

IEEE P802.3da D3.0 10 Mb/s Single Pair Multidrop Segment Enhancements Initial Sponsor ballot comment

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| CI 30 | SC 30.2.5 | P28 | L4 | # I-1 |
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Maguire, Valerie Cisco,CME Consulting,Copperopolis

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| Comment Type | E | Comment Status | D | Editorial |
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Clunky and excessively wordy language with grammatical errors (e.g., "For a managed MPSEs"). There's also no PICS for this item, so removing the "shall" is probably in order. PSE should be MPSE at the end of line 6.

SuggestedRemedy

Replace, "For managed MPSEs, the MPSE Basic Package is mandatory and the MPSE Recommended Package is optional. For a managed MPSEs to be conformant to this standard, it shall fully implement the PSE Basic Package."
with, "Full implementation of the MPSE Basic Package is required for managed MPSEs. Implementation of the MPSE Recommended Package is optional."

Replace, "For managed MPDs, the MPDs Basic Package is mandatory and the MPD Recommended Package is optional. For a managed MPD to be conformant to this standard, it shall fully implement the MPD Basic Package."
with "Full implementation of the MPD Basic Package is required for managed MPDs. Implementation of the MPD Recommended Package is optional."

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| Proposed Response | Response Status | W |
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PROPOSED ACCEPT.

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| CI 45 | SC 45.2.1.214.2 | P46 | L35 | # I-2 |
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Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

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| Comment Type | E | Comment Status | D | Editorial |
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the text says to see the table for the mapping of bits... but to what. Could be clearer

SuggestedRemedy

change "mapping of bits." to "mapping of bits to selected PMA/PMD type."

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| Proposed Response | Response Status | W |
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PROPOSED ACCEPT IN PRINCIPLE.

Editor's note: (Change remedy to make "types" plural)

Change "mapping of bits." to "mapping of bits to selected PMA/PMD types."

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| CI 45 | SC 45.2.1.234.1 | P47 | L21 | # I-3 |
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Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

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| Comment Type | T | Comment Status | D | Editorial |
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The phrase "the 10BASE-T1M/10BASE-T1S PMA" suggests a single device with that common name, whereas what is meant is "a 10BASE-T1M or 10BASE-T1S PMA"

SuggestedRemedy

Replace "the 10BASE-T1M/10BASE-T1S PMA" with "a 10BASE-T1M or 10BASE-T1S PMA" at P47 L21, P47 L42, P48 L11, P48 L42 and P49 L14. (note this is not a global replace because the register is still called "the 10BASE-T1M/10BASE-T1S PMA"... register...

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| Proposed Response | Response Status | W |
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PROPOSED ACCEPT

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| CI 45 | SC 45.5.3.3 | P52 | L53 | # I-4 |
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Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

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| Comment Type | E | Comment Status | D | PICS |
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PMA PICS for existing 10BASE-T1S registers have not been updated to reflect they also apply to 10BASE-T1M PMAs

SuggestedRemedy

Add 45.5.3.3 to the draft, and update the following PICS with the new register name (10BASE T1M/10BASE-T1S for 10BASE-T1S; or say 10BASE-T1M or 10BASE-T1S PMA where it refers to the 10BASE-T1S PMA):
MM179, MM180,MM182, MM185, MM186, MM187, MM194, (not MM195), MM197, MM201, and MM202

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| Proposed Response | Response Status | W |
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PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: No change to the addition proposed by the commenter)

Grant Editorial license to write Editing Instruction, pull in appropriate clause headers, and sho change marks. Add 45.5.3.3 to the draft, and update the following PICS with the new register name (10BASE-T1M/10BASE-T1S for 10BASE-T1S; or say 10BASE-T1M or 10BASE-T1S PMA where it refers to the 10BASE-T1S PMA): MM179, MM180,MM182, MM185, MM186, MM187, MM194, (not MM195), MM197, MM201, and MM202

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Cl 45 **SC 45.5.3.3** **P52** **L53** # I-5

Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

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

Need new PICS for 45.2.1.235.3 related to 10BASE-T1M

SuggestedRemedy

Add 45.5.3.3 to the draft, and insert new PICS item MM195a after PICS MM195, with feature: For 10BASE-T1M PMAs, bit 1.2297.10 is always set to 1 and writing bit 1.2297.10 has no effect. (subclause 45.2.1.235.3, blank Value/Comment, Status: PMA:M, Yes[]/N/A[])

Proposed Response **Response Status W**

PROPOSED ACCEPT IN PRINCIPLE

(Editor's note: No change to the addition proposed by the commenter)

Grant Editorial license to write Editing Instruction, pull in appropriate clause headers, and sho change marks. Add 45.5.3.3 to the draft, and insert new PICS item MM195a after PICS MM195, with feature: For 10BASE-T1M PMAs, bit 1.2297.10 is always set to 1 and writing bit 1.2297.10 has no effect. (subclause 45.2.1.235.3, blank Value/Comment, Status: PMA:M, Yes[]/N/A[])

Cl 45 **SC 45.2.3.72.1** **P50** **L41** # I-6

Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

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

The phrase "the 10BASE-T1M/10BASE-T1S PCS" suggests a single device with that common name, whereas what is meant is "a 10BASE-T1M or 10BASE-T1S PCS"

SuggestedRemedy

Replace "the 10BASE-T1M/10BASE-T1S PCS" with "a 10BASE-T1M or 10BASE-T1S PCS" at P50 L41 and P51 L7 (note this is not a global replace because the register is still called "the 10BASE-T1M/10BASE-T1S PCS"...register...

Proposed Response **Response Status W**

PROPOSED ACCEPT

Cl 45 **SC 45.5.3.6** **P52** **L54** # I-7

Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

Comment Type E **Comment Status D** **PICS**

PCS PICS for existing 10BASE-T1S registers have not been updated to reflect they also apply to 10BASE-T1M PCSs

SuggestedRemedy

Add 45.5.3.6 to the draft, and update the following PICS with the new register name (10BASE T1M/10BASE-T1S for 10BASE-T1S; or say 10BASE-T1M or 10BASE-T1S PCS where it refers to the 10BASE-T1S PCS): RM168, RM169, RM171, RM174, RM175, RM182, RM183, and RM184.

Proposed Response **Response Status W**

PROPOSED ACCEPT IN PRINCIPLE

(Editor's note: No change to the addition proposed by the commenter)

Grant Editorial license to write Editing Instruction, pull in appropriate clause headers, and sho change marks. Add 45.5.3.6 to the draft, and update the following PICS with the new register name (10BASE-T1M/10BASE-T1S for 10BASE-T1S; or say 10BASE-T1M or 10BASE-T1S PCS where it refers to the 10BASE-T1S PCS):RM168, RM169, RM171, RM174, RM175, RM182, RM183, and RM184.

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Cl 45 SC 45.2.3.72.3 P51 L19 # I-8

Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

Comment Type T Comment Status D Management

The text of 45.2.3.72.3 for duplex mode should be parallel with the text for the multidrop mode. Not only is the bit ignored, but for 10BASE-T1M PHYs it should never be able to be set to one.

SuggestedRemedy

Replace "This bit shall be ignored for the 10BASE-T1M PCS." with "This bit shall be ignored for the 10BASE-T1M PCS, and always set to zero. For the 10BASE-T1M PCS, writing to bit 3.2291.8 shall have no effect."

Add 45.5.3.6 to the draft, and insert new PICS item RM179a after PICS RM179, with feature: For 10BASE-T1M PMAs, bit 3.2291.8 is ignored and always set to zero writing bit 3.2291.8 has no effect. (subclause 45.2.3.72.3, blank Value/Comment, Status: PCS:M, Yes[]/N/A[])

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE

(Editor's note: Remove comma in replaced sentence. No change to the addition proposed by the commenter)

Replace "This bit shall be ignored for the 10BASE-T1M PCS."

with "This bit shall be ignored for the 10BASE-T1M PCS and always set to zero. For the 10BASE-T1M PCS, writing to bit 3.2291.8 shall have no effect."

Grant Editorial license to write Editing Instruction, pull in appropriate clause headers, and show change marks. Add 45.5.3.6 to the draft, and insert new PICS item RM179a after PICS RM179, with feature: For 10BASE-T1M PMAs, bit 3.2291.8 is ignored and always set to zero writing bit 3.2291.8 has no effect. (subclause 45.2.3.72.3, blank Value/Comment, Status: PCS:M, Yes[]/N/A[])

Cl 45 SC 45.5.3.6 P52 L54 # I-9

Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

Comment Type E Comment Status D Management

If the comment to change 45.2.3.72.3 is not accepted, a PICS is still needed for the existing new shall in 45.2.3.72.3

SuggestedRemedy

Add 45.5.3.6 to the draft, and insert new PICS item RM179a after PICS RM179, with feature: For 10BASE-T1M PMAs, bit 3.2291.8 is ignored (subclause 45.2.3.72.3, blank Value/Comment, Status: PCS:M, Yes[]/N/A[])

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE

(Editor's note: Consider comment #8 first)

Grant Editorial license to write Editing Instruction, pull in appropriate clause headers, and show change marks. Add 45.5.3.6 to the draft, and insert new PICS item RM179a after PICS RM179, with feature: For 10BASE-T1M PMAs, bit 3.2291.8 is ignored (subclause 45.2.3.72.3, blank Value/Comment, Status: PCS:M, Yes[]/N/A[])

Cl 45 SC 45.5.3.6 P52 L54 # I-10

Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

Comment Type E Comment Status D PICS

A new PICS is needed for the shall added in 45.2.3.73.1 on bit 3.2292.7

SuggestedRemedy

Add 45.5.3.6 to the draft, and insert new PICS item RM182a after PICS RM182 (for 45.2.3.73.1). Feature: "PCS fault bit reports 0 when read for 10BASE-T1M and 10BASE-T1S PHYs in multidrop mode." (subclause 45.2.3.73.1, Value/Comment blank, Status: PCS:M, Yes[] N/A[])

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE

Grant Editorial license to write Editing Instruction, pull in appropriate clause headers, and show change marks. Add 45.5.3.6 to the draft, and insert new PICS item RM182a after PICS RM182 (for 45.2.3.73.1). Feature: "PCS fault bit reports 0 when read for 10BASE-T1M and 10BASE-T1S PHYs in multidrop mode." (subclause 45.2.3.73.1, Value/Comment blank, Status: PCS:M, Yes[] N/A[])

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CI 79 SC 79.3.9 P54 L20 # I-11

Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

Comment Type E Comment Status D EZ

There is an extra ")" after "including Tables)"

SuggestedRemedy

change "(including Tables)), and" to "(including Tables), and"

Proposed Response Response Status W

PROPOSED ACCEPT

CI 79 SC 79.3.9.2 P55 L34 # I-12

Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

Comment Type E Comment Status D EZ

The field is the PLCA nodeID field, not the PLCA nodeid field.

SuggestedRemedy

change nodeid to nodeID at P55 L34

Proposed Response Response Status W

PROPOSED ACCEPT

CI 79 SC 79.3.10 P55 L49 # I-13

Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

Comment Type TR Comment Status D DTE

The use of DTE is mixed in this draft, and generally unnecessary. It is complicated by obviously incorrect usages, such as "DTE are either MPSE or MPD MPIs" - DTE are not MPIs. They may be associated with either MPSE or MPD MPIs. The treatment covers multiple subclauses, but I will file separate comments to ease consideration. In cases of LLDP, what is being referred to appears to be more accurately the MAC client. Additionally, the associated group isn't defined by the mixing segment, but rather by the nearest bridge group. This group of comments is marked by the tag <DTE_GROUP>. They are all one issue, but for tracking are separated into multiple comments.

SuggestedRemedy

Change P55 L49-50 (1st sentence of 79.3.10) from:

The MPoE MPSE Status TLV allows DTEs to advertise capabilities and status for each of its associated

MPSE MPIs to other DTEs on the mixing segment.

to

The MPoE MPSE Status TLV allows a MAC client to advertise capabilities and status for each of its associated

MPSE MPIs to other MAC clients on the same nearest bridge group.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Clause 6 'Principles of operation' of IEEE Std 802.1AB-2016 'Station and Media Access Control Connectivity Discovery', says 'LLDP is a link layer protocol that allows an IEEE 802 LAN station to advertise the capabilities and current status of the system associated with an MSAP.' I believe that an MSAP, a 'Media access control service access point', is a MAC service interface in IEEE 802.3 terminology.

It then goes on to say that 'The MSAP provides the MAC service to an LLC Entity, and that LLC Entity provides an LSAP to an LLDP agent that transmits and receives information to and from the LLDP agents of other stations attached to the same LAN.'. From an IEEE 802.3 perspective, I believe this means that the MAC service interface provides the MAC service to a MAC Client, an LLC Entity, and this in turn provides a link service access point (LSAP) to the LLDP agent that transmits and receives information to and from the LLDP agents of other stations attached to the same LAN. Based on this, it seems that LLDP is not a MAC client, strictly speaking.

Rather than include the definition of the collection of MPIs, such as '... MAC client to advertise capabilities and status for each of its associated MPSE MPIs ...', in each TLV description, a term should be defined for the collection of MPIs, and this should be used in the TLV descriptions instead.)

[1] Add the definition of MPI Group as follows:

MPI Group: One or more MPSE(s) or one or more MPD(s) that use a single LLDP MAC

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service access point (MSAP), associated with a single TCI, to advertise capabilities and status using LLDP.

{2} Change the 1st sentence of 79.3.10 to read:

The MPoE MPSE Status TLV allows a station to advertise the capabilities and current status for each of the MPSEs in an MPI Group to other stations on the same nearest bridge group.

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| Cl 79 | SC 79.3.10 | P55 | L50 | # I-14 |
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Zimmerman, George

Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

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| Comment Type | TR | Comment Status | D | DTE |
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The LLDP clause (79) is not the appropriate place for a requirement on whether a DTE may have a mixture of MPSE & MPD MPIs, and the requirement is correctly stated in clause 189 where it belongs. <DTE_GROUP>

SuggestedRemedy

Delete "A DTE shall have either MPSE or MPD MPIs, not a mix of both. DTE are either MPSE or MPD MPIs."

Delete PICS item MPSE1 in 79.5.14 related to this requirement. (P65 L25)

Delete PICS item MPD1 in 79.5.15 related to this requirement (P66 L6)

Proposed Response

Response Status W

PROPOSED ACCEPT.

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| Cl 79 | SC 79.3.10 | P56 | L4 | # I-15 |
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Zimmerman, George

Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

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| Comment Type | ER | Comment Status | D | DTE |
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The tables that follow rely on the MPI index, but it is not defined until 189.1.3.1, and not at all in clause 79. The text of 189.1.3.1 would be better positioned here. Much of this text relates to the use of DTE, so it needs to be adjusted. Similarly, related PICS need to be adjusted if this comment is accepted. <DTE_GROUP>

SuggestedRemedy

Delete the text from the 2nd paragraph of 189.1.3.1 (P134 L5) through the end of 189.1.3.1 (P134 L20).

Add the following, based on that text (with the usage of DTE adjusted) as a new 3rd paragraph of 79.3.10 (following "to achieve 16-bit alignment") (see P134 for formatting of indentation):

"The set of MPIs associated with a MAC client are identified within LLDP MPoE TLVs using an MPI pair index. MPI pair index has the following semantics:

Type: 8 bit unsigned integer

Values:

0: the MPI that connects to the same physical media as the MAC client

>0: separate MPIs

The set of MPIs associated with a MAC client shall meet the following criteria:

a) MPIs for a given MAC client are either all MPSEs, or all MPDs.

b) Unless stated otherwise, all other MPI attributes for a given DTE are independent. This includes:

MPI type

MPI capabilities and status

MPI requested and granted power"

In 79.5.14, change PICS item MPSE3 Value/comment to "Table of per MAC client entries, see Table 79-22c" (P65 L32)

Proposed Response

Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: See comment #13.

In addition, IEEE P802.3da subclause 1.4.405b defined 'Multidrop Power Interface (MPI)' as 'The mechanical and electrical interface between the Multidrop Power Sourcing Equipment (MPSE) ... and the transmission medium, IEEE P802.3da subclause 1.4.558a defines 'Trunk Connection Interface (TCI): an MDI for shared transmission medium for single pair Ethernet', and IEEE Std 802.3 subclause 1.4.395 defines 'Medium Dependent Interface (MDI)' as 'The mechanical and electrical ... interface between the transmission medium and the ... PHY ...'. As a result, the TCI associated with the MAC service interface may also be an MPI or may have one or more separate associated MPIs. This is similar to 4-pair PoE, where the PI is the MDI for an endpoint PSE, and the PI is physically separate from the MDI for a midspan (see IEEE Std 802.3-2022 subclause 145.1.2).)

Based on the above:

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[1] Delete the text from the 2nd paragraph of 189.1.3.1 through the end of 189.1.3.1.

[2] Add the following text as a new 3rd paragraph of 79.3.10:

The set of MPSEs in an MPI Group is identified within a MPoE MPSE Status TLV using an MPI pair index. MPI pair index has the following semantics:

Type: 8-bit unsigned integer

Values:

- 0: the MPSE is the TCI associated with the MPI Group
- >0: the MPSE is physically separate from the TCI associated with the MPI Group

The set of MPSEs in an MPI Group shall meet the following criteria:

- a) An MPI Group is either all MPSEs or all MPDs.
- b) Unless stated otherwise, all other MPI attributes for a given MPI Group are independent. This includes:

- MPSE type
- MPSE capabilities and status
- MPSE requested and granted power

[3] Add the following text as a new 3rd paragraph of 79.3.11:

The set of MPDs in an MPI Group is identified within a MPoE MPD Status TLV using an MPI pair index. MPI pair index has the following semantics:

Type: 8-bit unsigned integer

Values:

- 0: the MPD is the TCI associated with the MPI Group
- >0: the MPD is physically separate from the TCI associated with the MPI Group

The set of MPDs in an MPI Group shall meet the following criteria:

- a) An MPI Group is either all MPSEs or all MPDs.
- b) Unless stated otherwise, all other MPI attributes for a given MPI Group are independent. This includes:

- MPD type
- MPD capabilities and status
- MPD requested and granted power

[4] Change the PICS item MPSE3 Value/comment in subclause 79.5.14 to 'Table of per MPI Group entries, see Table 79-22c'

[5] Change the PICS item MPD3 Value/comment in subclause 79.5.15 to 'Table of per MPI Group entries, see Table 79-22l'

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| CI 79 | SC 79.3.10 | P56 | L37 | # I-16 |
| Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co | | | | |
| Comment Type | ER | Comment Status | D | DTE |
| MPI pair index stands alone, and "within the DTE" is incorrectly used. <DTE_GROUP> | | | | |

SuggestedRemedy

delete "within the DTE" in Table 79-22d.
In 79.5.14, change PICS item MPSE4 row, deleting "DTE" in the Feature, and "within the associated DTE" in the Value/Comment.

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| PROPOSED ACCEPT. | | |

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| CI 79 | SC 79.3.11 | P58 | L20 | # I-17 |
| Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co | | | | |
| Comment Type | TR | Comment Status | D | DTE |
| This is a parallel comment to the one on 79.3.10 line 49. DTE isn't meant here - MAC client is, and the mixing segment should be more correctly the nearest bridge group. <DTE_GROUP> | | | | |

SuggestedRemedy

change "DTE" to "MAC client" in 2 locations in the 1st sentence of 79.3.11
change "on the mixing segment" to "in the same nearest bridge group" in the 1st sentence of 79.3.11.
In 79.5.15, change PICS item MPD3 Value/comment to "Table of per MAC client entries, see Table 79-22l" (P66 L12)

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| Proposed Response | Response Status | W |
| PROPOSED ACCEPT IN PRINCIPLE. | | |

(editor's note: See comment #13.)

[1] Change the 1st sentence of 79.3.11 to read:

The MPoE MPD Status TLV allows a station to advertise the capabilities, current status and requests for each of the MPDs in an MPI Group to other stations on the same nearest bridge group.

[2] Change the PICS item MPD3 Value/comment in subclause 79.5.15 to read 'Table of per MPI Group entries, see Table 79-22l'.

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| CI 79 | SC 79.3.11 | P58 | L27 | # I-18 |
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Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

Comment Type **ER** Comment Status **D** DTE

The MPI pair index needs to be referenced in connection with the tables that follow. Text describing it has been introduced in a comment to 79.3.10. <DTE_GROUP>

SuggestedRemedy

Insert the following new 3rd paragraph to 79.3.11, prior to the tables:

"MPIs associated with a MAC client are identified by their MPI pair index, as defined in 79.3.10."

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #15.

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| CI 79 | SC 79.3.11 | P59 | L31 | # I-19 |
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Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

Comment Type **ER** Comment Status **D** DTE

MPI pair index stands alone, and "within the DTE" is incorrectly used. <DTE_GROUP>

SuggestedRemedy

delete "within the DTE" in Table 79-22m.

In 79.5.15 (P66 L14) PICS item MPD4:

Delete "DTE" in Feature and "within the associated DTE" in Value/Comment

Proposed Response Response Status **W**

PROPOSED ACCEPT.

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| CI 79 | SC 79.3.12 | P62 | L15 | # I-20 |
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Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

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

This is a parallel comment to the one on 79.3.10 line 49. DTE isn't meant here - MAC client is, and the mixing segment should be more correctly the nearest bridge group. <DTE_GROUP>

SuggestedRemedy

change "DTE" to "MAC client" in 2 locations in the 1st sentence of 79.3.12

change "on the mixing segment" to "in the same nearest bridge group" in the 1st sentence of 79.3.12.

In 79.5.16 (P67 L13) PICS item MPA3 Value/Comment, change "target DTE" to "target MAC client"

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: See comment 13.)

[1] Change the 1st sentence of 79.3.12 to read:

The MPoE Power Allocated TLV allows a station to advertise power allocation information for each of the MPSEs in an MPI Group to other stations on the same nearest bridge group.

[2] Change the text 'target DTE' in the PICS item MPA3 Value/Comment in subclause 79.5.16 to read 'target MPI Group'.

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| CI 79 | SC 79.3.12 | P62 | L18 | # I-21 |
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Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co

Comment Type **ER** Comment Status **D** DTE

MAC address is sufficient. DTE is not needed to modify MAC address in the text or table 79-22y, nor is it needed for MPI pair index.<DTE_GROUP>

SuggestedRemedy

delete DTE in the text at P62 L18 (one instance), and in the 1st two body rows of Table 79-22y (3 instances)

in 79.5.16 Delete "DTE" in Feature of PICS items MPA3 and MPA4, and delete "within the associated DTE" in Value/Comment of PICS item MPA4. (P67 L12, and L15)

Proposed Response Response Status **W**

PROPOSED ACCEPT.

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CI 189 SC 189.1 P132 L11 # I-22
Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
Comment Type E Comment Status D Editorial
the "normal association" is really something they may be associated with.
SuggestedRemedy
Change "are normally associated with" to "may be associated with"
Proposed Response Response Status W
PROPOSED ACCEPT

CI 189 SC 189.1 P132 L11 # I-23
Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
Comment Type TR Comment Status D DTE
The association isn't with a DTE, it is with a MAC client and its physical interface to the medium (which is what the example 10BASE-T1M TCI refers to) - not the DTE...
<DTE_GROUP>
SuggestedRemedy
Change "with a DTE" to "with a MAC client and its physical interface to the medium"
Change "A given DTE may have multiple" to "A given MAC client may have multiple" at line 1:
Change "without an associated DTE" to "without an associated MAC client" at line 13.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: See comments 15, 28, 29, and 30.

In addition, IEEE P802.3da subclause 1.4.405b defines the expansion of MPI as 'Multidrop Power Interface', not 'MPoE interface'.)

Change the last two sentences of the first paragraph of subclause 189.1 to read:

The Multidrop Power Interface (MPI) serves as the mechanical and electrical interface between the MPSE or MPD and the power transmission medium, as defined in 1.4.484. An MPI may be a TCI or may be physically separate from a TCI. One or more MPSE(s) or one or more MPD(s) may use LLDP, through a single LLDP MSAP associated with a single TCI, to advertise their capabilities and status as part of an MPI Group (see 189.1.3).

CI 189 SC 189.1.1 P132 L33 # I-24
Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
Comment Type ER Comment Status D DTE
"DTE" can be written out of the last 2 sentences, improving clarity and avoiding technical confusion, avoiding "may", and providing additional clarification on where the specifications can be found. <DTE_GROUP>
SuggestedRemedy
Change "DTEs that incorporate MPIs that are also TCIs are compatible with their respective Physical Layer standards. Such compatibility may require additional specifications found within this clause (see 189.6.3)."
to "MPIs that are also TCIs can require additional specifications, including those found in the relevant PHY clause (e.g., 188.9), and some found within this clause (see 189.6.3)."
Proposed Response Response Status W
PROPOSED ACCEPT.

CI 189 SC 189.1.2 P132 L40 # I-25
Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
Comment Type ER Comment Status D Editorial
The figure shows this - it isn't a general statement of fact <DTE_GROUP>
SuggestedRemedy
Change "The MPSE and MPD are positioned" to "Figure 189-1 shows the MPSE and MPD positioned"
Proposed Response Response Status W
PROPOSED ACCEPT

CI 189 SC 189.1.2 P132 L40 # I-26
Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
Comment Type TR Comment Status D DTE
The relationship to the architecture is not a good place for a statement of whether an MPSE or MPD is within a DTE... and the situation is clearly stated in the overview at 189.1
<DTE_GROUP>
SuggestedRemedy
delete "An MPSE or MPD may or may not be co-located with a DTE, and" (and capitalize "The power...")
Proposed Response Response Status W
PROPOSED ACCEPT.

Cl **189** SC **189.1.2** P**132** L**48** # **I-27**
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type **ER** Comment Status **D** DTE
 The associated DTE doesn't do management - the management entity does... if anything it is
 "via the associated MAC client" but the reference is unnecessary...
 SuggestedRemedy
 Delete "by associated DTE"
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

Cl **189** SC **189.1.3** P**133** L**19** # **I-28**
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type **TR** Comment Status **D** DTE
 it is the MAC client that is associated with the DTE for management <DTE_GROUP>
 SuggestedRemedy
 In header of 189.1.3 and first sentence, change "DTE association to "MAC client association"
 similarly change DTE to MAC client in title for Figure 189-2.
 Split box labeled "PHY" in drawings to have "MAC client | MAC | PHY" (into 3 parts) in 3
 locations in Figure 189-2.
 Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: See comment #13.)

- [1] Change the subclause 189.1.3 title to read 'MPI Groups'.
 [2] Replace the subclause 189.1.3 text with:

Figure 189–2 illustrates (showing only three nodes for simplicity of drawing) some of the
 different types of MPI Groups, where one or more MPSE(s) or one or more MPD(s) use
 LLDP, through a single LLDP MSAP associated with a single TCI, to advertise their
 capabilities and status.

- [3] Change figure 189–2 title to read 'Example MPI Groups'
 [4] Split the box labelled "PHY" in figure 189–2 to have "MAC client | MAC | PHY" (into 3
 parts) in 3 locations in Figure 189-2.
 [5] Change the label 'DTE' above the box in the upper left of figure 189–2 to read 'MPI Group'
 [6] Add the label 'MPI Group' below the two lower boxes.

Cl **189** SC **189.1.3.1** P**134** L**1** # **I-29**
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type **TR** Comment Status **D** DTE
 This section isn't about association, it is about management. <DTE_GROUP>

SuggestedRemedy

Change header to "MPIs managed using LLDP"
 Replace the 2nd sentence through the end of the subclause. (another comment moves this to
 clause 79 where it is appropriate) with:
 "MPIs associated with a given MAC client for LLDP management shall either be all MPSEs or
 all MPDs. The set of MPIs associated with a single management construct are identified using
 an MPI pair index (see 79.3.10 and 79.3.11).
 LLDP management for MPoE assumes that no power bus spans more than one nearest
 bridge group. Implementers should confine LLDP managed power busses to a single nearest
 bridge group to avoid confusion."

Change PICS item MPI-CONST in 189.8.4.2 to refer to 189.1.4, change Feature to "Each
 managed client is either all MPSEs or all MPDs" , change Value/Comment to "MPIs
 associated with a given MAC client for LLDP management are all either MPSEs or MPDs"

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

(Editor's note: See comment 13.)

[1] Change the subclause 189.1.3.1 title to read 'MPIs managed using LLDP'

[2] Replace the subclause text with:

A LLDP MSAP, associated with a single TCI, may be used by zero, one, or more than one
 MPSE(s) or MPD(s) to advertise their capabilities and status using LLDP as part of an MPI
 Group.

An MPI Group shall be either all MPSEs or all MPDs. The set of MPSEs or MPDs in an MPI
 Group is identified using an MPI pair index (see 79.3.10 and 79.3.11). LLDP management for
 MPoE assumes that no power bus spans more than one nearest bridge group. Implementers
 should confine LLDP-managed power buses to a single nearest bridge group to avoid
 confusion.

[3] Change PICS item MPI-CONST in subclause 189.8.4.2 to refer to 189.1.4, change
 Feature to 'An MPI Group is either all MPSEs or all MPDs', change Value/Comment to 'An
 MPI Group shall be either all MPSEs or all MPDs.'

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Cl 189 SC 189.1.3.2 P134 L22 # I-30
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type ER Comment Status D DTE
 This section isn't about association, it is about not using LLDP management. <DTE_GROUP>
 SuggestedRemedy
 Change " associated with a DTE" to " managed using LLDP" in header and first sentence.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 189 SC 189.2 P135 L5 # I-31
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type E Comment Status D DTE
 DTE isn't needed here, it refers to physical device (or devices) and causes confusion
 <DTE_GROUP>
 SuggestedRemedy
 change DTEs to devices on P135 L5, and change DTE to device on P135 line 7
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 189 SC 189.4.3 P137 L15 # I-32
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type E Comment Status D DTE
 the label DTE isn't needed in Figure 189-3 and causes confusion <DTE_GROUP>
 SuggestedRemedy
 delete DTE from MPSE box in Figure 189-3
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 189 SC 189.5.2 P147 L42 # I-33
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type E Comment Status D DTE
 the label DTE isn't needed in Figure 189-6 and causes confusion <DTE_GROUP>
 SuggestedRemedy
 delete DTE from MPD box in Figure 189-6
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 189 SC 189.5.3.3 P148 L21 # I-34
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type E Comment Status D DTE
 the variable name doesn't need to refer to dte <DTE_GROUP>
 SuggestedRemedy
 change variable name dte_power_required to just power_required at P148 L20, and in Figure
 189-7 at P150 L2, L6, L15 (editorial license if I missed any)
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 189 SC 189.6.1 P158 L4 # I-35
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type E Comment Status D DTE
 DTE again causes confusion, can be replaced with device. <DTE_GROUP>
 SuggestedRemedy
 replace DTE with device (2 instances)
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 189 SC 189.8.3 P164 L17 # I-36
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type TR Comment Status D DTE
 Options *DTE_ABSNT and *DTE_SHRD are unused in the PICS. <DTE_GROUP>
 SuggestedRemedy
 Delete rows for DTE_ABSNT and DTE_SHRD in 189.8.3
 Proposed Response Response Status W
 PROPOSED ACCEPT.

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Cl 189 SC 189.8.3 P164 L23 # I-37
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type ER Comment Status D DTE
 Option doesn't refer to whether DTE is shared - it refers to whether there is data on the line.
 <DTE_GROUP>
 SuggestedRemedy
 Change DTE_NSHRD to NODATA in 189.8.3 and 189.8.4.2 (editorial license if I missed one)
 Change Value/Comment, to "One or more MPIs using different conductors (other than the data interface)"
 Proposed Response Response Status W
 PROPOSED ACCEPT

Cl 189 SC 189.6.1 P158 L8 # I-38
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type TR Comment Status D Return Loss
 Equation for MPI return loss is infeasible. Work has progressed to validate a relaxed MPI return loss, based on laboratory measurements and simulations. A presentation will be offered to the CRG for posting.
 SuggestedRemedy
 Replace Equation 189-1 with:

$$RL(f) \geq -10 \cdot \log_{10} \left(\frac{10000 + (40.194 \cdot f)^2 / N_{unit}}{10000 + (2010 \cdot f / N_{unit})^2} + \frac{(f^{3.5}) / (9500000)}{0.3 \leq f \leq 40} \right) \text{ dB}$$

 editorial license to format as necessary (first term in log is unchanged, second term in log operator is changed: exponent of second numerator changes from 2.5 to 3.5, denominator of second term changes from 480000 to 9500000)
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 TFTD

Cl 188 SC 188.8.2 P115 L8 # I-39
 Zimmerman, George Analog Devices,Apl group,Cisco Systems, Inc.,CME Co
 Comment Type T Comment Status D Return Loss
 The requirement is stated that it "may be met with the simulated DTE load attached." 188.8 states that mixing segment specifications are met with DTEs or representative loads attached. However, when clause 189 devices are used, the load may vary substantially, and thus this specification may vary based on the loading applied. However, the importance of this requirement on the whole mixing segment is to control the cable matching. It is sufficient to meet it with a clause 188 (unpowered) matching TCI.
 SuggestedRemedy
 Add to 188.8.2 P112, line 10 (end of paragraph, before equation). Even when Clause 189 devices intended to be used, the mixing segment RL specifications are met with simulated loading for clause 188 loaded TCIs, not the extra loading of powered devices.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE
 Change the sentence on line 5
 from: "The mixing segment with DTEs attached shall meet..."
 to: "The mixing segment with 188.9 compliant TCIs attached shall meet..."
 Add this sentence to the end of the paragraph at line 9, "Mixing segments that meet the value determined using Equation (188-4) with clause 188 devices or simulated loads attached will support clause 189 devices."

Cl 189 SC 189.3 P135 L # I-42
 Peker, Arkadiy microchip
 Comment Type T Comment Status D Pwr-limits
 Table 189-1. Type 1 voltage range is too tight for regular commercial power supply
 SuggestedRemedy
 We propose to increase Type 1 voltage range up to 57V. Also paragraph 189.6.3 Fault tolerance require MPSE and MPD tolerate 60V. See Slide 4 in presentation
 Proposed Response Response Status W
 PROPOSED REJECT.
 50V was chosen to align with OSHA regulations and ease market acceptance that has dogged PoE.

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Cl 189 SC 189.4.6 P145 L # I-43

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-limits

Table 189-5 Item 11. Maximum ICUT is bounded by ILIM

SuggestedRemedy

Add ILIM to ICUT max (similar to PoE standard) to item 11. See Slide 5 in presentation

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Change Max on item 11 (ICUT) in Table 189-5 to I_LIM.

Cl 189 SC 189.4.6 P145 L # I-44

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-limits

Table 189-5 Item 4. Item 4: ILIM min is too low for Type 1

SuggestedRemedy

Split the ILIM value for Type 0 and Type 1. Suggested Ilim_min for type 1 is 1.94A See slide 6 in presentation

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 189 SC 189.4.6 P145 L # I-45

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-limits

Table 189-5 Item 5. Short-circuit time limit of 50ms is too long for short-circuit condition

SuggestedRemedy

Proposing to change Tlim_min to 6ms if voltage does not drop below Vpmse_min See slide 7 in presentation

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. TFTD.

Note typo in proposed remedy (pmse_min should be mpse_min)

This needs to be weighed against the MPSE-Ilim, MPD-Cport, and MPD-Icut to prove that 6ms is enough time to allow a MPSE to transition from VMPSE,min to VMPSE,max.

Cl 189 SC 189.4.8 P145 L # I-46

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-limits

Make changes in last sentence of the paragraph

SuggestedRemedy

There is no maximum ICUT as ILIM bounds the maximum ICUT. See slide 9

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Change last sentence of 189.4.8, deleting "There is no maximum ICUT as" so that it reads "ILIM bounds the maximum ICUT."

Cl **189** SC **189.4.9** P**146** L # **I-47**

Peker, Arkadiy microchip

Comment Type **T** Comment Status **D** Pwr-shorts

Add to the paragraph

SuggestedRemedy

An MPSE in a power on state may remove power without regard to TLIM when the voltage no longer meets the VMPSE(min) specification for a continuous period up to 250 μ s. If a short circuit condition occurs during INRUSH state, MPSE may remove power regardless of Tinrush. See slide 8 in presentation

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD.

(Editor's note: Consider with comment #45 (if comment #45 is accepted, TLIM is less than TINRUSH).

This is multiple things.

Deleting ILIM from INRUSH would permit unlimited current during INRUSH.

The proposed addition of "An MPSE in a power on state may remove power without regard to TLIM when the voltage no longer meets the VMPSE(min) specification for a continuous period up to 250 μ s." is ill-constructed, what it would allow is removing power even if voltage drops for a nanosecond....

What I believe is meant is to allow removal of power if voltage drops during a current-limit event after 250 usec. Assuming this is the case:

Add "An MPSE in the POWER_ON state may remove power without regard to TLIM when the voltage no longer meets the VMPSE(min) specification, and current has been limited for at least 250 μ s."

Adding the statement "If a short-circuit condition occurs during INRUSH state, MPSE may remove power regardless of TINRUSH." - needs definition of a short circuit condition, and may be unnecessary if comment 45 adjusts TLIM.)

Cl **189** SC **189.4.6** P**146** L # **I-48**

Peker, Arkadiy microchip

Comment Type **T** Comment Status **D** Pwr-Inrush

Table 189-5 Item 6 Tinrush. Item 6: It specifies inrush time but if no inrush current specified it is not clear what is a purpose of inrush time?

SuggestedRemedy

Add explanation in additional information: Time required by MPSE to set up and stabilize output parameters after discovery phase ϕ . See Slide 10 in presentation

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD. See presentations from Commenter and Chad Jones.

(Editor's note: The commentor raises a valid point. The inrush per unit load for the MPD is specified as 20 mA, and an MPSE is required to support 16. Therefore, an MPSE must support 320 mA during inrush.

Digging further into how the MPSE and MPD inrush specifications align, more problems arise First, the MPD Tinrush is specified as 50-75 ms, while the MPSE inrush is 10 – 20 ms.

Further, both Table 189-5 and Table 189-9 call this Tinrush, creating conflict. As the values of MPD inrush and Cport were calculated around a min 50 ms inrush time, the value in Table 189-5 item 6 needs to change, but the group needs to decide how to handle this. The MPD having a range of 50 to 75 ms means the MPSE must have a range that is 75 ms min.

Digging into how this was handled in Clause 145 reminds that the PSE Tinrush is 50 – 75 ms, the PD Tinrush is 50 ms max, and there is an additional item Tdelay that states a PD must wait 80 ms before moving to full power, giving time for the PSE to move from inrush mode to full power mode.

Second, more MPD inrush improvements are needed. Table 189-9 item 5 points to 189.5.5.2, but item 5 and item 10 are interrelated in this table, and when someone reads 189.5.5.2, they should also read 189.5.5.5. This needs added to item 5, additional information. Also, to further tie the items together, item 10 should be moved to item 6, and 189.5.5.5 should be moved to 189.5.5.3.

Since the MPSE and MPD Tinrush specs cannot match, Tinrush in Table 189-9 needs to have a different symbol, T[Inrush_MPD].

Changes:

Change item 6 in Table 189-5: Min: 50; Max 55

Add a new item 7 in Table 189-5 (and renumber all following items): Item: 7; Parameter: Inrush current; Symbol: I[Inrush_MPSE]; Unit: mA; Min: 320; Max: {emdash}; Type: ALL; Additional Information: (blank).

In Table 189-9, make the following changes:

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In item 5(I[Inrush_MPD], Additional Information, add: "and 189.5.5.5"

In item 9 (T[Inrush]): Change Symbol to "T[Inrush_MPD]" – editorial license to fix elsewhere in 189-5; Change Parameter to "MPD inrush time"; change Min to "60"; change Max to "{emdash}"

Move item 10 (C[port]) to item 6 and renumber subsequent items.

Move 189.5.5.5 to 189.5.5.3 (or combine with 189.5.5.2?), and renumber remaining sections.

Cl 189 SC 189.4.5 P144 L # I-49

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-shorts

Table 189-4 Item 1 Ibad. Reject Discovery - short circuit Ibad is lower than maximum allowed discovery current of MPDs. Ibad = 30mA, but 2mA x 16 = 32mA

SuggestedRemedy

Increase MPSE reject discovery short-circuit current above 16xImpd_discover(max), for example, 51mA as in POE standard. See Slide 11 in presentation

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. TFTD - are we adjusting enough... and are we consistent with IdiscoveryProposal is to change Ibad to 51mA in Table 189-4, but Idiscovery_min is 50 mA, and Ibad needs to be greater than Idiscovery_min

Cl 189 SC 189.5.4 P153 L # I-50

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-limits

Table 189-7 Item 4. IMPD_mark Too tight current range of 0.1mA - 0.2mA over all MPD operating conditions for practical implementation

SuggestedRemedy

Proposing to change IMPD_mark_max to 0.5mA instead of 0.2mA See Slide 12 in presentation

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 189 SC 189.5.4 P153 L # I-51

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-limits

Table 189-7 Item 5 IMPD_discovery. Item 5: Too tight current range of 1-2 mA over all MPD operating conditions for practical implementation.

SuggestedRemedy

Proposing to change range to 1.3-3.187mA See slide 12 in presentation

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Change range of IMPD_discovery (item 5, Table 189-7) to 1.3 mA (min) to 3.1 mA (max)

Cl 189 SC 189.5.4 P153 L # I-52

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-limits

Table 189-7 Item 10 IMPD_idle. Too tight current range over all MPD operating conditions for practical implementation.

SuggestedRemedy

Proposing to change IMPD_idle to 0.5mA See slide 112 in presentation

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 189 SC 189.4.5 P144 L # I-53

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-shorts

Table 189-3 Item 7 Imark_short. Item 7, Mark Short circuit threshold spec Min as 3mA. But according to Table 189-7 item 4, Max mark event current is 0.2mA and for 16 MPDs, PSE will see $16 \times 0.2\text{mA} = 3.2\text{mA}$ current which is larger than specified PSE Mark short circuit current of 3mA

SuggestedRemedy

Change Mark short circuit Min current to $\text{Impd_mark}(\text{max}) \times 16$. For $\text{Impd_mark}(\text{max}) = 0.5\text{mA}$ (see comment #10): Min value 8mA. Max current to 12mA (Min + 4mA). See Slide 13 in presentation

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. TFTD.

Consider response to comment #52.

(Editor's note: Imark_short isn't really a short circuit limit - it amounts to about 5kohms of resistance - hardly a short. It really is there to detect that there is too much load. Shorts are protected by discover_fault (and ldiscovery_LIM), which have an open-ended entry to BACKOFF, regardless of the timer. IMark_short should be set to allow 16 UL + some margin, and renamed as IMark_overload to reflect what it really is.)

Globally replace discover_short with discover_overload (P140, and figure on P141 (3 instances))

Globally rename IMark_short to IMark_overload (P140 (3x), P143, and P144), and change description in item 7 Table 189-3 from "Mark short circuit threshold" to "Mark overload threshold"

Change IMark_overload min to 8mA and max to 12 mA (assuming comment 52 is accepted).

CI 189 SC 189.4.4.5 P141 L # I-54

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-shorts

MPSE state diagram, state DISCOVERY_HIGH MARK. Short circuit can be detected as soon as 5ms. however, based on state diagram, it is required to wait tdiscovery_high_time (min) 7ms before proceeding to BACKOFF state.

SuggestedRemedy

Update the short condition in `DISCOVERY_HIGH_MARK` state from `discover_high_timer_done * discover_short` to "discover_short" See Slide 14 in presentation

Proposed Response Response Status W

PROPOSED REJECT.

CRG disagrees with commenter. Discover_short is misnamed. It is actually looking for an overload of MPDs (equivalent to a few kOhms). Shorts are protected by an open entry to BACKOFF (A) on discover_fault, which is a much higher current threshold (about 150 ohms). There is no need to remove the timer from the exit condition.

CI 189 SC 189.4.4.5 P141 L # I-55

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-shorts

MPSE state diagram, State DISCOVERY_LOW. No testing for short-circuit condition. If a short occurs during the DISCOVERY_LOW state, or if the result is a non-valid value, no definition on how to proceed.

SuggestedRemedy

Add new return variable (e.g. `discover_low_short`) to the function `do_discovery_low`, in similar to the function `do_discovery_high`. The new variable value is TRUE if the measured IDiscovery is greater than IBAD, otherwise the value is FALSE. See Slide 15 in presentation

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

(Editor's note: There are no invalid responses to a Low event. They should all be binary tests. Shorts are protected by `discover_fault`, and overloads are measured in High Mark events. However, `check_discovery_all` is misleading in that it suggests it is not binary, but might have indeterminate outcomes between "open_circuit" and "valid". This is not the intent, based on the return variable description for `mpd_discovered`.)

Change "Values" for `mpd_discovered` (P139 L45-49) from "open_circuit" and "valid" to "FALSE" (open_circuit) and "TRUE"(valid). Reverse the order of these, and change the description for FALSE to "The MPSE has not discovered any MPDs connected to the mixing segment (i.e., the discovery signature is below `lopen` (max) in Table 189-4).

Change exit conditions of DISCOVERY_LOW_ALL (P141 L48) from "`mpd_discovered = open_circuit`" to "`!mpd_discovered`", and from "`mpd_discovered = valid`" to "`mpd_discovered`"

CI 189 SC 189.3 P135 L # I-56

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-limits

Table 189-1 Related also to Table 189-5 (items 1 and 2) and Table 189-9 Item 1 and 4. MPSE minimum guaranteed current is lower than MPD max allowed current. MPSE minimum is 1.76A but MPD maximum is (16x4w)/35.5V=1.803A

SuggestedRemedy

For example, increase MPD minimum voltage to 36.4V or decrease 4W to 3.75W See Slide 16 in presentation

Proposed Response Response Status W

PROPOSED REJECT.

CRG disagrees with commenter.

The calculation is based on the requirement that each MPD has its own TCI, therefore, each MPD necessarily has some resistance before the next MPD. This removes the issue the commenter cites.

CI 189 SC 189.5.3.5 P152 L # I-57

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-state diagram

Figure 189-9, part c. If a Type0 MPD is connected to the bus, but the MPSE is Type 1, the MPD state-machine will loop infinitely between PON_EVAL state and PON_NO_POWER state.

SuggestedRemedy

Our Proposal on Slide 17 and 18 in presentation

Proposed Response Response Status W

PROPOSED REJECT.

CRG disagrees with commenter.

The loop doesn't oscillate - it keeps the MPD presenting DISABLED and unpowered, without tps, and indicating mismatch until either the MPSE resets or the mismatch is somehow removed. - the signature is not toggled, the power states are not toggled.

This is the desired behavior. Indicate the mismatch, without powering, until it is either fixed or the MPSE is reset.

No time occurs in state diagram states. The proposed solution would hang up.,

The `do_mismatch_eval` doesn't take any time... it's just the state of the voltages, it isn't a delayed routine - it is the same as the logic in PON_EVAL, and there is no time for any voltages to slew to change the result.

(if it does change, it could oscillate - changing the signature and the powering state of the MPSE (and instantaneously blipping several parameters)).

IEEE P802.3da D3.0 10 Mb/s Single Pair Multidrop Segment Enhancements Initial Sponsor ballot comment

CI 189 SC 189.4.6 P145 L # I-58

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-state diagram

Table 189-5, Items 9 and 10, also Table 189-9 Item 11. A MPD may reach disabled mode if it has a mismatch between its type and the MPSE type. When an MPD is in a DISABLED mode, its current can reach 5mA (Table 189-9 Item 11), where as the minimum Ihold is only 4mA. This may cause a DISABLED MPD to keep the MPSE powered as the disaabled current is larger than Ihold current, even if MPDs have been disconnected

SuggestedRemedy

Need to review TPS concept. One of the optin is to decrease Ihold current. See Slide 19 in presentation

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. TFTD. Consider with 57. Probably need to adjust current in the DISABLED to be much lower, or raise the minimum Ihold for TPS - which needs to be > 16 x the current in the disabled state...

Need to consider whether MPDs in NO_POWER state can keep the power on while present_mismatch_indicator = True, or if there should not be a mismatch_indicator on MPDs and the system will reset once all MPDs that were in the NO_POWER state have disconnected.

CI 189 SC 189.4.6 P145 L # I-59

Peker, Arkadiy microchip

Comment Type T Comment Status D Pwr-limits

Table 189-5 Item 3. 9.6V/ms is figure is much slower than the value received during MPSE inrush with a single MPD: .If Cmpd=5uF and Imps =1.1A dv/dt during inrush =20000V/ms

SuggestedRemedy

Add additional explanation about the conditions used to calculate this 9.5V/ms, or what purpose it serves. Indicate that it does not related to inrush. See page 21 in presentation

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add Additional Information to Item 3 (dV/dT): "See 189.4.5"

Add to 189.4.5 at line 30 after "except when it is in the INRUSH and POWER_ON states." - "The output slew rate requirement in Table 189-9 only applies in teh POWER_ON state and does not apply during the discovery process or the INRUSH state."

CI 189 SC 189.6.2.2 P159 L # I-60

Peker, Arkadiy microchip

Comment Type T Comment Status D Isolation

Figure 189-12. If MPD has high side switch than there is no electical isolation between two grounds on Figure 189-12

SuggestedRemedy

Need clarification regarding electrical isolation in grounded MPOE system. See Slide 22 in presentation

Proposed Response Response Status W

PROPOSED REJECT.

This is the point of the grounded PoE system, they are engineered to have a shared ground. As stated on line 50 just below Fig 189-12: "Grounded MPSEs are specified in 189.6.2.2.2 to switch their more positive conductor because switching only the negative conductor could allow a ground path to prevent an MPSE from controlling the flow of power."

Grounded systems are allowed a switch in both conductors but MUST have one in the high side. Therefore, this recommended remedy of a low side switch is incorrect.

CI 189 SC 189.1.3.1 P134 L4 # I-61

Jones, Chad Cisco Systems, Inc.

Comment Type ER Comment Status D DTE

The sentence: "A DTE often has an MPI sharing the same power/data pair." The is no evidence to support this claim. There exist ZERO MPIs in the world. It's an aspirational sentence, but far from fact. Delete.

SuggestedRemedy

Delete this sentence.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 189 SC 189.1.3.1 P134 L6 # I-62

Jones, Chad Cisco Systems, Inc.

Comment Type ER Comment Status D DTE

MPI pair index, this definition does not belong here. It belongs in Clause 79. move to Clause 79

SuggestedRemedy

Move the definiton of MPI pair index to clause 79.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comments 15 and 29

IEEE P802.3da D3.0 10 Mb/s Single Pair Multidrop Segment Enhancements Initial Sponsor ballot comment

CI 189 SC 189.1.3.1 P134 L14 # I-63

Jones, Chad Cisco Systems, Inc.

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

The text: "The set of MPDs associated with a DTE shall meet the following criteria:" This is the first shall in clause 189, and I object to this being the first MPoE requirement. Additionally, in D2.0 the TF spent time cleaning out all the shalls in 189.1 so that it is informative. We need to delete the shall to be consistent.

SuggestedRemedy
replace "shall meet" with "meets".

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE. (Editor's note: PICS *MPI-CONST may need to be deleted if "shall meets" is replaced with "meets". Check other PICS.)

See comments 15 and 29

CI 189 SC 189.3 P135 L16 # I-64

Jones, Chad Cisco Systems, Inc.

Comment Type **TR** Comment Status **D** Unit Loads

"MPDs consume integer units of power called ðunit loadsö." The unit load for Type 0 is 1.1W. This is not an integer.

SuggestedRemedy
change: "MPDs consume integer units of power called ðunit loadsö."
to "MPDs are defined to consume power in portions called "unit loads"."

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 189 SC 189.3 P135 L19 # I-65

Jones, Chad Cisco Systems, Inc.

Comment Type **TR** Comment Status **D** Unit Loads

We changed the unit loads to 1.1W and 4W in D2.3 but missed correcting it in this paragraph.

SuggestedRemedy
in the paragraph starting on page 135, line19 replace "1 W" with "1.1 W" in two places and "2 W" with "4 W"

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 30 SC 30.17.1.1.13 P36 L32 # I-66

Yseboodt, Lennart Signify

Comment Type **E** Comment Status **D** EZ

Attribute aMPSEMeasurement Power Uncertainty should be without spaces

SuggestedRemedy
Remove spaces

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 30 SC 30.17.2.1.16 P42 L30 # I-67

Yseboodt, Lennart Signify

Comment Type **E** Comment Status **D** EZ

There is an "INTEGER" snuck into the BEHAVIOR part that doesn't need to be there.

SuggestedRemedy
Remove INTEGER.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 189 SC 189.4.7 P145 L47 # I-68

Yseboodt, Lennart Signify

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

This section explains that no maximum power limit is given for PMPSE because various local regulations might require lower limits. That is certainly true, however not specifying an upper limit would allow compliant PSEs to output more than 100W. This in turn would call into question how to categorize such a PSE. Can it still be called a Class 2 power system ? I believe it cannot. This will limit applications.

SuggestedRemedy
Introduce a requirement to limit output power to 100W maximum. This is no way limits PSEs to impose a lower limit to satisfy local regulatory requirements, but at least allows the system to be classified as a Class 2 system

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE. TFTD.(we deleted a similar limit for a reason...)

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Cl 189 SC 189.6.3 P160 L29 # I-69
Yseboodt, Lennart Signify
Comment Type E Comment Status D EZ
MPDs tolerate 60 V in either polarity (see 188.9.1.3). The referred section says nothing about this.
SuggestedRemedy
Replace by 188.9.1.5.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. (Comment #70, potentially removes the reference and accomodates this)

Cl 189 SC 189.6.3 P160 L29 # I-70
Yseboodt, Lennart Signify
Comment Type TR Comment Status D Power
MPDs tolerate 60 V in either polarity (see 188.9.1.3).
This is not written as a requirement because the requirement is imposed on the DTE in sec 188.9.1.5. However, 189.1 also says that MPIs may also operate without an associated DTE, which creates a gap.
SuggestedRemedy
We know from PoE that there should be no ambiguity about this topic, so one possible solution would be to turn the quoted statement into a proper requirement. That is duplicate with the requirement on the DTE, but I don't really see harm in that.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.

Change "MPDs tolerate 60 V in either polarity (see 188.9.1.3)." to "MPDs shall tolerate 60 V in either polarity at the MPI." (Editor's note: remove cross-reference as this is now stand alone).

Change "MPSEs tolerate 60 V applied with specified polarity in 189.4.2." to "MPSEs shall tolerate 60 V applied with specified polarity in 189.4.2."

Editor's license granted to add 2 PICS items to reflect above.

Replace the contents of 188.9.1.5 with, "For TCIs that are not also the MPI of an MPSE, the station shall withstand without damage the application of any voltages between 0 V DC and 60 V DC applied across TC1 or TC2's BI_DA+ and BI_DA- in either polarity, under all operating conditions indefinitely. See 189.6.3 for TCIs that are also the MPI of an MPSE."

Change the PICS TC15 Value/Comment to, "Up to 60 V DC with the source current limited to 2000 mA in either polarity when the TCI is not the MPI of an MPSE, and in the same polarity as the MPSE when the TCI is also the MPI of an MPSE (see 189.6.3)".

Cl 189 SC 189.4.3 P136 L44 # I-71
Yseboodt, Lennart Signify
Comment Type E Comment Status D Editorial
"For compliance, MPSE current is measured..."
Compliance with what ? Sentence doesn't need this, also, it sounds like this should be a requirement.
SuggestedRemedy
"MSE current shall be defined as the sum of currents MP1 + MP2 etc..."
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. Change "For compliance, MPSE current is measured as the sum of MPI currents, MP1+MP2", to "MPSE current is defined as the sum of the individual MPI currents, MP1+MP2".
(note - this can't be a requirement, because either it is the definition of a quantity, or it is a measurement - a requirement on the user...)

Cl 189 SC 189.4.4.5 P141 L1 # I-72
Yseboodt, Lennart Signify
Comment Type TR Comment Status D Pwr-state diagram
The MPSE state diagram seems to be missing the mechanism to check for MPS current and reset the ttpsdo_timer. You need to equivalent of Figure 145-17 and 18.
SuggestedRemedy
Add the missing logic.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
TFTD
(need text of a remedy - fixing the state diagram)

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CI 189 SC 189.4.4.5 P141 L1 # I-73

Yseboodt, Lennart Signify

Comment Type **TR** Comment Status **D** Pwr-state diagram

When the PSE in Power on and the ttpso_timer_done becomes true, the SD goes back to IDLE. However, it does not remove power per the state diagram. It does execute the MPSE_reset function, which produces a reset voltage, but mpi_powered remains TRUE. The correct behavior is described in 189.4.10, but the SD needs to agree with this.

SuggestedRemedy

Add mpi_powered <= FALSE to BACKOFF.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 189 SC 189.5.2 P147 L24 # I-74

Yseboodt, Lennart Signify

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

"For compliance, MPD current is..." Compliance with what ? Sentence doesn't need this, also, it sounds like this should be a requirement.

SuggestedRemedy

"Current at the MPD PI shall be defined as the sum of currents MP1+MP2 etc..."

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "For compliance, MPD current is measured as the sum of MPI currents, MP1+MP2.", to "MPD current is defined as the sum of the individual MPI currents, MP1+MP2".

(note - this can't be a requirement, because either it is the definition of a quantity, or it is a measurement - a requirement on the user...)

CI 30 SC 30.16.1.1.11 P32 L48 # I-75

Ran, Adeo Cisco Systems, Inc.

Comment Type **E** Comment Status **D** EZ

"A BOOLEAN value: TRUE FALSE" without details about meaning of each value is not used elsewhere in Clause 30. In similar cases it is just "Boolean".

Also in 30.16.1.1.12.

SuggestedRemedy

Change both instances from "A BOOLEAN value: TRUE FALSE" to "BOOLEAN" as in 30.16.1.1.9.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 30 SC 30.17.1.1.13 P36 L32 # I-76

Ran, Adeo Cisco Systems, Inc.

Comment Type **E** Comment Status **D** EZ

The attribute name is "aMPSEMeasurementPowerUncertainty", I believe this should be a single word

SuggestedRemedy

Change to aMPSEMeasurementPowerUncertainty

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 30 SC 30.17.1.1.13 P36 L40 # I-77

Ran, Adeo Cisco Systems, Inc.

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

"milliWatts" (with such capitalization) is never used in 802.3 and seems to not match the style manual and other standards. See <https://www.nist.gov/pml/special-publication-811/nist-guide-si-chapter-9-rules-and-style-conventions-spelling-unit-names>.

Also, "milliVolts" in 30.17.1.1.14, "microAmps" in 30.17.1.1.15, "Joules" in 30.17.2.1.16 and possibly and other units.

Note that several existing attributes, such as 30.12.3.1.53, use a reference to Table 79021 and do not mention units internally.

SuggestedRemedy

Change to milliwatts, millivolts, microamps, joules, etc., uncapitalized, for all units across the document.

Consider referring to Table 79021 (or a similar table) instead.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE. Editor to search and replace all instances of "Amps", with "amps" , and "Watts" with "watts" - except when used without a prefix (189.7.8 - style appears to be that units without prefix are capitalized.), and "Volts" with "volts" (Joules is used consistently with this)

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Cl 79 SC 79.2 P53 L38 # I-78

Ran, Adee Cisco Systems, Inc.

Comment Type E Comment Status D EZ

LLDPDU seems to be a typo.
Also in 79.5.4.

SuggestedRemedy

Change to LLDPDU in both places.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 148 SC 148.4.4.1 P70 L37 # I-79

Baggett, Tim Microchip Technology, Inc.

Comment Type E Comment Status D Editorial

The word "simply" in the following sentence does not add to the standard as it is subjective unnecessary.

"A claim is made on a transmit opportunity simply by the reception of a packet during a transmit opportunity."

SuggestedRemedy

Strike the word simply changing:

"A claim is made on a transmit opportunity simply by the reception of a packet during a transmit opportunity."

to

"A claim is made on a transmit opportunity by the reception of a packet during a transmit opportunity."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 189 SC 189.4.6 P145 L20 # I-80

Jones, Chad Cisco Systems, Inc.

Comment Type TR Comment Status D Pwr-limits

Table 189-5. item 4 still dates back to when type 0 and type 1 currents were equal. So presently, a type 1 PSE min current (79.2 W / 45 V = 1.76 A) is MORE than Ilim_min - making systems impossible to build. Item 4 needs to be divided into two fields, one for each type. I will take a shot at numbers, but the group can feel free to correct me on them.

SuggestedRemedy

divide the 'Min', 'Max', and Type' columns into two fields for item 4 in table 189-5. Keep 1.2 and 2.3 for type 0 (change ALL to 0). the second row would be for type 1. Enter 2.2 for Min and 2.5 for Max.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Discuss with comment 44

Cl 148 SC 148.4.7.5 P82 L11 # I-81

Baggett, Tim Microchip Technology, Inc.

Comment Type TR Comment Status D PLCA

During the May 2025 meeting, it was decided with comment 48 not to support non-PLCA nodes in a D-PLCA network.

See:

https://www.ieee802.org/3/da/public/0525/Baggett_3da_Cmt48_DPLCA_Algorithm_Optimization_v02.pdf

And:

https://www.ieee802.org/3/da/public/0525/Baggett_3da_Cmt48_EditingInstructions_v03.pdf

However, the editing instructions were incomplete and residuals of the change were left behind.

SuggestedRemedy

In the "WAIT_BEACON" (P82L11) and "FOLLOWER" (P82L35) state actions, change:

localnodeID <= 255

to:

localnodeID <= 254

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 148 SC 148.4.7.3 P81 L3 # I-82

Ran, Adeo Cisco Systems, Inc.

Comment Type T Comment Status D PLCA

"It returns any ID that is not marked as CLAIMED in the table"
 "any ID" is unclear and could be interpreted as returning all such IDs in the table.
 After reading the description further it looks like the function returns one ID.
 Also, under a certain condition it returns 255, which is not an ID in the table.

The text is not clear on first reading, and could be improved.

SuggestedRemedy

Change the quoted sentence to "It returns an ID that is not marked as CLAIMED in the table, or 255 if no such ID exists".
 Delete item c from the subsequent list.
 Rephrase as necessary.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Change the definition of PICK FREE TXOP from:

"This function takes as parameter the txop_claim_table defined in 148.4.7.2. It returns any ID that is not marked as CLAIMED in the table, with the following exceptions:

- a. it does not return zero, which is reserved for the PLCA coordinator
- b. it returns an available ID less than the highest CLAIMED ID if possible. If there is no available ID less than the highest CLAIMED ID, it returns the next ID after the highest CLAIMED ID.
- c. it returns 255 if all IDs in the table are marked CLAIMED. Note that it is allowed for this function to return the ID currently being claimed by the local node, unless it is claimed by another node. The actual criteria for choosing among the available, allowed IDs is implementation defined."

to:

"This function takes the txop_claim_table defined in 148.4.7.2 as a parameter. It returns an ID that is not marked as CLAIMED in the table, or 255 if no such ID exists, subject to the following conditions:

- a. it does not return zero, which is reserved for the PLCA coordinator
- b. it returns an available ID less than the highest CLAIMED ID if possible. If there is no available ID less than the highest CLAIMED ID, it returns the next ID after the highest CLAIMED ID

D. Note this function may return the ID currently being claimed by the local node, unless that ID is claimed by another node. The actual criteria for choosing among the available, allowed IDs is implementation dependent."

CI 148 SC 148.4.7.3 P81 L13 # I-83

Ran, Adeo Cisco Systems, Inc.

Comment Type E Comment Status D PLCA

"criteria" is plural.

SuggestedRemedy

Change "is implementation defined" to "are implementation defined".

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE. Accomodated by comment 82

CI 148 SC 148.4.7.4 P81 L19 # I-84

Ran, Adeo Cisco Systems, Inc.

Comment Type T Comment Status D PLCA

"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"
 The sentence is somewhat convoluted. Also, "random" is ill-defined and should not be used in a definition. It may be impossible to tell how "random" a specific implementation of the timer will be. Also, this requirement is not useful as a guidance for implementations.

A standard should tell the implementer what the requirements and/or recommendations are, and preferably provide the motivation.

SuggestedRemedy

Replace the quoted requirement with the following statements (with editorial license)
 The duration of this timer is 40+4N bit times, where N is an integer between 0 and 255 inclusive, generated upon entering the DISABLED state in an implementation-dependent manner. Implementations should generate a uniform distribution of N within the specified range and avoid generating a sequence that would repeatedly match with other stations in the network. Use of time-dependent or data-dependent methods to generate N is recommended.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Replace, "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."

with, "Duration: the duration of this timer is 40+4N bit times, where N is an integer between 0 and 255 inclusive, generated upon entering the DISABLED state in an implementation-dependent manner. Implementations should generate a uniform distribution of N within the specified range and avoid generating a sequence that would repeatedly match with other stations in the network. Use of time-dependent or data-dependent methods to generate N is recommended."

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Cl 188 SC 188.1.1 P87 L24 # I-85

Ran, Adeo Cisco Systems, Inc.

Comment Type T Comment Status D EZ

"PMD" appears in the diagram but not in the legend.

SuggestedRemedy

Add PMD to the legend.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add "PMD = PHYSICAL LAYER DEPENDENT SUBLAYER" to legend between PMA and PHY

Cl 188 SC 188.6.6.1 P111 L12 # I-86

Ran, Adeo Cisco Systems, Inc.

Comment Type E Comment Status D EZ

"125 octet frames" compound adjective should use a hyphen, to avoid misinterpretation e.g. as "125 frames of one octet". Also in 188.6.6.2.

SuggestedRemedy

Change to "125-octet frames", twice.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 188 SC 188.8 P115 L15 # I-87

Ran, Adeo Cisco Systems, Inc.

Comment Type E Comment Status D Editorial

The reference to 1.4.558a goes to the definition of "Trunk Connection Interface" which points back to clause 188 - circular definition? For comparison, the reference to 1.4.403 goes to the definition of "mixing segment" which is not circular.

Also in 189.1.2, MPI, which points to 1.4.405b, which points back to clause 189. In that case, the detailed definition is in 1.4.405b.

SuggestedRemedy

In all such cases, delete one of the cross-references to remove the circularity. Preferably keep the detailed definition in the clause, without pointing to 1.4; make the one in 1.4 short and point to the specific subclause (188.8, 189.1.2, etc.) instead.

Proposed Response Response Status W

PROPOSED REJECT.

Having the references point back to each other improves clarity. The reader of the definitions clause knows where the term applies, and the reader of the PHY clause knows where to look for the definitive definition - whose text stands on its own.

Cl 188 SC 188.11 P122 L25 # I-88

Ran, Adeo Cisco Systems, Inc.

Comment Type E Comment Status D Editorial

Values in μ s and ns are given in the same table. The IEEE-SA style manual requires (163.1) that "The same units of measure shall be used throughout each column".

Also in Table 189-4 (mA and μ A) and maybe others.

SuggestedRemedy

Change the rows with values in μ s to use ns.

Fix other tables as necessary.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: There are many instances in this draft benefit from the clarity of mixed units (e.g., Table 189-4). This should not be a global change.)

In Table 188-5, replace "5 μ s" with "5000 ns", replace "3.2 μ s" with "3200 ns", replace "4 μ s" with "4000 ns", and replace "4 μ s" with "4000 ns"

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CI 189 SC 189.1.2 P133 L6 # I-89

Ran, Adeel Cisco Systems, Inc.

Comment Type TR Comment Status D Editorial

Figure 189-1 has "MPI" labels both within boxes and on lines across connections between the MPI boxes and the "MPSE or MPD" boxes.
It also has a note saying "The MPI may not be exposed".
It leaves me puzzled as to what an MPI is - an interface (line) or a device (box) that has an interface? and is it not allowed to be exposed?

Also in Figure 189-3, Figure 189-6, maybe others.

SuggestedRemedy

Please clarify in the figures what the MPI is, out of the two options. Rename the other thing if necessary (it seems that the "box" should have a different label, maybe MPI connector or MP junction).

The note should probably say "An MPI is not necessarily exposed" or something similar without the special word "may".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace the "Note" in Figures 189-1, 189-3, and 189-6 with: "NOTE – If the MPI is not exposed, specified values are calculated from values observed at MP1 and MP2."

CI 189 SC 189.5.5.3 P156 L46 # I-90

Ran, Adeel Cisco Systems, Inc.

Comment Type E Comment Status D EZ

The letter "x" seem to be used for multiplication.

SuggestedRemedy

Change to x, here and elsewhere as necessary.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace the "x" with the multiplication symbol.

CI 30 SC 30.2.5 P28 L6 # I-91

Wienckowski, Natalie IVN Solutions LLC

Comment Type E Comment Status D EZ

Subject/verb agreement
For a managed MPSEs...

SuggestedRemedy

Change: For a managed MPSEs to ...
To: For a managed MPSE to ...

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 30 SC 30.17.2.1.21 P43 L33 # I-92

Wienckowski, Natalie IVN Solutions LLC

Comment Type T Comment Status D Management

Voltage is measured in millivolts. (10⁻³)
Current is measured in microAmps. (10⁻⁶)
Why is power measured in milliwatts? (10⁻³)
When you calculate power from the measured Voltage and Current, you get something in nano Watts. (10⁻⁹)

SuggestedRemedy

Change power to be in micro Watts (10⁻⁶), change current to be in milliAmps (10⁻³), or change voltage to be in Volts so the product is not so far off from the multiplicands.

Proposed Response Response Status W

PROPOSED REJECT.

Units were inserted based on common management parameters.TFTD.

CI 148 SC 148.4.7.5 P82 L24 # I-93

Baggett, Tim Microchip Technology, Inc.

Comment Type TR Comment Status D PLCA

During previous comment resolution we added a LOOPBACK_TX and LOOPBACK_RX states when the coordinator transmitted a BEACON. The idea was to block reception of the PHY's own BEACON to prevent the detection of own BEACON forcing the coordinator to believe there was a second coordinator on the segment and becoming a FOLLOWER through the LEARNING state.

See
https://www.ieee802.org/3/da/public/0525/Baggett_3da_Cmt47_DPLCA_Block_Own_BEACONs_v01.pdf

A corner case has been observed such that if there is corruption on the line during transmission of the BEACON the PHY may never sense its own BEACON on the line. This would cause rx_cmd to never be set to BEACON resulting in the PHY being stuck in the LOOPBACK_TX state. Such corruption may be due to colliding with a second coordinator, packet, or other interference.

Suggested Remedy

Add a timeout timer to limit how long the PHY may linger in the LOOPBACK_TX state waiting for rx_cmd=BEACON. Based on the above referenced presentation, this timeout is calculated to be a maximum of 6.9us.

Add new timer to 148.4.7.4 "Timers" on P81 L22:

beacon_timeout_timer

Limits the time the D-PLCA control state diagram may remain in the LOOPBACK_TX state waiting for the self-detection of a transmitted BEACON.

Duration: the duration of this timer is 69 bit times.

Tolerance: 1 BT

Update the D-PLCA Control State Diagram Fig 148-8 on Pg 82 L45 as follows:

* in the LOOPBACK_TX state add the action "start beacon_timeout_timer"

* Add a state transition from LOOPBACK_TX to DISABLED with the condition "beacon_timeout_timer_done"

Proposed Response Response Status W

PROPOSED ACCEPT.

TFTD with presentation

CI 188 SC 188.4.3.7 P101 L1 # I-94

Baggett, Tim Microchip Technology, Inc.

Comment Type TR Comment Status D PLCA

A corner case has been identified in which the PCS Receive state diagram could become stuck in the SYNCING or COMMIT states. Normally an End-of-Stream Delimiter (ESD) symbol is used to return to the WAIT_SYNC. However, if a single or multiple 'J' SYNC/COMMIT symbols are received, but the remainder of the packet or commit is not received due to corruption on the line, the state diagram will remain stuck in the SYNCING or COMMIT state. This may occur due to data corruption on the segment.

Suggested Remedy

L6 Change the condition for the transition from SYNCING to WAIT_SYNC

From:

RSCD *
 ((RXn = ESD) +
 ((RXn != SSD) *
 (RXn != SYNC) *
 (!FC_SUPPORTED)))

To:

RSCD *
 ((RXn = ESD) + (RXn = SILENCE) +
 ((RXn != SSD) *
 (RXn != SYNC) *
 (!FC_SUPPORTED)))

L33 Change the condition for the transition from COMMIT to WAIT_SYNC

From:

RSCD *
 ((RXn = ESD) +
 ((RXn != SSD) *
 (RXn != SYNC) *
 (!FC_SUPPORTED)))

To:

RSCD *
 ((RXn = ESD) + (RXn = SILENCE) +
 ((RXn != SSD) *
 (RXn != SYNC) *
 (!FC_SUPPORTED)))

Proposed Response Response Status W

PROPOSED ACCEPT.

TFTD with presentation

IEEE P802.3da D3.0 10 Mb/s Single Pair Multidrop Segment Enhancements Initial Sponsor ballot comment

CI 188 SC 188.9.1.3 P119 L45 # I-95

Brandt, David Rockwell Automation

Comment Type T Comment Status D TCL

Mode conversion between TC1 and TC2 reference planes needs no adjustment for length.

SuggestedRemedy

Change "ELTCTL" to "TCTL". Make the same change in PICS TC13 Value/Comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 188 SC 188.12.4.8 P130 L19 # I-96

Brandt, David Rockwell Automation

Comment Type T Comment Status D TCL

No compensation for length is specified for mode conversion between TC1 and TC2.

SuggestedRemedy

Change "ELTCTL" to "TCTL".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by change in comment 95 to PICS TC13.

CI 148 SC 148.4.7.5 P82 L38 # I-97

Baggett, Tim Microchip Technology, Inc.

Comment Type TR Comment Status D PLCA

The current D-PLCA algorithm requires new follower nodes to listen for one aging cycle. Immediately after the followers will pick the lowest unused transmit opportunity from the claim table. This results in all followers selecting the same transmit opportunity. The first node to transmit wins, and the other follower nodes that selected the same TO will move to a new, lowest unused TO. If multiple nodes transmit, then they interfere with each other.

A faster convergence is to wait a random number of PLCA cycles after the aging table has been updated prior to picking the lowest unused TO from the claim table. In the case of identical nodes powered up simultaneously, this helps them avoid transmitting at the same time after picking the same TO.

SuggestedRemedy

See associated presentation.

Add a new variable, pick_wait_count, that will the number of BEACONS received (PLCA cycles) since exiting the LEARNING state.

Add a new variable, pick_wait_cycles. This variable is the number of BEACONS that will be received (PLCA cycles) since exiting the LEARNING state before entering the FOLLOWER state and selecting an unused transit opportunity. The value is a random number selected from 0 to 'n' upon entry into the LEARNING and FOLLOWER states.

In the LEARNING state add the action to initialize "pick_wait_count = 0"

Insert a new state, PICK_WAIT, between LEARNING and FOLLOWER with the current condition for transitioning from LEARNING to PICK_WAIT.

Add a transition from PICK_WAIT to FOLLOWER with the condition "pick_wait_count >= pick_wait_cycles"

Add a new state PICK_INCREMENT with a transition from PICK_WAIT with the condition "rx_cmd == BEACON"

Inside the PICK_INCREMENT include the action "pick_wait_count = pick_wait_count + 1"

Add a transition from PICK_INCREMENT to PICK_WAIT with the condition "rx_cmd != BEACON"

In the follower state add the action to initialize "pick_wait_count = 0"

Change the current loop transition from FOLLOWER to FOLLOWER to go from FOLLOWER to PICK_WAIT.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

TFTD. (presentation requested)

| CI | 0 | SC | 0 | P00 | L00 | # | I-98 |
|----|---|----|---|-----|-----|---|------|
|----|---|----|---|-----|-----|---|------|

Thompson, Geoffrey GraCaSI S.A.

| Comment Type | TR | Comment Status | D | DTE |
|--------------|----|----------------|---|-----|
|--------------|----|----------------|---|-----|

The use of the term "DTE" in our clause, while it aligns with the definition of DTE in clause 1.4.279 (see next paragraph) does not align with the long standing data communications industry definition for "Data Terminal Equipment (DTE)."

"1.4.279 data terminal equipment (DTE): Any source or destination of data connected to the local area network."

The following quote is from a 1990 Glossary(ref) of industry terms published by a major industry player (at the time). It sought to harmonize traditional terms for new arrivals in what was then a rapidly growing market sector. This common understanding was particularly important for terms used on external connection points.

"data terminal equipment (DTE)

(1)Either a terminal or computer at a user's end of the network.

(2)Generally end-user devices, such as terminals and computers, that connect to a DCE, which either generate or receives the data carried by the network. In RS-232-C connections the designation as either DTE or DCE determines the signalling role in handshaking; in a CCITT X.25 interface, the device or equipment that manages the interface at the user premises. Compare with data circuit terminating equipment (DCE)."

This 802.3 literal use of the term, while technically correct within 802.3 can cause confusion and misunderstanding when our device spec is being read as a whole by our users rather than our internal experts.

REFERENCES

IEEE STD 802.3-2022, Clause 1.4.279

Glossary of Microcomputing, Networking, and Communications, (c) SynOptics Communications, Part Number 995-506. PAGE 95

SuggestedRemedy

I suggest that we eliminate the use of the term "DTE" throughout our draft and use a new term that we get to define and will therefore be understood in the same way by all.

| Proposed Response | Response Status | W |
|-------------------|-----------------|---|
|-------------------|-----------------|---|

PROPOSED ACCEPT IN PRINCIPLE. Discuss with DTE comments, consider clause 188 changes as well.

| CI | 189 | SC | 189.1.2 | P132 | L39 | # | I-99 |
|----|-----|----|---------|------|-----|---|------|
|----|-----|----|---------|------|-----|---|------|

Ran, Adeo

Cisco Systems, Inc.

| Comment Type | TR | Comment Status | D | Editorial |
|--------------|----|----------------|---|-----------|
|--------------|----|----------------|---|-----------|

The text says "Figure 18901 depicts the positioning of MPoE", but the figure does not include anything labeled as MPoE.

SuggestedRemedy

Change the figure, or refer to another figure if there is one, or delete the quoted sentence.

| Proposed Response | Response Status | W |
|-------------------|-----------------|---|
|-------------------|-----------------|---|

PROPOSED ACCEPT IN PRINCIPLE. Replace "Figure 189–1 depicts the positioning of MPoE. The MPSE and MPD are positioned within separate DTEs."

with, "Figure 189–1 shows the MPoE mixing segment and depicts MPSEs and MPDs positioned within separate devices. "

| CI | 189 | SC | 189.1.2 | P132 | L36 | # | I-100 |
|----|-----|----|---------|------|-----|---|-------|
|----|-----|----|---------|------|-----|---|-------|

Ran, Adeo

Cisco Systems, Inc.

| Comment Type | TR | Comment Status | D | Editorial |
|--------------|----|----------------|---|-----------|
|--------------|----|----------------|---|-----------|

The subclause title is "Relationship of MPoE to the IEEE 802.3 architecture", but it does not seem to be about the IEEE 802.3 architecture at all (other than mentioning "Ethernet Physical Layers" in the first sentence).

SuggestedRemedy

Change the title to something more appropriate, or add a diagram showing a how MPoE is connecting a medium with a stack of Ethernet sublayers, as in other similar subclauses. If the latter is done, break the content that is not related to the positioning of MPoE to a separate subclause.

| Proposed Response | Response Status | W |
|-------------------|-----------------|---|
|-------------------|-----------------|---|

PROPOSED ACCEPT IN PRINCIPLE. Replace, "Relationship of MPoE to the IEEE 802.3 architecture"

with, "MPoE architecture and relationship to Ethernet Physical Layers"

CI 189 SC 189.1.4 P134 L31 # I-101

Ran, Adeo Cisco Systems, Inc.

Comment Type T Comment Status D Editorial

This subclause lists conventions for state diagrams and their associated things, but there are additional "conventions" subclause where the state diagrams actually appear (189.4.4, 189.5.3). and they state apparently different conventions (145.2.5.2 vs. 21.5).

SuggestedRemedy

Merge the conventions subclauses. Possibly, delete 189.5.3.1 and 189.4.4.1.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Delete 189.5.3.1 and 189.4.4.1. Replace paragraph 189.1.4 with "The body of this clause contains state diagrams including definitions of variables, constants, and functions. The notation used in the state diagrams follows the conventions of state diagrams as described in 145.2.5.2. Should there be a discrepancy between a state diagram and descriptive text, the state diagram prevails."

Replace paragraph 188.1.3 with "The body of this clause contains state diagrams including definitions of variables, constants, and functions. The notation used in the state diagrams follows the conventions of state diagrams as described in 145.2.5.2. Should there be a discrepancy between a state diagram and descriptive text, the state diagram prevails."

CI 45 SC 45.2.1.234.3 P47 L46 # I-102

Rolfe, Benjamin Blind Creek Associates

Comment Type TR Comment Status D Management

"While in the low-power mode, the device shall respond to management transactions necessary to exit the low-power mode"

Are there other "management transactions necessary to exit the low-power mode" besides resetting the PMA and if so where are they defined?

SuggestedRemedy

Provide a cross reference to where the management transactions necessary to exit the low power mode are defined.

Proposed Response Response Status W

PROPOSED REJECT.

The CRG disagrees with the commenter. The specified transaction in the standard for exiting low power mode is the setting of this bit, so the cross-reference would be to this same section. However, this text, which is present in all of the 8 other similar low-power mode bits in IEEE Std 802.3-2022 is there in case there are implementation-dependent management transactions needed to ensure successful exit.

CI 79 SC 79.3.10 P55 L50 # I-103

Rolfe, Benjamin Blind Creek Associates

Comment Type TR Comment Status D DTE

"A DTE shall have either MPSE or MPD MPis, not a mix of both. DTE are either MPSE or MPD MPis." is confusing in the context defining the MPoE MPSE Status TLV. This seems appropriate in clause 189 where the requirements for MPoE DTEs are defined. A good place might be 189.1.3.1 MPis associated with a DTE, where we find it stated normatively that MPis for a given DTE are either all MPSEs or all MPDs. Which would make these two redundant sentences redundantly restating what is already state din 189.1.3.1, again.

SuggestedRemedy

Remove "A DTE shall have either MPSE or MPD MPis, not a mix of both. DTE are either MPSE or MPD MPis." from 79.3.10

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Accomodated by comment 14

CI 188 SC 188.6.2.2 P107 L18 # I-104

Rolfe, Benjamin Blind Creek Associates

Comment Type TR Comment Status D Management

How does one verify the requirement "If MDIO is not implemented, a similar functionality shall be provided by equivalent means". It is not clear how "equivalent means" can be verified or where this standard defines "equivalent means" which satisfy the requirement. It appears incorrect use of "shall". The only use of "equivalent means" in the base standard, which seems to be conveying a similar desire, is in 50.3.11.3 where we find "If no MDIO interface is implemented, these counters are to be accessible by equivalent means". This seems the correct way to state the desire that is not a requirement defined within the scope of this standard.

SuggestedRemedy

Change to:

If MDIO is not implemented, a similar functionality are to be provided by equivalent means"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Change "this functionality shall be provied by equivalent means."

to "enabling of test modes is provided by equivalent means".

(note this is in 188.6.3, not 188.6.2.2, also, this corrects the issue that the underlying statement of what happens when MDIO IS present is not a requirement...)

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CI **188** SC **188.10.3** P**122** L**4** # **I-105**

Rolfe, Benjamin

Blind Creek Associates

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

It is not clear what "Application of any of the above voltages to the TCI of a DTE in non-automotive applications shall not preclude conformance with 188.10.1 and 188.10.2." means or how it is verified. Likely due to use of "shall not" which is usually wrong.
Is the intention that AFTER application of said voltages, the DTE in non-automotive application will still comply with 188.10.1 and 188.10.2?
This is not completely clear from the above statement "Care should be taken to avoid such connections as they can damage equipment."
It seems odd to require that damaged equipment comply with 188.10.1 and 188.10.2
If the intention is to require that application of telephony voltages to TC1 then it should be positively, and more specifics for "large reactive transients" would need to be provided to enable a test.

Suggested Remedy

Change to:
A conformant DTE shall tolerate application of the DC battery and composite AC signal described above to TC1. Following removal of the applied voltages, the DTE shall meet the requirements stated in 188.10.1 and 188.10.2.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note - this text mirrors all other BASE-T, and PoE clauses for in-building wiring in IEEE Std 802.3. Originally, the text said the equipment might not survive, but still was required to 'not present a safety hazard'. But 802.3 is not a safety standard, so it was changed to relate to conformance with the subclauses that point to safety standards. Somewhere the 'not expected to survive' was lost'. The proposed text is adapted from clause 126 - 2.5G and 5GBASE-T.)

In 188.10.3:
Replace "Application of any of the above voltages to the TCI of a DTE in non-automotive applications shall not preclude conformance with 188.10.1 and 188.10.2."
with, "Although 10BASE-T1M equipment is not required to survive such wiring hazards without damage, application of any of the above voltages shall not preclude conformance with 188.10.1 and 188.10.2."

In 189.7.5:
Replace "Application of any of the above voltages to the TCI of a DTE in non-automotive applications shall not preclude conformance with 189.7.1 and 189.7.2."
with, "Although equipment incorporating an MPI is not required to survive such wiring hazards without damage, application of any of the above voltages shall not preclude conformance with 189.7.1 and 189.7.2."

Insert new PICS to 188.12.4.9 after ES1:

ES2

Telephony voltages for non-automotive applications

188.10.3

Application of telephony voltages does not preclude conformance with 188.10.1 and 188.10.2

M

Yes ☐

N/A ☐