type ER Comment Status A EZ

incomplete word: installati

SuggestedRemedy

change to installation

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #105.

Replace paragraph on L40-44, P127 with:

"Such electrical safety hazards should be avoided or appropriately protected for proper network installation and performance. In addition to provisions for proper handling of these conditions in an operational system, special measures should be taken to verify that safety features are not negated during installation of a new network or during modification of an existing network."

CI 189 SC 189.7.2 P 127 L 42 # 105

Ran, Adeo Cisco

Comment Type E Comment Status A EZ

"Installati" on the second line and "on" on the third line indicate an interesting clerical error.

The whole paragraph seems to be garbled in comparison to the similar text in the base standard, e.g. in 145.6.2:

"Such electrical safety hazards should be avoided or appropriately protected against for proper network installation and performance. In addition to provisions for proper handling of these conditions in an operational system, special measures should be taken to verify that the intended safety features are not negated during installation of a new network or during modification of an existing network."

SuggestedRemedy

Correct the text to what it should be, with editorial license.

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace paragraph on L40-44, P127 with:

"Such electrical safety hazards should be avoided or appropriately protected for proper network installation and performance. In addition to provisions for proper handling of these conditions in an operational system, special measures should be taken to verify that safety features are not negated during installation of a new network or during modification of an existing network."

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

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SC 189.7.2

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CI 189 SC 189.7.2 P 127 L 42 # 234

Jones, Chad Cisco Systems, Inc.

Comment Type ER Comment Status A EZ

extra and/or missing word(s): "...are not negated during installation on and performance..."
not 100% sure what we are trying to say so I'm gonna guess in my proposed remedy.

SuggestedRemedy

change to: "...are not negated during installation or on performance..."

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #105.

Replace paragraph on L40-44, P127 with:

"Such electrical safety hazards should be avoided or appropriately protected for proper network installation and performance. In addition to provisions for proper handling of these conditions in an operational system, special measures should be taken to verify that safety features are not negated during installation of a new network or during modification of an existing network."

CI 189 SC 189.7.2 P 127 L 44 # 235

Jones, Chad Cisco Systems, Inc.

Comment Type ER Comment Status A EZ

last sentence of this paragraph isn't complete and "systemof" needs a space. "In addition to provisions for proper handling of these conditions in an operational systemof a new network or during modification of an existing network."
again, not 100% sure what we are trying to say, but I'll guess.

SuggestedRemedy

change to: "In addition, provisions should be take for proper handling of these conditions in an operational system of a new network or during modification of an existing network."

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #105.

Replace paragraph on L40-44, P127 with:

"Such electrical safety hazards should be avoided or appropriately protected for proper network installation and performance. In addition to provisions for proper handling of these conditions in an operational system, special measures should be taken to verify that safety features are not negated during installation of a new network or during modification of an existing network."

CI 189 SC 189.7.2 P 127 L 44 # 144

Cox, Ian Broadcom

Comment Type E Comment Status A EZ

Words joined together systemof

SuggestedRemedy

change systemof to system of

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #105.

Replace paragraph on L40-44, P127 with:

"Such electrical safety hazards should be avoided or appropriately protected for proper network installation and performance. In addition to provisions for proper handling of these conditions in an operational system, special measures should be taken to verify that safety features are not negated during installation of a new network or during modification of an existing network."

CI 189 SC 189.7.3 P 128 L 1 # 236

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A EZ

"... and electrically secure in a..." "secure" needs to be "secured"

SuggestedRemedy

change to "secured"

Response Response Status C

ACCEPT.

CI 189 SC 189.7.3 P 128 L 2 # 237

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A EZ

missing a word: "...should be routed in way to provide..."

SuggestedRemedy

change to "...should be routed in a way to provide..."

Response Response Status C

ACCEPT.

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CI 189 SC 189.7.3 P 128 L 6 # 180
 Maguire, Valerie Copperopolis; aff'l w/ CME Consulting and Cisco
 Comment Type T Comment Status A Environmental
 This is a generalization, so it's really not helpful. Automotive application system designers understand their environmental requirements.
 SuggestedRemedy
 Delete, "Automotive environmental conditions are generally more severe than those found in many commercial and industrial environments."
 Response Response Status C
 ACCEPT.

CI 189 SC 189.7.4 P 128 L 11 # 181
 Maguire, Valerie Copperopolis; aff'l w/ CME Consulting and Cisco
 Comment Type T Comment Status A Editorial
 I think we mean current carrying capacity (i.e., ampacity). Sentence could be more succinct.
 SuggestedRemedy
 Replace "It is possible that the current carrying capability of a cabling cross-connect may be exceeded by the current capacity of the MPSE. " with "The current capacity of the MPSE may exceed the current carrying capacity of a cabling cross-connect."
 Response Response Status C
 ACCEPT IN PRINCIPLE.

Replace: "It is possible that the current carrying capability of a cabling cross-connect may be exceeded by the current capacity o the MPSE. "

with:
 "The current capacity of the MPSE should not exceed the current carrying capacity of a cabling cross-connect."

CI 189 SC 189.7.8 P 129 L 5 # 107
 Ran, Adeo Cisco
 Comment Type T Comment Status A Editorial
 Item a lists quantities as unit names ("in terms of Watts, Amps"). This seems to contrast the style manual: "Unit symbols may not be used to stand for the quantity being measured" (14.4). Also "Amps" is not a proper unit.
 SuggestedRemedy
 Rephrase this sentence to use the quantities rather than the units.
 Response Response Status C
 ACCEPT IN PRINCIPLE.

Split item a into 3 list items (note the letters will change...) from:
 a) Power classification and power level in terms of maximum current drain over each compatible operating voltage range both in terms of Watts, Amps, and Unit Loads, applies for MPD only

to

- a) Maximum continuous power supplied or consumed in units of Watts
- b) Maximum current supply capacity or consumption in units of Amperes
- c) For MPDs only, Unit Loads for each compatible operating voltage range

Move item "f" System type to the top of list, and reorder/relabel the lettered list. (correlate contents of "system type" label with comment 194)

Put a period at the end of the last item in the list.

CI 189 SC 189.7.8 P 129 L 5 # 106
 Ran, Adeo Cisco
 Comment Type E Comment Status A EZ
 The items in the list do not seem to have a logical order. For example I would expect item c to be the last one.
 This is a lettered list, which seem to indicate the order is important.
 SuggestedRemedy
 Reorder the list based on importance of the information (Suggestion: using the current letters - b, d, g, f, a, e, c).
 Consider making it a dashed list.
 Response Response Status C
 ACCEPT IN PRINCIPLE.

Re-order the list as propose in the Remedy, but leave the list lettered.

(Editor's note: this follows style of clause 33)

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Cl 189 SC 189.7.8 P 129 L 12 # 108

Ran, Adeo Cisco

Comment Type TR Comment Status R Editorial

"Type 0" and "Type 1" seem to apply to MPDs rather than to systems. See 189.5.1.

SuggestedRemedy

Change "System type" to "MPD type".

Response Response Status W

REJECT.

This applies also to the MPSE type. See Table 189-1, System power types.

Cl 189 SC 189.8.3 P 131 L 6 # 109

Ran, Adeo Cisco

Comment Type E Comment Status A MPSE

I assume a device conforming to clause 189 is either MPSE or MPD, both not both (although I didn't find it not stated anywhere).

The PICS should reflect that. See 21.6.2 for the notation.

SuggestedRemedy

Change the status of items MPSE and MPD to O/1.

Response Response Status C

ACCEPT.

Cl 189 SC 189.8.4.1 P 131 L 20 # 110

Ran, Adeo Cisco

Comment Type E Comment Status A PICS

The items in 189.8.4.1 appear as mandatory, but they do not apply to MPSEs and MPDs - only to mixing segments (installation). They should be made conditional on a major option (which is currently missing).

SuggestedRemedy

Add a major option for mixing segment and make these items conditional on it. Apply also in 189.8.4.4 where necessary.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add Major Option, "*INS-MIX | Installation / Mixing segment | | Items marked with *INS-MIX include installation practices and cabling specifications for mixing segments and are not applicable to a PHY manufacturer. | O | Yes[] No []"

at 189.8.4.4

Change: "MS1 and MS2 Status" to: "INS-MIX:M"

Cl 189 SC 189.8.4.3 P 133 L 17 # 112

Ran, Adeo Cisco

Comment Type ER Comment Status A EZ

Typo "wiht"

SuggestedRemedy

change to "with"

Response Response Status W

ACCEPT.

Cl 189 SC 189.8.4.4 P 133 L 29 # 113

Ran, Adeo Cisco

Comment Type E Comment Status R PICS

Some items seem to be conditional on Environment A, B, or C.

SuggestedRemedy

Add major options for environment and make these items conditional on the corresponding options.

Response Response Status C

REJECT.

Commenter provides insufficient information for a remedy. Note that Clauses 33 and 145 which have similar environment language does not define major options or similarly condition the requirements.

Cl 00 SC Contents P 14 L 1 # 277

Dawe, Piers Nvidia

Comment Type E Comment Status A EZ

Missing header

SuggestedRemedy

Include section header ("Contents")

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

Cl 00
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CI 00	SC Contents	P 14	L 17	# 279
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Dawe, Piers

Nvidia

Comment Type	E	Comment Status	A	EZ
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5th level subclause numbers and titles are run together. Also 4th level in Clause 45

SuggestedRemedy

Set the tab stops to allow more space for the numbers

Response	Response Status	C
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ACCEPT IN PRINCIPLE.

Editor to replace current 8023xxTOC.fm file with 8023xxTOC.fm, version_5p4.

CI 00	SC Contents	P 14	L 27	# 278
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Dawe, Piers

Nvidia

Comment Type	E	Comment Status	A	EZ
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Some subclause numbers and titles are run together

SuggestedRemedy

Fix the formatting

Response	Response Status	C
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ACCEPT IN PRINCIPLE.

Accommodated by comment #279.

Editor to replace current 8023xxTOC.fm file with 8023xxTOC.fm, version_5p4.

CI 00	SC Contents	P 15	L 47	# 280
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Dawe, Piers

Nvidia

Comment Type	E	Comment Status	A	EZ
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Page numbers for some clauses are joined to clause title rather than being on the left

SuggestedRemedy

Fix the formatting

Response	Response Status	C
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ACCEPT IN PRINCIPLE.

Editor to replace current 8023xxTOC.fm file with 8023xxTOC.fm, version_5p4 and confirm that page numbers are tabbed from clause headers.

CI J	SC J.1	P 135	L 13	# 111
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Ran, Adeo

Cisco

Comment Type	ER	Comment Status	A	Editorial
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Removing the subclause references is not a good idea. This Annex is referenced from many places and many readers may not know what PI or MPI are and where the "relevant specific requirements associated with option c" can be found.

SuggestedRemedy

Keep the references to clause 33 and 145, add references to clause 189 as appropriate, with editorial license.

Response	Response Status	W
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ACCEPT IN PRINCIPLE.

Change J.1 NOTE edit to read:

"NOTE 1 - If the MDI is also a Clause 33 or Clause 145 PI then see 33.4.1 or 145.4.1 for specific requirements associated with option c). If the MDI is also an MPI then see 189.6.1.1 for specific requirements associated with option c)."

CI 00	SC Keywords	P 3	L 5	# 272
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Dawe, Piers

Nvidia

Comment Type	E	Comment Status	R	Editorial
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IEEE 802.3cg is not mentioned anywhere in the draft

SuggestedRemedy

Use it or delete it

Response	Response Status	C
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REJECT.

This amendment builds on the 10BASE-T1S specification of IEEE 802.3cg. There is no requirement that a keyword must appear in the amendment text. Note that PoDL is a keyword and isn't used in the document, either. These are all keywords that potential users of this document might be searching on.

IEEE P802.3da D2.0 10 Mbps Multidrop Enhancements

CI 00	SC Patents	P 7	L 9	# 276
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Dawe, Piers

Nvidia

Comment Type	E	Comment Status	R	EZ
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A blue URL should be a link

SuggestedRemedy

Make it active. Get the template fixed if that is the issue.

Response	Response Status	C
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REJECT.

The link is active. You must click on the link - hovering over it does not show a preview of the link address (e.g., IEEE Xplore on L39, P6) because the displayed text is the same as the link address. It works the same as the link in the footer (L54, P7). No change needed.

CI 00	SC Photocopies	P 6	L 23	# 274
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Dawe, Piers

Nvidia

Comment Type	E	Comment Status	R	EZ
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A blue URL should be a link

SuggestedRemedy

Make it active. Get the template fixed if that is the issue.

Response	Response Status	C
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REJECT.

The link is active. You must click on the link - hovering over it does not show a preview of the link address (e.g., IEEE Xplore on L39, P6) because the displayed text is the same as the link address. It works the same as the links in the footer (L53, P6 and L54, P6). No change needed.

CI 00	SC Updating	P 6	L 39	# 275
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Dawe, Piers

Nvidia

Comment Type	E	Comment Status	A	EZ
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The link behind "IEEE Xplore" is <https://ieeexplore.ieee.org/browse/standards/collection/ieee/> which is footnote 3.

The link behind "contact IEEE" is <https://standards.ieee.org/content/ieee-standards/en/about/contact/index.html> which is footnote 2.

SuggestedRemedy

Move the pointer for footnote 3 to immediately follow "IEEE Xplore".

A pointer for footnote 2 could immediately follow "contact IEEE".

Get the template fixed.

Response	Response Status	C
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ACCEPT IN PRINCIPLE.

(Editor's note: the link in footnote 3 is associated with 'IEEE Xplore', not 'contact IEEE'.)

Editor to consult with the owner (TBD) of the 802_3xx_D0p1_version_5p4 template and implement recommended remedy.