Cl **00** SC P **14** L **3** # 63
Baggett, Tim Microchip

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

Page number in the Table of Contents are off by one page. The page numbers listed are one greater than they should be. This issue follows throughout the table.

For example, Section 1 "Introduction" is listed in the Table of Contents as being on page 28, but the text actually is on page 27.

SuggestedRemedy

Plesae fix the Table of Contents so entries refer to the correct page number.

Response *Response Status* **C**

ACCEPT.

Cl **00** SC **0** P L # 82
Schicketanz, Dieter Reutlingen Universit

Comment Type **E** *Comment Status* **A** *Link Segment*

add the updated reference to the biblography.

SuggestedRemedy

add to bibliography:EC 62153-4-9Ed2Amd1: Coupling attenuation of screened balanced cables, triaxial method Amendment 1: Measuring the screening effectiveness of unscreened single or
multiple balanced pairs

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Resolve comment #81 first.

Page 28, lines 27-35: Delete entry for IEC 61156-13:201x and Editor's Note

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Cl **01** SC **1.1.3** P **27** L **8** # 119
Kim, Yong NIO

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

[PAR scope] 10 Mb/s project uses AUI or MII. 802.3cg uses MII not xGMII. How do I know? It references CL22, which is MII, and MII is referenced in the CRD for this project. This change in D2.3 is technically incorrect.

SuggestedRemedy

Remove 10BASE-T1L and 10BASE-T1S from xMII column in the diagram and also in the note, and put them below MII column in the diagram.

Response *Response Status* **W**

REJECT.

Commenter is incorrect that xMII refers to xGMII and does not refer to MII.
xMII is a general term which applies to all forms of MII.

The note to the figure (as amended to add 10BASE-T1L and 10BASE-T1S) now says: "NOTE—In this figure, the xMII is used as a generic term for the Media Independent Interfaces for implementations of 10BASE-T1L, 10BASE-T1S, and 100 Mb/s and above. For example: for 100 Mb/s implementations this interface is called MII; for 1 Gb/s implementations it is called GMII; for 10 Gb/s implementations it is called XGMII; etc."

Cl **01** SC **1.3** P **27** L **52** # 17
Anslow, Pete Ciena

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

In "Explosive atmospheres - Part 0: Equipment - General requirements" the two instances of " - " should be em-dashes without any spaces as per the five references above this.

SuggestedRemedy

Change the two instances of " - " to em-dashes without any spaces as per the five references above this.

Response *Response Status* **C**

ACCEPT.

Cl **01** SC **1.3** P **27** L **52** # 34
Graber, Steffen Pepperl+Fuchs GmbH

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

Explosive atmospheres - Part 0

SuggestedRemedy

Explosive atmospheres - (using an em dash) Part 0

Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.389a** *P* **29** *L* **24** # 19

Anslow, Pete Ciena

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

After 1.4.494a on line 24 there is a spurious "1.4.389a"

SuggestedRemedy

Delete the spurious text.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete "1.4.389a" on page 29, line 25.

Cl **01** *SC* **1.4.494a** *P* **29** *L* **22** # 18

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A** *PoDL*

"...that are compatible with 10BASE-T1L." does not match the style of the ending of Types A, B, and C PoDL system.

SuggestedRemedy

Change "10BASE-T1L" to "10BASE-T1L PHYs"

Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **22** *P* **32** *L* **10** # 120

Kim, Yong NIO

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

[CSD Compatibility] Changes to CL22 that effect existing exposed interoperability test point that is MII may and likely cause compatibility issues, and potentially deem existing installed base that are compliant to IEEE 802.3-2018 no longer compliant.

It is CLEAR that ALL proposed changes to CL22 is due to inclusion of CL148 PLCA - optional RS Layer that is performing media access control at the cost of effecting compatibility (see http://www.ieee802.org/3/cg/public/Nov2018/Kim_3cg_01a_1118.pdf) to installed base of exposed interoperatbility inteterface. This is not acceptable.

SuggestedRemedy

Reverse all changes to CL22 that effect MII behavior.

Response *Response Status* **W**

REJECT.

Commenter fails to show a compatibility problem.

Commenter is incorrect - use of reserved codes preserves compatibility, as has been successfully done in previous projects.

See http://www.ieee802.org/3/cg/public/Jan2019/Tutorial_cg_0119_final.pdf slide 34.

Straw Poll
I support rejecting comment 120 with the response:
"Commenter fails to show a compatibility problem.

Commenter is incorrect - use of reserved codes preserves compatibility, as has been successfully done in previous projects.

See http://www.ieee802.org/3/cg/public/Jan2019/Tutorial_cg_0119_final.pdf slide 34."
Y:13
N:0
A:3

Cl **22** *SC* **22** *P* **32** *L* **49** # 121

Kim, Yong NIO

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

[CSD Compatibility[]
"... with the exception of 10BASE-T1L (see 146.3.3.1).." Following 10BASE-T1L (see 146.3.3.1) reference and looing at the state diagram in Fig 146-5 and variables, there is no technical reason why 10BASE-T1L needs this exception. The state diagram supports TXER signal on MII, if TXER is present and used along TXEN. Classic TXER signal behavior unto PHY -- historically, this was justified to signal buffer underrun on frame in transmiision. The logic follows like this. IF TXER is present and used, along TXEN, THEN Fig 146-5 supports transmit error. BUT if TXER (all in TXEN relevant states) was not present and used, then there is little use for its support in Fig 146-5. Therefore, inclusion of 10BASE-T1L in this statement is not necessary.

Furthermore, inclusion of 10BASE-T1L (CL146) as referenced above in CL22 distracts from the fact that all modifications to CL22 stems from inclusion of PLCA (CL148) RS layer that is in contention -- that PLCA is a new media access control (MAC) -- optionally used with 10BASE-T1S (CL147). 10BASE-T1L (CL146) PHY works perfectly well with existing 802.3-2018 CL22 MII, and therefore compatible with all legacy installed base M. IIs that are compliant to it, unlike PLCA RS.

SuggestedRemedy

Delete "10BASE-T1L (see 146.3.3.1) and " and modify SF17 in PICS table accordingly.

Response *Response Status* **W**

REJECT.

Commenter fails to show a compatibility problem.

Commenter fails to provide sufficient remedy, as TX_ER is used in clause 146 PCS transmit (and receive) state diagrams to signal transmit error to the far end, aligned with the more complex encoding which has previously only been used in PHYs of 100 Mb/s and greater speed. The proposed remedy fails to address the function in clause 146.

Cl **22** *SC* **22.2.2.5** *P* **31** *L* **49** # 2

Anslow, Pete Ciena

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

At the end of the second paragraph of 22.2.2.5, the base standard has:
". a PHY is operating at 10 Mb/s, or when TX_EN is deasserted."
The first part of this text is retained on lines 48 and 49 of the draft, but ", or when TX_EN is deasserted." in strikethrough font should be shown where this text is no longer present.

SuggestedRemedy

Add ", or when TX_EN is deasserted." in strikethrough font after ". a PHY is operating at 10 Mb/s"

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.2.2.1** *P* **34** *L* **9** # 3

Anslow, Pete Ciena

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

The editing instruction is "Insert oPLCA after the description of oPD as follows:"
but the IEEE Std 802.3bt-2018 amendment has deleted "oPD" in this subclause.

SuggestedRemedy

Change the editing instruction to "Insert oPLCA after the description of oPAF as follows:"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace, "Insert oPLCA after the description of oPD as follows:"

with, "Insert oPLCA in 30.2.2.1 (as amended by IEEE Std 802.3bt-2018) after the description of oPAF as follows:"

Cl **30** *SC* **30.3.9.2.3** *P* **39** *L* **12** # 35

Graber, Steffen Pepperl+Fuchs GmbH

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

The default value is 255;

SuggestedRemedy

The default value is 255.; (add a dot)

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.9.2.3** *P* **39** *L* **12** # 4

Anslow, Pete — Ciena

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

"." missing at the end of the subclause (before the ";")
Same issue in 30.3.9.2.4

SuggestedRemedy

Change "The default value is 255;" to "The default value is 255.;"
at the end of 30.3.9.2.4, change "(inclusive);" to "(inclusive).;"

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.9.2.4** *P* **39** *L* **18** # 122

Kim, Yong — NIO

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

[Comment on unchanged text and with no unresoilved negative].
Just noticed. "Same as aPLCANodeCount" makes perfect sense to me. But I don't think that is appropirate text. 1) It should be in proper syntax. 2) The same as aPLCANodeCount is in conflict with the text in the behavier definition that says range upper limit is nodecount -1.

SuggestedRemedy

Replace it with "INTEGER VALUE in the following range (inclusive): 0 to 255." or ".254", whichever is correct.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Replace "Same as aPLCANodeCount" with "INTEGER" in the APPROPRIATE SYNTAX entry.

Cl **30** *SC* **30.3.9.2.4** *P* **39** *L* **22** # 36

Graber, Steffen — Pepperl+Fuchs GmbH

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

. (inclusive);

SuggestedRemedy

. (inclusive).; (add a dot)

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.9.2.5** *P* **39** *L* **28** # 1

Slavick, Jeff — Broadcom

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

Sections 30.3.9.2.5 and 30.3.9.2.3 use one style to list the valid range, while 30.3.9.2.6 and 30.3.9.2.7 use a different format. Both of which differ from how the base standard has bounded the valid ranges for objects (ie. 30.14.1.6).

SuggestedRemedy

Change the APPROPRIATE SYNTAX entry to be "INTEGER" for 30.3.9.2.3, 30.3.9.2.5, 30.3.9.2.6, and 30.3.9.2.7

In 30.3.9.2.3 add this sentence to the Description of the object "Valid range is 0 to 255 inclusive."

In 30.3.9.2.5 add this sentence to the Description of the object "Valid range is 1 to 255 inclusive."

In 30.3.9.2.6 add this sentence to the Description of the object "Valid range is 0 to 255 inclusive."

In 30.3.9.2.7 add this sentence to the Description of the object "Valid range is 0 to 255 inclusive."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the APPROPRIATE SYNTAX entry to be "INTEGER" for 30.3.9.2.3, 30.3.9.2.5, 30.3.9.2.6, and 30.3.9.2.7

Insert new second sentence in 30.3.9.2.3 (prior to "The default value..."), "Valid range is 0 to 255, inclusive."

Insert new third sentence in 30.3.9.2.5 (prior to "The default value..."), "Valid range is 1 to 255, inclusive."

Insert new second sentence in 30.3.9.2.6 (prior to "By default..."), "Valid range is 0 to 255, inclusive."

Insert new third sentence in 30.3.9.2.7 (prior to "By default..."), "Valid range is 0 to 255, inclusive."

Cl **30** *SC* **30.3.9.2.5** *P* **39** *L* **32** # 5

Anslow, Pete Ciena

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

This text contains two instances of "aPLCATransmitOpportunity" but this is not defined. Should be "aPLCATransmitOpportunityTimer"

SuggestedRemedy

Change two instances of "aPLCATransmitOpportunity" to "aPLCATransmitOpportunityTimer".

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.9.2.6** *P* **39** *L* **44** # 123

Kim, Yong NIO

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

"By default, this attribute is 0.;" should follow other default value statement format.

SuggestedRemedy

Replace it with "The default value is 0.;"

Response *Response Status* **W**

ACCEPT.

Cl **30** *SC* **30.3.9.2.7** *P* **39** *L* **44** # 124

Kim, Yong NIO

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

"By default, this attribute is 128.;" should follow other default value statement format.

SuggestedRemedy

Replace it with "The default value is 128.;"

Response *Response Status* **W**

ACCEPT.

Cl **30** *SC* **30.15.1.1.5** *P* **41** *L* **8** # 37

Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **A** *PoDL*

Modifications of Clause 30.15.1.1.6 aPoDLPSEDetectedPDPowerClass are missing.

SuggestedRemedy

Add the following text: 30.15.1.1.6 aPoDLPSEDetectedPDPowerClass, Editorial instructions: Insert the following new entries in the APPROPRIATE SYNTAX section of 30.15.1.1.6 after the entry for "class 9": Add the following lines: class 10 (tabstop) Class 10 PoDL PD, class 11 (tabstop) Class 11 PoDL PD, class 12 (tabstop) Class 12 PoDL PD, class 13 (tabstop) Class 13 PoDL PD, class 14 (tabstop) Class 14 PoDL PS, class 15 (tabstop) Class 15 PoDL PD.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Insert new clause: 30.15.1.1.6 aPoDLPSEDetectedPDPowerClass

Insert Editors' instruction, "Insert the following new entries in the APPROPRIATE SYNTAX section of 30.15.1.1.6 after the entry for "class 9":

Add the following lines:
class 10 Class 10 PoDL PD
class 11 Class 11 PoDL PD
class 12 Class 12 PoDL PD
class 13 Class 13 PoDL PD
class 14 Class 14 PoDL PD
class 15 Class 15 PoDL PD

Cl **45** *SC* **45.2.1.186a.1** *P* **45** *L* **33** # 125

Thompson, Geoff GraCaSI S.A.

Comment Type **E** *Comment Status* **D** *PMA*

The text: "This action may also initiate a reset in any other MMDs that are instantiated in the same package." is a tutorial tip about implementation which is out of scope for this project and for "conventional" instantiations of 802.3.

SuggestedRemedy

Remove the sentence.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **45** *SC* **45.2.1.186a.4** *P* **45** *L* **18** # 126

Thompson, Geoff GraCaSI S.A.

Comment Type **E** *Comment Status* **A** *EEE*

"Type" of what here? There is no referable antecedent here. The use of the word "type" in this context seems to be without definition.

SuggestedRemedy

Make the note actually mean something specific or delete it.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

On page 46, line 18:

Replace, "depending on type and temperature"

with, "depending on implementation"

Cl **45** *SC* **45.2.1.186d.1** *P* **50** *L* **9** # 97

Kim, Yong NIO

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

[Comment on unchanged text and with no unresoilved negative]. This text "The control and management interface shall be restored to operation within 0.5 s from the setting of bit 1.2297.15." specifies timing limit on reset. Not testable and thus never specified before.

SuggestedRemedy

Remove the referenced sentence.

Response *Response Status* **W**

REJECT.

Commenter is incorrect - this is a standard requirement for resets. See 45.2.1.1.1 Reset (1.0.15), 45.2.1.187.1 PMA/PMD reset (1.2304.15), 45.2.3.69.1 PCS reset (3.2304.15), and 45.2.6.1.1 Reset (6.0.15) for identical requirement text; in additional places the requirement is stated as two sentences, with the same effective requirement: 45.2.2.1.1 Reset (2.0.15), 45.2.3.1.1 Reset (3.0.15), 45.2.4.1.1 Reset (4.0.15), 45.2.5.1.1 Reset (5.0.15), 45.2.7.1.1 AN reset (7.0.15), 45.2.7.19.1 AN reset (7.512.15). These requirements are reflected in 802.3-2018 Clause 45 PICS MM11, MM133, WM11, RM11, RM110, AM11, AM71, PM11, DM11, and TC7.

Cl **45** *SC* **45.2.1.186d.1** *P* **50** *L* **12** # 98

Kim, Yong NIO

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

"During a reset, the 10BASE-T1S PMA shall respond to reads from bits 1.2297.15, 1.8.15:14, and 1.0.15.
Reads for all other bits are indeterminate and the values are invalid." has two problems. 1) PMA does not respond to the reads. The management entity responds to the reads. 2) "all other bits" are not specific -- entire CL45 register space? Clearly that's not what you meant.

SuggestedRemedy

1) remove "PMA"
2) change to "and 1.0.15, and all other read bits from the referenced registers are invalid.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Commenter is incorrect as to item 1 - standard language in 802.3-2018 clause 45 is to name the sublayer responding (e.g., PMA, PMD, PCS, etc.), not the management entity. On item 2 - text may be improved by using standard language used in clause 45 which refers to the register being described:

Replace, "Reads for all other bits are indeterminate and the values are invalid."

with, "All other register bits should be ignored."

Cl **45** *SC* **45.2.1.186e.1** *P* **51** *L* **16** # 99

Kim, Yong NIO

Comment Type **ER** *Comment Status* **R** *Mixing Segment*

My comment number #206 against D2.2 with "Accept in Principle" resulted in parial replacements CL147 to change "multidrop" with "mixing segment", but the comment #206 request was to do careful search and replacement for the whole draft.
L16 "Muiltidrop mode ability" would change to "half-duplex" mode ability in this case.

SuggestedRemedy

Do careful search of whole draft for "multidrop" and replace the text and nearby words to
mixing segment, or
half-duplex, or
shared medium, or
other appropriate wording that already been in use.

Response *Response Status* **W**

REJECT.

During implementation of #206 against d2p2, each occurance of "multidrop" was carefully reviewed. The instances that the commenter refers to relate to the name of the mode, which was specifically excluded from the resolution.

Cl **45** *SC* **45.2.3.68b.5** *P* **54** *L* **40** # 100

Kim, Yong NIO

Comment Type **ER** *Comment Status* **R** *PCS*

[Comment on unchanged text and with no unresoilved negative]. "Fault -- Fault condition detected.. " is just too vague. Does reader assume the "fault" relates to PCS fault? And is it any detectable fault? Any implementation specific faults? So if I read this latched bit as one, what information do I get -- there was a fault and we don't know what caused it. So what value is there? Makes little sense. I cannot even suggest wording that may be satisfactory.

SuggestedRemedy

Assuming this is PCS fault TX or RX.. Reference detected fault types in relevant PCS clauses. If this is just thrown in for any fault and .3cg want it, then say "ANY DETECTED PCS FAULT". If there is no agreement how this is used, then I suggest deleting it.

Response *Response Status* **W**

REJECT.
The referenced text in the table at page 54 line 40 is correct.
The subclause referenced in the subclause field is standard language in clause 45 registers for description of PCS faults in IEEE Std 802.3-2018.

Cl **45** *SC* **45.2.3.68c.3** *P* **56** *L* **53** # 101

Kim, Yong NIO

Comment Type **ER** *Comment Status* **R** *Mixing Segment*

".. When not operating in multidrop mode and.." is not necessary when we agree that multidriop is to be replaced by "mixing segment" and multidrop mode is to be replaced with half-duplex mode, et cetera.

SuggestedRemedy

Remove the referenced text string.

Response *Response Status* **W**

REJECT.

During implementation of #206 against d2p2, each occurance of "multidrop" was carefully reviewed. The instances that the commenter refers to relate to the name of the mode, which was specifically excluded from the resolution.

Cl **45** *SC* **45.2.3.68d.1** *P* **57** *L* **32** # 102

Kim, Yong NIO

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

[Unsatified Comment Re-submit Due to Incorrect use of "Accept in Principle"]
My comment number #211 against D2.2 states my concern where PLCA resides. Just RS? Or also in PCS and/or PMA? I requested remedy is to delete or clarify where PLCA function resides.
The committee resolution was to change "PLCA RS required functions" with "the encoding of BEACON and COMMIT", which completely misses the stated concern.
10BASE-T1S PCS contains PLCA components that are optional. This is entirely inconsistent with PLCA is a optional function in RS layer.
It looks to be that PLCA is also an optional function in PCS layer. If this is the case, the standard should state this. And if the PLCA is also an optional function in PMA layer, it should also be stated as such.

SuggestedRemedy

Comment number #211 requested remedy was "Either delete this [PLCA Support], or clarify which layer[s], PLCA resides." You may want to reverse the changes in D2.3, because the change was not requested.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Accomodated by comment 117.
Response to comment 117 is:
ACCEPT IN PRINCIPLE.
Implement changes in
http://www.ieee802.org/3/cg/public/Feb2019/zimmerman_3cg_01_0219.pdf

Cl **45** *SC* **45.2.3.68f** *P* **58** *L* **9** # 38

Graber, Steffen Pepperl+Fuchs GmbH

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

Table 45-150f

SuggestedRemedy

Table 45-237f

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.68f** *P* **58** *L* **9** # 6

Anslow, Pete Ciena

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

Cross-reference to "Table 45-150f" should be a cross-reference to "Table 45-237f"

SuggestedRemedy

Change cross-reference to be to "Table 45-237f"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.68f** *P* **58** *L* **17** # 105

Kim, Yong NIO

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

Also line 23. "PhysicalColCnt". There is only one collision type -- collision on the medium. It should state "CollsionCnt" to not cause confustion.

SuggestedRemedy

Replace "PhysicalColCnt" to "CollisionCnt"

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
The ballot resolution committee believes that changing the name as the commenter suggests would cause additional confusion; however, the name should be changed to align better with the behavior of the counter.

Change all occurances of "PhysicalColCnt" to "CorruptedTxCnt"

Cl **45** *SC* **45.2.3.68f** *P* **58** *L* **17** # 106

Kim, Yong NIO

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

[Unsatisifed Comment - Reject, with info to the commenter that has little relevance to the concern.]
My comment #214 on D2.2 had a response as a part of the reject, with the following info: "REJECT.
When optional PLCA RS is enabled, the MAC will count the number of collisions reported by the RS via the PLS_SIGNAL.indication primitive. Having a register that counts the number of corrupted transmissions at the MDI detected at the PCS or PMA sublayer is, as commenter says, a useful indication for diagnosing misconfiguration problems and to evaluate the line quality."
My comment #214 was: "I see the benefits of # of collisions experienced for a given packet transmit attempts -- indicates some qualitative measure of congestion. I don't see the value nor relevance of counting collisions since beginning of time. I cannot locate (easily, anway) justification for adding this counter -- and even more so in PHY/PCS rather than in the MAC."
The concern still stands. Counting collisions ONLY when the local MAC attempted a collision from the begining of time does NOT provide any useful value. In addition, the comment response note suggests that it is NOT counting collision, but corrupted transmissions, which is NOT collision. If you meant corrupted transmission, then it you should say corrupted transmission (although I don't see how that is differentialed from FCS and Alignment error and short events, et cetera). If you meant collision, I do not see any benefits to this counter beyond several [real] collision related counters already in place (e.g. one, more than one, 16, etc).

SuggestedRemedy

The remedy request is still the same as my prior comment -- "Please delete this counter, or reject this comment and point me to the rationale and utility
of this counter."

Response *Response Status* **W**

REJECT.

The ballot resolution committee believes that rationale is provided in the response to comment #214 against d2p2. Commenter provides no new information and insufficient remedy.

Cl **45** *SC* **45.2.3.68f** *P* **58** *L* **18** # 104
Kim, Yong NIO

Comment Type **ER** *Comment Status* **R** *MDI*

Also line 25. ".MDI.". There is no MDI defined in D2.3. If my other comment is rejected, consider this comment.

SuggestedRemedy

Replace ".MDI." to ".medium."

Response *Response Status* **W**

REJECT.

The ballot resolution committee suspects that the commenter is confusing MDI with MDI connector. The MDI is a defined interface point in Clause 147.

Cl **45** *SC* **45.2.3.68f** *P* **58** *L* **18** # 103
Kim, Yong NIO

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

[Unsatified Comment - "Accept in Principle"]
My comment #212 on D2.2 suggested a remedy that was not accepted. Text in D2.3 introduced bigger concern (the original was just cut-&paste editorial error).
Also line 25. ".results in a corrupted signal at.the MDI..." is no way to describe collision on the medium. Corrupted singal could be caused by many ways, one of which is contention on the wire. Detection is also an issue that strong station may not see corruptioned signal during a contention on a wire.

SuggestedRemedy

Please referece the sub-clause where collision detect on the medium is specified, and change the text to "..results in collision detect on the medium" I could not find the clause easily.

Response *Response Status* **W**

REJECT.
The name of this counter has been changed by the response to comment 105 to better align with what the counter counts.

The ballot resolution committee believes that accepting this comment would make the text in this clause inconsistent with the rest of the draft, particularly clause 147.3.5.

The requirement there is "When operating in half-duplex mode, the 10BASE-T1S PHY shall detect when a transmission initiated locally results in a corrupted signal at the MDI as a collision." The descriptive text at 45.2.3.68f line 18 precisely repeats this requirement without sending the reader to look up what is meant by another term.

Cl **45** *SC* **45.2.7** *P* **58** *L* **39** # 20
Marris, Arthur Cadence Design Syst

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

If text is inserted I don't think it should be underlined

SuggestedRemedy

Remove underling for rows 7.526 and 7.527 in Table 45-309

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7.26** *P* **61** *L* **21** # 107
Kim, Yong NIO

Comment Type **ER** *Comment Status* **R** *Editorial*

Not an issue with the D2.3 text, but companion CMP version has this table unmodified -- whereas clean version has 7.527.5 and 7.527.4 turned to reserved. Provide machine generated CMP version or some other means to ensure all changes are noted in CMP file going forward. And somehow this table is there twice, once w/o changes, and once post-changes, but none with revision marks.

SuggestedRemedy

I know it is a lot of work to edit drafts, but would you machine-genrate the dff on CMP PDF going forward?

Response *Response Status* **W**

REJECT.
(No change to draft).
CMP file was machine-generated, what the commenter describes is how Framemaker 10 handles these changes.

Cl **45** *SC* **45.2.9.2.7** *P* **63** *L* **25** # 21
Marris, Arthur Cadence Design Syst

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

"Change the 42.2.9.2.7 as follows:"

SuggestedRemedy

"Change the 42.2.9.2.7 as follows:"

should be:
"Change 45.2.9.2.7 as follows"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

P63, L25: Replace, "Change the 42.2.9.2.7" with, "Change 45.2.9.2.7"

P44, L22: Replace, "Change the text of 45.1.185.2" with, "Change 45.1.185.2"

P97, L25: Replace, "Change the text in 104.7" with, "Change 104.7"

Cl **45** *SC* **45.2.9.2.7** *P* **63** *L* **25** # 7
Anslow, Pete Ciena

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

"Change the 42.2.9.2.7 as follows:" should be "Change 45.2.9.2.7 as follows:"
(delete "the" and change 42 to 45)

SuggestedRemedy

Change the editing instruction to "Change 45.2.9.2.7 as follows:"
(delete "the" and change 42 to 45)

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.9.2.7** *P* **63** *L* **27** # 8
Anslow, Pete Ciena

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

"104.4.1" should be a cross-reference

SuggestedRemedy

Make "104.4.1" a cross-reference

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.13.4** *P* **67** *L* **3** # 39
Graber, Steffen Pepperl+Fuchs GmbH

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

Table 45-351f and Table 45-351e on page 67 and references to these tables are not in alphabetic order.

SuggestedRemedy

Please exchange numbering of Tables 45-351e and 45-351f, so that Table 45-351e is coming in the text before Table 45-351f. Also change the reference in line 3 to Table 45-351e and the reference in line 34 to Table 45-351f.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Page 67, line 3: Replace, "Table 45-351f" with "Table 45-351e" and add "." to the end of the sentence.

Page 67, line 6: Replace, "Table 45-351f" with "Table 45-351e"

Page 67, line 34: Replace, "Table 45-351e" with "Table 45-351f" and add "." to the end of the sentence.

Page 67, line 37: Replace, "Table 45-351e" with "Table 45-351e"

Cl **45** *SC* **45.2.13.4** *P* **67** *L* **6** # 88
Maguire, Valerie The Siemon Company

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

Incorrect table title.

SuggestedRemedy

Replace "PLCA status register bit definitions" with "PLCA burst mode register bit definitions"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.13.6** *P* **67** *L* **41** # 108

Kim, Yong NIO

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

[Comment against texts that may not have changed from D2.2 to D2.3].
"PLCA is actively receiving or transmitting the BEACON". If I were to take this text literally, and I do, this means that this bit is set only while BEACON is being transmitted or received, and clear all the other times. So this register bit sort of behaves like BEACONEN for BEACON_TX or BEACON_RX, like TXEN for TXD on MII. Very real-time status bit. If this is what's meant, I don't get the usefulness of this in management register. Is this really what you meant?

SuggestedRemedy

Delete this status register bit, or modify the description on line 51 or line 41 or both.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Partially accomodated by comment 109, which deletes Table 45-351e and 45.2.13 and subclauses.

In clause 30, make the following changes:
At first sentence of BEHAVIOUR DEFINED AS in 30.3.9.1.2, replace "PLCA Reconciliation Sublayer is actively receiving or transmitting the BEACON."

with "PLCA Control state diagram is receiving or transmitting BEACON signals. This parameter maps to the plca_status variable in 148.4.7."

In clause 148, make the following changes:
At 148.4.7.2, replace "The plca_status signal is used to report whether PLCA nodes are actively transmitting or receiving the BEACON."

with, "If plca_status is true, BEACONs are being received or transmitted, and the PLCA Control state diagram is in normal operation. If plca_status is false, the PLCA Control state diagram has been in the DISABLE, RESYNC, or RECOVER state for greater than the duration of the plca_status timer."

Cl **45** *SC* **45.5.3.7** *P* **72** *L* **46** # 40

Graber, Steffen Pepperl+Fuchs GmbH

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

The 10BASE-T1L PCS fault bit is implemented with latching high behavior.

SuggestedRemedy

Bit 3.2279.7 is implemented with latching high behavior. (Align the text with RM170, RM171, and RM172, to keep a decreasing bit ordering, it would also make sense to move RM173 one row up).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Page 72, line 48: Replace, "The 10BASE-T1L PCS fault bit is implemented with latching high behavior" with "Bit 3.2279.7 is implemented with latching high behavior"

Swap the entries for RM172 and RM173 so that RM172 is for subclause 45.2.3.68b.5 and RM173 is for subclause 45.2.3.68b.6

Cl **45** SC **45.5.3.24** P **75** L **8** # 109
Kim, Yong NIO

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

[Comment against texts that may not have changed from D2.2 to D2.3].
WRT "..PLCA MMD". MMD definition is (from CL1.5 Abbreviations) "MDIO Manageable Device". PLCA RS is on the wrong side of MDIO for it to be managed as MMD. If you agree, then these management regisers may have to go to layer management or other places above the MDIO (MII).

SuggestedRemedy

Move PLCA management to where where it should be, layer management somehere. By definition, not MMD.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Remove MDIO Manageable Device (MMD) registers for PLCA. PLCA will be managed as a clause 30 object.
Delete changes on P42 to text in 45.2, tables 45-1, and 45-2.

Delete 45.2.13 and its subclauses.

In 148.4.5.2:

Delete paragraph "When the MDIO is present" on P 229 L 7-11 (under plca_reset).

Delete paragraph "When the MDIO is present" on P 229 L 16-21 (under plca_en).

Delete third and fourth sentences of paragraph under local_nodeID "When MDIO is present. equivalent means." on P229 L49-51.

Delete second and third sentences of paragraph under plca_node_count "When MDIO is present. equivalent means." on P230 L4-6.

Delete third and fourth sentences of paragraph under max_bc "When MDIO is present, . equivalent means." on P230 L27-30.

In 148.4.5.4:

Delete third and fourth sentences of paragraph under burst_timer "When MDIO is present,. equivalent means." on P230 L49-51.

Delete second and third sentences of paragraph under to_timer "When the MDIO is present. equivalent means." on P 231 L7-9.

In 148.4.7.2:
Delete third sentence of paragraph under plca_status "When MDIO is present this signal maps to register 28.15.15." at P237 L1.

Cl **78** SC **78.2** P **76** L **33** # 9
Anslow, Pete Ciena

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

The IEEE Style manual has:
In numbers of four digits, the space is not necessary, unless four-digit numbers are grouped in a column with numbers of five digits or more.
In the addition to Table 78-2, the numbers "6000" and "6300" are in columns containing numbers with five digits, so should include the space.

SuggestedRemedy

Change "6000" to "6 000" and change "6300" to "6 300"

Response *Response Status* **C**

ACCEPT.

Cl **98** SC **98.5.5** P **83** L **40** # 41
Graber, Steffen Pepperl+Fuchs GmbH

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

tx_bit_cnt Ü tx_bit_cnt + 1

SuggestedRemedy

tx_bit_cnt <= tx_bit_cnt + 1 (replace Ü by <=)

Response *Response Status* **C**

ACCEPT.

Cl **104** *SC* **104.1.3** *P* **91** *L* **13** # 110

Kim, Yong NIO

Comment Type **E** *Comment Status* **A** *PoDL*

The new text "Note that a link segment, as defined in 1.4.309, implies a point-to-point link. Multidrop mode for 10BASE-T1S (see Clause 147) is not supported by this clause." is at best confusing. I think you meant to say explicitly that 10BASE-T1S full-duplex or half-duplex over point-to-point link segment supports PoDL.

SuggestedRemedy

Replace the referenced text with "Only the 10BASE-T1S full-duplex or half-duplex over point-to-point link segment supports PoDL". Or alternatively in the negative "10BASE-T1S operating half-duplex over shared medium that is not a link segment does not support PoDL". If you don't like either, please craft text you may like better in a more explicit statement.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace:
"Note that a link segment, as defined in 1.4.309, implies a point-to-point link. Multidrop mode for 10BASE-T1S (see Clause 147) is not supported by this clause."
with
"PoDL systems are not specified for mixing segments."

and begin new paragraph after the new inserted sentence, starting with "A Type A or Type C…"

Cl **104** *SC* **104.3** *P* **82** *L* **21** # 58

Zimmerman, George CMEC/ADI, APL Gp,

Comment Type **E** *Comment Status* **A** *PoDL*

All AWG references should be xx mm (yy AWG): The listing of cable gauge is in AWG, and not mm (AWG) as per SI units in the style guide. This happens in several places and effects clauses 104, 146, 147, and annex 146B

SuggestedRemedy

104.3: P82 L21: 9th row of Table 104-1a, change first entry from "Cable AWG" to "Cable mm (AWG)", and replace entries in row as follows (commas indicate next column): "1.02 mm (18 AWG) , 1.63 mm (14 AWG), 0.51 mm (24 AWG), 1.02 mm (18 AWG) , 1.63 mm (14 AWG), 0.51 mm (24 AWG)"

P156 L30: 146.7.1.3 Change "14 AWG (1.63 mm)" - to "1.63 mm (14 AWG)"

P160 L10: 146.8.1 change "for 18AWG to 26AWG in", to "for 1.02 mm (18 AWG) to 0.40 mm (26 AWG) in" and move line to be with preceding paragraph

P206 L6: 147.9.1 change "for 18AWG to 26AWG in", to "for 1.02 mm (18 AWG) to 0.40 mm (26 AWG) in"

P247 L9: 146B.1.1.1 Table 146B-1 Change first column (header and entries) from "AWG (mm)" to "mm (AWG)"

P248 L11: 146B.1.2 Figure 146B-2 change "14 AWG to 18 AWG cable" to "1.63 mm (14 AWG) to 1.02 mm (18 AWG) cable" and change "< 18 AWG cable" to "< 1.02 mm (18 AWG) cable" in two locations.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement changes as proposed except change the first location reference - page 82 should be page 92.

Cl **104** *SC* **104.5.3.5** *P* **95** *L* **38** # 10

Anslow, Pete Ciena

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

"Table 104-11" should be a cross-reference

SuggestedRemedy

Make "Table 104-11" a cross-reference.

Response *Response Status* **C**

ACCEPT.

Cl **104** *SC* **104.7.1.3** *P* **101** *L* **44** # 42
Graber, Steffen Pepperl+Fuchs GmbH

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

PSEs that that suport .

SuggestedRemedy

PSEs that support . (remove double "that")

Response *Response Status* **C**

ACCEPT.

Cl **104** *SC* **104.7.1.4** *P* **102** *L* **26** # 11
Anslow, Pete Ciena

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

In Equation (104-5) "min" is a function not a variable, so should not be italic font.
Same issue for Equation (104-6)

SuggestedRemedy

Change "Min" to "min" in upright font in both Equation (104-5) and Equation (104-6)

Response *Response Status* **C**

ACCEPT.

Cl **104** *SC* **104.7.2** *P* **103** *L* **29** # 33
Bhagwat, Gitesh Analog Devices

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

A decision box in the flowchart says"VOLT_POWER_INPUT READ?" This command is Read VOLT_POWER_INFO

SuggestedRemedy

Change "VOLT_POWER_INPUT READ?" to "VOLT_POWER_INFO READ?"

Response *Response Status* **C**

ACCEPT.

Cl **104** *SC* **104.7.2.5** *P* **105** *L* **22** # 43
Graber, Steffen Pepperl+Fuchs GmbH

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

104.7.28

SuggestedRemedy

104.7.2.8 (dot is missing)

Response *Response Status* **C**

ACCEPT.

Cl **104** *SC* **104.7.2.6** *P* **105** *L* **22** # 12
Anslow, Pete Ciena

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

In the editing instruction, "104.7.28" should be "104.7.2.8"

SuggestedRemedy

In the editing instruction, change "104.7.28" to "104.7.2.8"

Response *Response Status* **C**

ACCEPT.

Cl **104** *SC* **104.7.2.6** *P* **105** *L* **28** # 44

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **A** *PoDL*

In first sentence Read_VOLT_POWER_INFO command is used, in the following sentences Read_VOLT_POWER_INFO function command is used (2 occurrences within the same paragraph). Similar wording (with/without function) is also used in 104.7.2.7 and 104.7.2.8. Also here the wording should be unified.

SuggestedRemedy

As the same command is being used, please unify the wording. Suggestet is to use Read_VOLT_POWER_INFO command in all three occurrences within this paragraph. Do the same for 104.7.2.7 and 104.7.2.8.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace, "Read_VOLT_POWER_INFO function command"

with, "Read_VOLT_POWER_INFO command"

in header of clause 104.7.2.6 and in two locations in 104.7.2.6.

Replace, "Write_POWER_ASSIGN function command"

with, "Write_POWER_ASSIGN command"

in header of clause 104.7.2.7 and in two locations in 104.7.2.7.

Replace, "Read_POWER_ASSIGN function command"

with, "Read_POWER_ASSIGN command"

in header of clause 104.7.2.7 and in two locations in 104.7.2.7.

Cl **104** *SC* **104.9.2.2** *P* **107** *L* **23** # 13

Anslow, Pete — Ciena

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

"IEEE Std 802.3bu-2016" should be "IEEE Std 802.3cg-201x"

SuggestedRemedy

Change "IEEE Std 802.3bu-2016" to "IEEE Std 802.3cg-201x"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "IEEE Std 802.3bu-2016" to "IEEE Std 802.3-2018 as amended by IEEE Std 802.3cg-201x" on lines 23 and 30

Cl **146** *SC* **146.2** *P* **113** *L* **36** # 111

Kim, Yong — NIO

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

[Comment against texts that may not have changed from D2.2 to D2.3].
In this statement "The 10BASE-T1L PHY uses the Media Independent Interface (MII) as specified in Clause 22 instead of a Gigabit Media Independent Interface (GMII).", the reference to GMII makes little sense. GMII is not relevant to 10 Mbps project. Just say this PHY uses MII. If you want to say "instead of" something, it should say "instead of AUI". Because AUI had been the mandatory media independant interface for 10 Mbps projects.

SuggestedRemedy

Change the referenced text to: "The 10BASE-T1L PHY uses the Media Independent Interface (MII) as specified in Clause 22."

Response *Response Status* **W**

ACCEPT.

Cl **146** *SC* **146.3.5** *P* **136** *L* **29** # 127

Thompson, Geoff — GraCaSI S.A.

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

The Loopback Mode definition gives no guidance to either the designer or the customer as to how much of the circuitry is to be included in the looped signal path. Further there is not even any requirement for the vendor to reveal such information to the customer.

SuggestedRemedy

Actually specify something and/or reveal it in the PICS.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Insert new note following paragraph in 146.3.5 (P136 L36):

NOTE—The signal path through the PCS that is exercised in the loopback mode of operation is implementation specific, but it is recommended that the signal path encompass as much of the PCS circuitry as is practical. The intention of providing this loopback mode of operation is to permit a diagnostic or self-test function testing the transmit and receive data paths.

Cl **146** *SC* **146.4.3** *P* **138** *L* **34** # 112
Kim, Yong NIO

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

[Relatecd to rejected comment #278 on D2.2].

Full-duplex operation over one pair should have echo-cancellation (cancel TX from RX) onto/from media. I cannot find any reference to this function. 100BASE-T1 std, in 96.4.3 has text of "PMA Receive has Signal Equalization and Echo Cancellation sub-functions These sub-functions are used to determine the receiver performance and generate loc_rcvr_status..."

REJECT based on comment on unchanged text does NOT relive the WG from forwarding std draft that is considered incomplete or known errors. It should be clear to the readers of our standard what function are to be impliemented (some of which that are REQUIRED for interoperability are to be specified for the standard to eb complete). How the echo cancellation may be implemented may be left out, but *architecture (which is what we do in 802.3) must be described and specified.

SuggestedRemedy

Please provide a reference to echo cancellation function. And it would be good to have a reference to that function in CL 146.4.3 introductory paragraph (not there now). Just to be clear -- I am not asking for echo cancellation function specification. I am asking for architectual existance of echo cancellation function that must be there for this PHY to work.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Add the following new sentences to the end of the first paragraph of 146.4.3 (P138 L34) (after "signal flow of the 10BASE-T1L PMA Receive function.")
"To achieve the indicated performance, it is highly recommended that PMA Receive include the functions of signal equalization and echo cancellation. The sequence of symbols assigned to tx_symb_vector is needed to perform echo cancellation."

Cl **146** *SC* **146.5.4.1** *P* **147** *L* **1** # 14
Anslow, Pete Ciena

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

"NOTE- In" should be "NOTE-In" (no space)

SuggestedRemedy

Delete the space

Response *Response Status* **C**

ACCEPT.

Cl **146** *SC* **146.5.4.1** *P* **147** *L* **1** # 57
Maguire, Valerie The Siemon Company

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

Incorrect formatting of the NOTE

SuggestedRemedy

Format the NOTE on lines 1-3 using paragraph tag "NOTE"

Response *Response Status* **C**

ACCEPT.

Cl **146** *SC* **146.5.5.3** *P* **149** *L* **51** # 45
Graber, Steffen Pepperl+Fuchs GmbH

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

After " magnitude of" there is an additional space, which needs to be removed.

SuggestedRemedy

Please remove space at the end of the line.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **146** *SC* **146.7.1** *P* **153** *L* **15** # 85
Shariff, Masood CommScope

Comment Type **ER** *Comment Status* **D** *Link Segment*

Need to broaden the market potential for 10BASE-T1L to include examples of enterprise applications such as indoor/outdoor building surveillance. Note that in the parallel section 147.7 for 10BASE-T1S, "building automation controls" is listed as an example for enterprise applications.

SuggestedRemedy

Proposed change: The transmission characteristics for the 10BASE-T1L link segment are specified to support applications
requiring long reach such as indoor/outdoor building surveillance, industrial, and process control,

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **146** *SC* **146.7.1.5** *P* **157** *L* **5** # 81
Schicketanz, Dieter Reutlingen Universit

Comment Type **E** *Comment Status* **A** *Link Segment*

During the discussion of the presentation Schicketanz_coupling-attenuation _3cg_06_0219 at the February 6 task force teleconference there was no oposition to the proposal to remove the measurement reference from the main body.

SuggestedRemedy

Delete sentence "The coupling attenuation is tested as specified in IEC NP 61156-13" Line 5 and 6. Delete Editors note line 8-12.

Response *Response Status* **C**

ACCEPT.
See http://www.ieee802.org/3/cg/public/adhoc/Schicketanz_coupling-attenuation%20_3cg_06_0219.pdf page 3.
- IEC TC46 decided not to pursue the work in a cable standard but in a measurement standard.
- IEC 62153-4-9Ed2Amd1: Coupling attenuation of screened balanced cables, triaxial method
- The amendment will specify the setup to measure frequencies below 1 MHz.

Implement suggested remedy

Cl **146** *SC* **146.7.5.2** *P* **199** *L* **43** # 83
Shariff, Masood CommScope

Comment Type **ER** *Comment Status* **A** *Link Segment*

Typo

SuggestedRemedy

encoded using encoded using
DME as in 147.4.2 to encoded using
DME as in 147.4.2.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "encoded using encoded using DME as in 147.4.2." to "encoded using DME as in 147.4.2."

Editor's implementation note - this is actually on 147.7.5.2. (Apply suggested remedy to 147.7.5.2)

Cl **146** *SC* **146.7.5.2** *P* **199** *L* **48** # 84
Shariff, Masood CommScope

Comment Type **ER** *Comment Status* **R** *Link Segment*

Redundant with same text on line 47

SuggestedRemedy

Delete " when operating in multidrop mode."

Response *Response Status* **C**

REJECT.
Comment is out of scope of the recirculation, on unchanged text and does not fix a problem.

The second instance of "when operating in multidrop mode" refers to the specification for the "I" symbol, whereas the first instance refers to the mode of the PHY in the test mode.

Cl **146** *SC* **146.8** *P* **159** *L* **1** # 113
Kim, Yong NIO

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

[Relatecd to Accept in Principle comment #231 on D2.2].
Comment response agred that connectors described MAYBE used at the medium. But the tile of this subclause still say "146.8 MDI specifications".

SuggestedRemedy

Previous remedy was to use "MDI considerations", and still stands.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Commenter is incorrect -
The connectors in 146.8.1 may be optional, however, any interface must meet the specifications in 146.8 in its subordinate subclauses which provide specifications at the MDI. 146.8.2 and 146.8.3 provide electrical specifications for the MDI, 146.8.4 and 146.8.5 specify fault tolerance. "considerations" is not appropriate - these are requirements common to BASE-T and BASE-T1 PHY specifications in 802.3.

However, clause 146 is missing PICS entries for these requirements, and this may be the source of the commenter's confusion.

Add new subclause 146.11.4.5 (after Link Segment), and renumber subsequent PICS subclauses. Containing PICS entries from http://www.ieee802.org/3/cg/public/Feb2019/Clause 146 PICS.pdf with editorial license to conform to PICS formatting.

Cl **146** SC **146.8.1** P **159** L **14** # 46

Graber, Steffen — Pepperl+Fuchs GmbH

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

In Figures 146-26 to 146-31 first the IEC63171-1 Plug and Jack, then the IEC61076-3-125 Plug and Jack and then the mating faces for both connectors are shown. It seems to be more suitable to first show the three IEC63171-1 figures (plug, jacket and mating face) and then the three IEC61076-3-125 figures (plug jack and mating face).

SuggestedRemedy

If accepted, change ordering of the figures as described in the comments section and adapt the text references to fit the new ordering.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Move anchor for Figure 146-30 before Figure 146-28 and renumber.
(no change text required because cross-references will adjust the numbering.)

Cl **146** SC **146.8.1** P **161** L **3** # 47

Graber, Steffen — Pepperl+Fuchs GmbH

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

Table 146-8 defines "Contact", Figure 146-30 defines "Pin" and Figure 146-31 just shows 1 and 2.

SuggestedRemedy

Please unify the naming in table 146-8, Figure 146-30 and Figure 146-31.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change labels on Figure 146-30 from "PIN 1" and "PIN 2" to "1" and "2" respectively.
(leave table 146-8 as is - this is standard nomenclature)

Cl **146** SC **146.8.4** P **161** L **38** # 22

Bains, Amrik — Cisco Systems

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

"The wire pair of the MDI shall withstand without damage the application of positive voltages of up to 60 V dc with the source current limited to 1400 mA, under all operating conditions, for an indefinite period of time"

- this would limit the power that could be supplied on an 802.3cg link to less than that which might be sourced from an SELV LPS power source which might be provisioned. The standard would be better future proofed if 2000 mA were allowed, so that 100VA could be provided from a 50V source.

Same comment applies on Page 208 Line 39 to 147.9.1

SuggestedRemedy

replace "1400 mA" with "2000 mA" in both 146.8.1 and 147.9.1

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147** *P* **173** *L* **1** # 116

Kim, Yong NIO

Comment Type **TR** *Comment Status* **R** *Link Segment*

[Related to, but not same as, rejected comment #210 on D2.2, where the concern was Broadmarket Potential of 10BASE-T1S half-duplex point-to-point PHY (the only mandatory mode] that does not support repeaters]
Really a chater and scope of this PHY clause and CSD concern.
This clause has three separate PHYs that should not be considered as one PHY with two options.

Full-Duplex P2P PHY: Performs echo cancellation full-duplex over one transmission line.

Half-Duplex P2P PHY: Tradition would say echo cancellation in support of full-duplex on the medium, and performs logical collision detection. But in this clause, it has been silent on echo cancellation and collision detection method. Comments requesting these two to be clarifed is rejected as "implementation dependeant" (my comment #242 on D2.2). 100% collision detection assurance (architecturally) that has been our requirements is completely ignored in this project. Echo cancellation + logical collision would be satisfactory (common with Full-duplex P2P PHY), or collision detection on shared medium without echo cancelation (whatever it is... it's missing in all drafts up to D2.2. In D2.3 states "corrupted signal at MDI" is deemed as collsion (147.3.5), without any supporting material that assures 100% collision detection.

Half-Duplex Shared Medium PHY: Tradition would say no echo cancellation but detect multiple transmissions on the wire through analog (DC level) means. In this clause, it has been silent on collision detection method. Comment requesting collision detection function to be clarified is rejected as implementation dependant. 100% collision detection assurance (architecturally) that has been our requirements is completely ignored in this project.

Looks like there is one PHY that does echo-cancellation, one PHY that does NOT do echo-cancellation and undefined (or just "data corruption" in D2.3) collission detect method, and one PHY that may be of some combination of the two.

SuggestedRemedy

Pick the one PHY that meets CSD and objectives as written, or split this clause into at least two (one for P2P and one for Shared medium) separate PHY clauses and modify the CSD and objects as appropirate.

Response *Response Status* **W**

REJECT.
Commenter fails to demonstrate a problem, and, clause is consistent with 802.3 objectives as approved, which have one phy with multiple modes, consistent with previous projects.

Cl **147** *SC* **147.1** *P* **173** *L* **7** # 114

Kim, Yong NIO

Comment Type **E** *Comment Status* **R** *Link Segment*

On editors note WRT multidrop mode.

half-duplex shared medium. We used to call this just Ethernet, before 802.3.

SuggestedRemedy

half-duplex shared medium. No room for confusion.

Response *Response Status* **C**

REJECT.
Commenter provides insufficient remedy.
A name of a mode is needed, but commenter provides "half-duplex shared medium" to substitute for "multidrop mode", which seems to indicate the medium itself.
If the commenter actually meant "half-duplex shared medium mode" instead of "multidrop mode" then the existing name is more appropriate as the proposal is liable to cause understanding issues with its length.

Straw poll
I support the resolution to comment 114 as REJECT, with the explanation:

Commenter provides insufficient remedy.
A name of a mode is needed, but commenter provides "half-duplex shared medium" to substitute for "multidrop mode", which seems to indicate the medium itself.
If the commenter actually meant "half-duplex shared medium mode" instead of "multidrop mode" then the existing name is more appropriate as the proposal is liable to cause understanding issues with its length.

Y:13
N:0
A:4

Cl **147** *SC* **147.1** *P* **173** *L* **7** # 27

Huszak, Gergely Kone

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

Editor's note will have become stale

SuggestedRemedy

Remove editor's note that is at lines 6-10

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.1** *P* **173** *L* **30** # 115

Kim, Yong NIO

Comment Type **E** *Comment Status* **A** *MDI*

[Related to, but not same as, withdrawn comment #180 on D2.2].
"10BASE-T1S does not define an AUI" here and also in 146.1, Pg 109, L 10, "10BASE-T1L does not define an AUI" are correct statements but absolutely not relevant. AUI is defined in CL7. What may be meant with the statement is "10BASE-T1S does not support an AUI". Even "10BASE-T1S does not have an AUI" is more relevant. Assuming this is the case, the text should be changed to reflect it.

SuggestedRemedy

Replace "10BASE-T1S does not define an AUI" to "10BASE-T1S does not support an AUI". And if this comment is accepted, also do it for 10BASE-T1L.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Replace "10BASE-T1L(S) does not define an AUI." with
"10BASE-T1L(S) follows an integrated PCS and PMA architecture, and therefore does not support an AUI (See Figure 1-1)."

Straw poll (Chicago rules, except "none of the above" is exclusive of other choices):
Options:
A: Reject, comment out of scope, draft is correct, and reflects content of clause 147.
B: Replace "10BASE-T1L(S) does not define an AUI." with
"10BASE-T1L(S) follows an integrated PCS and PMA architecture, and therefore does not support an AUI (See Figure 1-1)."
C: Delete "10BASE-T1L(S) does not define an AUI."

I support resolving this comment with:
A:2
B:15
C:0
None of the above:0

Cl **147** *SC* **147.1.2** *P* **174** *L* **2** # 76

Asmussen, Jes Rockwell Automation

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

Would be nice to explain the purpose of 4B/5B encoding or provide a reference else where that explains the purpose

SuggestedRemedy

Change "4B/5B encoding is used" to "4B/5B encoding is used to support the transmisson of data as well as control symbols (see 147.3.2.4)".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "4B/5B encoding is used" to
"Following scrambling of the data, 4B/5B encoding is performed (see 147.3.2.4)."

Cl **147** *SC* **147.1.2** *P* **174** *L* **10** # 28

Huszak, Gergely Kone

Comment Type **E** *Comment Status* **D** *Editorial*

In Figure 147-1, the dotted dividers on the left- and right-hand sides of "HIGHER LAYERS" do not match in style and are not located correctly in the Z-order, and those originated from the stack labeled "OSI REFERENCE MODEL LAYERS" do not align well

SuggestedRemedy

Fix all these

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.2** *P* **175** *L* **2** # 29

Huszak, Gergely — Kone

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

In Figure 147-2, the syntax of the primitives is not harmonized: some are with, while others are without their arguments

SuggestedRemedy

Either remove the arguments from PMA_LINK.request and PMA_LINK.indication, or add those to PMA_UNITDATA.indication, PMA_UNITDATA.request, PMA_CARRIER.indication and PCS_STATUS.indication (let the editor propose the actual resolution)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
In Figure 147-2:
- Change label from "PMA_LINK.indication (link_status)" to "PMA_LINK.indication" going to the TDI
- Change label from "PMA_LINK.request (link_control)" to "PMA_LINK.request" coming from the TDI)

Cl **147** *SC* **147.2** *P* **175** *L* **14** # 59

Zimmerman, George — CMEC/ADI, APL Gp,

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

Figure 147-2 - delete parameters on PMA_LINK.indication/request going to the TDI. Interface diagrams do not usually show parameters of primitives. (functional block diagrams may)

SuggestedRemedy

In Figure 147-2
Change label from "PMA_LINK.indication (link_status)" to "PMA_LINK.indication" going to the TDI
Change label from "PMA_LINK.request (link_control)" to "PMA_LINK.request" coming from the TDI

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Already resolved by #29.
Proposed resolution for #29 is as follows:
>>>>
PROPOSED ACCEPT IN PRINCIPLE.
In Figure 147-2:
- Change label from "PMA_LINK.indication (link_status)" to "PMA_LINK.indication" going to the TDI
- Change label from "PMA_LINK.request (link_control)" to "PMA_LINK.request" coming from the TDI)
<<<<

Cl **147** *SC* **147.2** *P* **175** *L* **38** # 30

Huszak, Gergely — Kone

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

In Figure 147-2, "PMA SERVICE INTERFACE" should be centered vertically to the labels to its left and right

SuggestedRemedy

Re-align the this label

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.2.1.1** *P* **176** *L* **13** # 78

Asmussen, Jes — Rockwell Automation

Comment Type **E** *Comment Status* **D** *Withdrawn*

Clause 147 uses rx_sym parameter name but outside this clause the parameter rx_sym_vector is used. Is this intentional?

SuggestedRemedy

Change rx_sym parameter name to rx_sym_vector.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.2.1.1** *P* **176** *L* **14** # 77

Asmussen, Jes — Rockwell Automation

Comment Type **E** *Comment Status* **D** *Primitives*

To me the primitive name "PMA_UNITDATA.indication" indicates the presence of something (or signal of something), not the value of something. For this reason, I feel the description of the primative should change. See proposed change.

SuggestedRemedy

During reception, the PMA_UNITDATA.indication conveys to the PCS, via the parameter rx_sym, the detection and presence of a 5B symbol on the MDI during each cycle of the recovered clock.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.2.2** *P* **176** *L* **28** # 79

Asmussen, Jes — Rockwell Automation

Comment Type **E** *Comment Status* **D** *Primitives*

See proposed change

SuggestedRemedy

Change "This primitive defines the transfer of one symbol ." to "This primative signals the transfer of one symbol .".

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.3.1** *P* **179** *L* **16** # 31

Huszak, Gergely — Kone

Comment Type **E** *Comment Status* **D** *Editorial*

There is no reason for "PMA_UNITDATA.request (tx_sym)" to be broken into 2 lines

SuggestedRemedy

Level "(tx_sym)" with "PMA_UNITDATA.request". Moreover - if possible - do the same to "(pma_crs)" and "PMA_CARRIER.indication"

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.3.2.1** *P* **181** *L* **52** # 93

Brandt, David — Rockwell Automation

Comment Type **E** *Comment Status* **D** *Late*

Two parts of split figure are inconsistently labelled as 147-4 (part a) and 147-5 (part b)

SuggestedRemedy

Relabel both parts as 147-4, (part a) and (part b). Renumber remaining figures.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.3.2.2** *P* **183** *L* **31** # 74

Asmussen, Jes — Rockwell Automation

Comment Type **E** *Comment Status* **D** *PCS*

Would be helpful to remind reader that 'I' is the silence command.

SuggestedRemedy

tx_cmd <= 'I' otherwise (indicating SILENCE).

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.3.2.3** *P* **184** *L* **2** # 64

Baggett, Tim — Microchip

Comment Type **E** *Comment Status* **A** *PCS*

Not all constants used in the PCS Transmit State Diagram in Figure 147-4 and 147-5 are included in this section.

Constant ESDBRS was added as an assignment to tx_sym in state ESD in Figure 147-5 (P182 L15), but was not added to the list of constants in this section.

I'm less convinded that COMMIT is use in Figure 147-4 (P181 L 12) and Figure 147-5 (P182 L13) since it is assigned to tx_cmd (and defined in the variables section under tx_cmd).

SuggestedRemedy

Add the following line in section 147.3.2.3 "Constants":

ESDBRS
5B symbol defined as 'R' in 4B/5B encoding.

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.3.2.4** *P* **184** *L* **29** # 32

Huszak, Gergely — Kone

Comment Type **E** *Comment Status* **D** *Editorial*

Table 147-1 is not consistent

SuggestedRemedy

Change all the "N/A" texts (in column 4B) to em-dash symbols

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.3.2.4** *P* **185** *L* **10** # 65

Baggett, Tim — Microchip

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

COMMIT special function is missing from the 4B/5B table. Since HB, ESDBRS, and BEACON are also listed in this table, I believe COMMIT should be as well.

SuggestedRemedy

For the row containing the 5B "J" symbol,
Change: "SYNC"
To: "SYNC / COMMIT"

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.3.3.1** *P* **186** *L* **39** # 68

Baggett, Tim — Microchip

Comment Type **E** *Comment Status* **A** *PCS*

Text no longer accurately describes the exiting the DATA state in the PCS Receive State diagram after adding support for burst mode transmission.

SuggestedRemedy

Change: "...is left when ESD followed by either..."
To: "...is left when ESD or ESDBRS followed by either..."

Also consider adding comma after "encountered" to separate the two exit clauses since the first exit clause is a bit complicated.

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

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.3.3.1** *P* **186** *L* **44** # 66

Baggett, Tim — Microchip

Comment Type **E** *Comment Status* **A** *PCS*

Constant ESDBRS used in the PCS Receive State Diagram (Figure 147-8, P189 L6,9,12) is not included in the text.

Additionally, the text refers the reader to section 147.3.2.2 "Variables" but most of the contents in the list are constants.

SuggestedRemedy

Add ESDBRS.

Change: "For the definition of pcs_reset, SILENCE, SYNC, SSD, ESD, ESDOK, ESDJAB, and ESDERR see 147.3.2.2."

To: "For the definition of pcs_reset, SILENCE, SYNC, SSD, ESD, ESDOK, ESDJAB, ESDBRS, and ESDERR see 147.3.2.2 and 147.3.2.3."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Remove the whole paragraph that is "The variables, functions, and timers used in Figure 147-7 are defined as below. For the definition of pcs_reset, SILENCE, SYNC, SSD, ESD, ESDOK, ESDJAB, and ESDERR see 147.3.2.2."

Add "pcs_reset See 147.3.2.2" to list of variables in 147.3.3.2 (following entry for pcs_rxd)

Cl **147** *SC* **147.3.3.3** *P* **187** *L* **18** # 67

Baggett, Tim Microchip

Comment Type **E** *Comment Status* **A** *PCS*

This section "Constants" does not contain all the constants used by the PCS Receive state diagram. Rather than adding every constant used and making this section redundant with section 147.3.2.3 (and generating a maintenance nightmare), recommend just refering the reader to section 147.3.2.3.

This then would make the test on P186 L44 redundant, so rewording there may be considered as well.

SuggestedRemedy

Replace (delete the entry for SILENCE) contents of section 147.3.3.3 "Constants" with: "Refer to section 147.3.2.3."

Consider changing sentence on P186 L44 from:
"For the definition of pcs_reset, SILENCE, SYNC, SSD, ESD, ESDOK, ESDJAB, and ESDERR see 147.3.2.2."

to:
"For the definition of pcs_reset see 147.3.2.2."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Replace the whole content of "147.3.3.3 Constants" with "Refer to 147.3.2.3.".

Cl **147** *SC* **147.3.3.6** *P* **188** *L* **33** # 73

Baggett, Tim Microchip

Comment Type **T** *Comment Status* **A** *State Diagram*

In figure 147-7, we seem to be missing the condition for exiting the PRE state for the DATA state via connector [A]. Through Draft 2.1, the exit condition was "RSCD * precnt = 9" but was lost in draft 2.2. Perhaps this exit condition was removed intentionally, but I cannot find a comment related to it, therefore I suspect it was erroneously deletec in the creation of D2.2.

SuggestedRemedy

Add "RSCD * precnt = 9" as an exit condition from state PRE to [A]

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.3.7.1** *P* **191** *L* **5** # 117

Kim, Yong NIO

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

[CSD and Layer violation concern]
WRT to "When optional PLCA RS operations are supported and enabled, the PHY shall notify the RS of a received BEACON indication by the means of MII interface as specified in 22.2.2.8.". This statement makes support of PLCA RS in 10BASE-T1S PHY not optional. PLCA RS is advertised as optional RS. This and two other shalls in this sub-clause makes it mandatoy implementation in all 10BASE-T1S PHYs.

SuggestedRemedy

Delete CL147.3.7.1 requirementss.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Implement changes in
http://www.ieee802.org/3/cg/public/Feb2019/zimmerman_3cg_01_0219.pdf

Cl **147** *SC* **147.3.7.2** *P* **191** *L* **5** # 118

Kim, Yong NIO

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

[CSD and Layer violation concern]
WRT to "When optional PLCA RS operations are supported and enabled, the PHY shall notify the RS of a received COMMIT indication by the means of MII interface as specified in 22.2.2.8.". This statement makes support of PLCA RS in 10BASE-T1S PHY not optional. PLCA RS is advertised as optional RS. This and two other shalls in this sub-clause makes it mandatoy implementation in all 10BASE-T1S PHYs.

SuggestedRemedy

Delete CL147.3.7.2 requirementss.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Accomodated by comment 117.
Response to comment 117 is:
ACCEPT IN PRINCIPLE.
Implement changes in
http://www.ieee802.org/3/cg/public/Feb2019/zimmerman_3cg_01_0219.pdf

Cl **147** *SC* **147.3.8.1.3** *P* **193** *L* **28** # 69

Baggett, Tim — Microchip

Comment Type **E** *Comment Status* **D** *Withdrawn*

Transition line from state WAIT_HB to WAIT_RX extends upwards into the WAIT_HB symbol. This was probably done when the state was moved downwards to add the transition from REPLY_HB back to WAIT_HB.

SuggestedRemedy

Reduce the length of the WAIT_HB -> WAIT_RX transition line so that it starts at the bottom of the WAIT_HB symbol.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.3.8.1.3** *P* **193** *L* **28** # 48

Graber, Steffen — Pepperl+Fuchs GmbH

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

The transition line between WAIT_HB and WAIT_RX state is too long.

SuggestedRemedy

Please remove overlapping part of the transition line within the WAIT_HB state.

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.3.8.1.3** *P* **193** *L* **28** # 94

Brandt, David — Rockwell Automation

Comment Type **E** *Comment Status* **A** *Late*

WAIT_HB exit transition arrow extends into state box.

SuggestedRemedy

Remove arrow line from inside box.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Already resolved by #48.
Proposed resolution for #48 is as follows:
>>>>
PROPOSED ACCEPT.
<<<<

Cl **147** *SC* **147.3.8.2.1** *P* **195** *L* **2** # 60

Baggett, Tim — Microchip

Comment Type **E** *Comment Status* **A** *PCS*

Variable cnt_l incorrectly references ACTIVE_CNT, and variable cnt_h incorrectly references INACTIVE_CNT. Studying the state diagram in Figure 147.11 and the descriptions of the constants in 147.3.8.2.2, it appears that the use of ACTIVE_CNT and INACTIVE_CNT is swapped.

SuggestedRemedy

P195 L2 - change "ACTIVE_CNT" to "INACTIVE_CNT"
P195 L6 - change "INACTIVE_CNT" to "ACTIVE_CNT"

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.3.8.2.2** *P* **195** *L* **25** # 49

Graber, Steffen — Pepperl+Fuchs GmbH

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

without HB or receive packets

SuggestedRemedy

without HBs or receive packets (add "s" after "HB")

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "HB or receive" to "HBs or receive" at 2 locations:
- 194/52-53
- 195/25-26

Cl **147** *SC* **147.4.2** *P* **197** *L* **11** # 25

Huszak, Gergely — Kone

Comment Type **E** *Comment Status* **D** *Editorial*

In Figure 147-13:
- the arrow under "T2" may not be horizontal (right-end tilted up?)
- the waveform at the bottom looks off, both when zoomed out from and when zoomed in on.

SuggestedRemedy

Make the horizontal lines really horizontal and harmonize line width, as needed

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.4.4.1** *P* **198** *L* **12** # 50

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **A** *AutoNeg*

!link_control

SuggestedRemedy

(link_control = DISABLE) change also reference in 147.3.2.2 from TRUE/FALSE to ENABLE/DISABLE. link_control coming from the TDI and is defined as ENABLE/DISABLE. Please also do a search within Clause 147 for link_control and replace a TRUE or non-negated condition by (link_control = ENABLE) and a FALSE or negated condition by (link_control = DISABLE). Pleae also change initial condition of Figure 147-4 and 147-7 accordingly.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Carry out the following changes:
- 181/4: change "!link_control" to "link_control = DISABLE"
- 183/49: change "link_control has a default value of TRUE" to "link_control has a default value of ENABLE"
- 183/50: change "When set to FALSE all PCS" to "When set to DISABLE all PCS"
- 183/52: change "Values: TRUE or FALSE" to "Values: ENABLE or DISABLE"
- 188/4: change "!link_control" to "link_control = DISABLE"
- 198/13: change "!link_control" to "link_control = DISABLE"

Cl **147** *SC* **147.5.2** *P* **199** *L* **26** # 24

Beruto, Piergiorgio — Canova Tech

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

"another interface" is not in line with similar wording in this draft describing what to do when MDIO is not available.

SuggestedRemedy

Replace:

"shall be provided by another
interface"

with:

"shall be provided by equivalent means"

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.5.2** *P* **199** *L* **38** # 23

Beruto, Piergiorgio — Canova Tech

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

"nominal bit periods" is confusing in this context (DME encoded bits? Or else?)

SuggestedRemedy

Replace:

"for twenty nominal bit
periods followed by a negative differential voltage for twenty nominal bit periods."

with:

"for 1.6 us followed by a negative differential voltage level for 1.6 us."

NOTE: "us" stands for "microseconds"

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.5.5.1** *P* **202** *L* **45** # 15

Anslow, Pete — Ciena

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

IEEE uses an en-dash as a minus sign. (2 instances)

SuggestedRemedy

Change "-" to an en-dash in 10-10 and 10-7 on lines 45 and 46.

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.5.5.2** *P* **203** *L* **9** # 26

Huszak, Gergely — Kone

Comment Type **E** *Comment Status* **D** *Editorial*

In figure 147-19:
- the dotted vertical lines under the 2 "MDI" labels do not align well (both vertically and horizontally)
- the horizontal line between the TP and the receiver does not align well on its left-hand side

SuggestedRemedy

Fix all these

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.7.4** *P* **204** *L* **48** # 86

Shariff, Masood — CommScope

Comment Type **ER** *Comment Status* **A** *Link Segment*

Add new clause 147.7.4 with PSANEXT specifications taken from Clause 96.7.1.5 limited to 40 MHz like other transmission parameters. 10BASE-T1S is targeted for automotive environments as well where alien crosstalk is an important specification

SuggestedRemedy

96.7.1.5 Power sum alien near-end crosstalk (PSANEXT) There is no FEXT or NEXT as 100BASE-T1 is a single pair solution. When multiple cable pairs arebundled, the alien XTALK (ANEXT and AFEXT) become interference sources. Since the transmitted symbols from the alien noise source in one cable are not available to another cable, cancellation cannot be done. When there are multiple pairs of cables bundled together, where all pairs carry 100 Mb/s links, then each duplex link is disturbed by neighboring links, degrading the signal quality on the victim pair. In order to limit the near-end crosstalk noise for a 5-around-1 cable bundle (up to 15 m length and up to four in-line connectors, equally spaced), the Power sum alien near-end crosstalk (PSANEXT) loss shall meet Equation (96-9). (96-9) where PSANEXT(f) is the power sum alien near-end crosstalk loss at frequency f f is the frequency in MHz

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Adopt text for 147.7.4 Power sum alien near-end crosstalk (PSANEXT) from slide 8 of shariff_3cg_01b_0219.pdf

Cl **147** *SC* **147.7.5** *P* **204** *L* **48** # 87

Shariff, Masood — CommScope

Comment Type **ER** *Comment Status* **A** *Link Segment*

Add new clause 147.7.5 with PSAACRF specifications taken from Clause 96.7.1.6 limited to 40 MHz like other transmission parameters. 10BASE-T1S is targeted for automotive environments as well where alien crosstalk is an important specification

SuggestedRemedy

96.7.1.6 Power sum alien attenuation to crosstalk ratio far-end (PSAACRF) The Power sum alien attenuation to crosstalk ratio far-end (PSAACRF) for a 5-around-1 cable bundle (up to 15 m length and up to four in-line connectors, equally spaced) shall meet Equation (96-10). (96-10) where PSAACRF(f) is the power sum alien attenuation to crosstalk ratio far-end at frequency f f is the frequency in MHz

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Adopt text for 147.7.5 Power sum alien attenuation to crosstalk far end (PSAACR-F) from slide 10 of shariff_3cg_01b_0219.pdf

Cl **147** *SC* **147.8** *P* **204** *L* **52** # 75

Asmussen, Jes — Rockwell Automation

Comment Type **ER** *Comment Status* **D** *EZ*

The reference (1.4.332) in the 802.3 standard defines a payload pointer. This definition doesn't apply to mixing segment.

SuggestedRemedy

Change the reference to 1.4.277.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **147** *SC* **147.9.1** *P* **206** *L* **1** # 51

Graber, Steffen — Pepperl+Fuchs GmbH

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

In Figures 147-21 to 147-36 first the IEC63171-1 Plug and Jack, then the IEC61076-3-125 Plug, then the mating faces for both connectors and then finally the IEC61076-3-125 Jack are shown. It seems to be more suitable to first show the three IEC63171-1 figures (plug, jacket and mating face) and then the three IEC61076-3-125 figures (plug jack and mating face).

SuggestedRemedy

If accepted, change ordering of the figures as described in the comments section and adapt the text references to fit the new ordering.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
- Change the title of "Figure 147-24" from "IEC 63171-1 Pinout" to "IEC 63171-1 Mating Face"
- Move anchor of "Figure 147-24-IEC 63171-1 Mating Face" before "Figure 147-23-IEC 61076-3-125 Plug"
- Swap the order of "Figure 147-25-IEC 631076-3-125 Mating Face" and "Figure 147-26-IEC 61076-3-125 Jack"

Notes:
- Must be carried out after #52
- Also resolves #70
- Connected with #46 (in clause 146)

Cl **147** *SC* **147.9.1** *P* **206** *L* **8** # 70

Baggett, Tim — Microchip

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

The ordering of the MDI connector and pin diagrams in Figures 147-21 through 147-26 is confusing. It would be more clear to visually group the connector types together.

SuggestedRemedy

Rearrange the figures as follows (or add editor's note to do this and renumber prior to D3.0):

Figure 147-21 - IEC 63171-1 Plug
Figure 147-22 - IEC 63171-1 Jack
Figure 147-23 - IEC 63171-1 Pinout

Figure 147-24 - IEC 61076-3-125 Plug
Figure 147-25 - IEC 61076-3-125 Jack
Figure 147-26 - IEC 631076-3-125 Mating Face

(Swap D2.3 figures 147-23 and 147-24; Swap D2.3 figures 147-25 and 147-26; update text P206 L2-6 to refer to moved figure numbers)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Already resolved by #51.
Proposed resolution for #51 is as follows:
>>>>
PROPOSED ACCEPT IN PRINCIPLE.
- Change the title of "Figure 147-24" from "IEC 63171-1 Pinout" to "IEC 63171-1 Mating Face"
- Move anchor of "Figure 147-24-IEC 63171-1 Mating Face" before "Figure 147-23-IEC 61076-3-125 Plug"
- Swap the order of "Figure 147-25-IEC 631076-3-125 Mating Face" and "Figure 147-26-IEC 61076-3-125 Jack"

Notes:
- Must be carried out after #52
- Also resolves #70
- Connected with #46 (in clause 146)
<<<<

Cl **147** *SC* **147.9.1** *P* **207** *L* **49** # 52

Graber, Steffen — Pepperl+Fuchs GmbH

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

Table 147-3 defines "Contact", Figure 147-24 defines "Pin" and Figure 147-25 just shows 1 and 2.

SuggestedRemedy

Please unify the naming in table 147-3, Figure 147-24 and Figure 147-25.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change labels in "Figure 147-24-IEC 63171-1 Pinout" from "PIN 1" and "PIN 2" to "1" and "2" respectively.
Notes:
- Must be carried out before #51
- Connected with #47 (in clause 146)

Cl **147** *SC* **147.11** *P* **210** *L* **28** # 91

Beruto, Piergiorgio — Canova Tech

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

10BASE-T1S could benefit from specifying more precise CRS and COL timing requirements besides those already present in C22.

This is related to the following discussion thread on the 802.3cg reflector:
http://www.ieee802.org/3/cg/email/msg00840.html

The proposed text and values have been inspired by the timing constraints reported in Table 24-2. The numbers have been adapted to 10BASE-T1S specific needs.
Please note that the minimum timing requirements are necessary for CSMA/CD to achieve the expected performance and mitigate the capture effect.

SuggestedRemedy

replace content of Clause 147.11 with the following:

"

The PHY shall comply with the timing requirements specifed in Table XXX - 10BASE-T1S delay constraints

Table XXX - 10BASE-T1S delay constraints:

Event	Min	Max	Input timing reference	Output timing reference
TX_EN sampled to MDI output	120 ns	440 ns	rising edge of MII_TXCLK	first DME clock transition at the MDI
TX_EN sampled to CRS asserted	0	1040 ns	rising edge of MII_TXCLK	rising edge of CRS
TX_EN sampled to CRS de-asserted	0	1040 ns	rising edge of MII_TXCLK	rising edge of CRS
MDI input to CRS asserted	560 ns	1040 ns	first DME clock transition at the MDI	rising edge of CRS
MDI input to CRS de-asserted	640 ns	1120 ns	last DME encoded '0' clock transition at the MDI	falling edge of CRS
MDI input to COL asserted	0	25.6 us	start of corrupted transmitted signal at the MDI	rising edge of COL
MDI input to COL de-asserted	0	3.2 us	end of transmission at the MDI	falling edge of COL
MDI input to RX_DV asserted	560 ns	1360 ns	first DME clock transition at the MDI	rising edge of RX_DV
MDI input to RX_DV de-asserted	640 ns	1440 ns	last DME encoded '0' clock transition at the MDI	falling edge of RX_DV

"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Do the following 2 things:

- Add the requested text: "The PHY shall comply with the timing requirements specified in Table 147-XXX.", replacing the whole content of (currently 1 paragraph in) 147.11.
- Anchor the new IEEE-style table to the end of the newly added sentence (paragraph) shown in:
http://www.ieee802.org/3/cg/public/Feb2019/Piergiorgio_8023-147-Table-XXX_r2.pdf

---

Cl **148** *SC* **148** *P* **221** *L* **1** # 128

Thompson, Geoff GraCaSI S.A.

Comment Type **TR** *Comment Status* **R** *PLCA Scope*

The inclusion of the new CSMA/CA shared media access control mechanism (labeled PLCA) which overrides CSMA/CD as the media access control:
1. Is out of scope for the PAR approved for the project
2. Does not conform to the CSD approved for the project
3. Is not needed to satisfy any of the OBJECTIVES approved for the project
4. Pollutes the DISTINCT IDENTITY of 802.3 as The Standard for Ethernet when CSMA/CA deserves and should be given a project with its own DISTINCT IDENTITY.

These points will be discussed in further detail on the attached ADDITIONAL COMMENTS document.

SuggestedRemedy

Remove clause 148 labeled "PLCA Reconciliation Sublayer (RS)" and related text from the draft and use the existing clause 22 as the RS to reconcile the MII to the current standard 802.3 MAC. This will allow the project to proceed and fully meet the requirements of the approved PAR, CSD and 802.3 Objectives.

(What to do with the removed material is outside the scope of this comment but I am happy to entertain and fully participate in that discussion in a supportive manner.)

ALTERNATIVELY (and not preferred) the PAR, CSD and 802.3 Objectives could be updated and amended in a manner that would establish a need for a CSMA/CA solution to be part of the project.

Response *Response Status* **U**

REJECT.
The ballot resolution committee believes that the commenter is incorrect in asserting PLCA is a new media access control layer overriding the CSMA/CD MAC. PLCA architecturally fits at the reconciliation sublayer and performs functions allocated to the physical layer. It requires the CSMA/CD MAC for media access control.
See http://www.ieee802.org/3/cg/public/Jan2019/Tutorial_cg_0119_final.pdf and http://www.ieee802.org/3/cg/public/adhoc/brandt_020619_3cg_01_adhoc.pdf for discussion.

Straw Poll:
I support the following response to comment 128:
REJECT.
The ballot resolution committee believes that the commenter is incorrect in asserting PLCA is a new media access control layer overriding the CSMA/CD MAC. PLCA architecturally fits at the reconciliation sublayer and performs functions allocated to the physical layer. It requires the CSMA/CD MAC for media access control.
See http://www.ieee802.org/3/cg/public/Jan2019/Tutorial_cg_0119_final.pdf and http://www.ieee802.org/3/cg/public/adhoc/brandt_020619_3cg_01_adhoc.pdf for discussion.

Y:14
N:1
A:2

Cl **148** *SC* **148.4.4.1.1** *P* **224** *L* **34** # 56

Maguire, Valerie The Siemon Company

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

"are free to" is not preferred standards terminology

SuggestedRemedy

Replace "are free to" with "may" on p 224, l 34 and p 224 46

Response *Response Status* **C**

ACCEPT.

Cl **148** *SC* **148.4.4.1.1** *P* **224** *L* **35** # 55

Maguire, Valerie The Siemon Company

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

"herein" is not a suffciiently specific reference

SuggestedRemedy

Replace "herein" with "this subclause" on p 224, l 35 and p 224 47

Response *Response Status* **C**

ACCEPT.

Cl **148** *SC* **148.4.5.1** *P* **228** *L* **17** # 95

Brandt, David Rockwell Automation

Comment Type **E** *Comment Status* **A** *Late*

Exit condition C of EARLY_RECEIVE appears related to exit condition B.

SuggestedRemedy

Move exit condition equation for C next to the arrow line and away from arrow line for B.

Response *Response Status* **C**

ACCEPT.

Cl **148** *SC* **148.4.5.2** *P* **228** *L* **2** # 90

Beruto, Piergiorgio Canova Tech

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

curID variable is used in the PLCA Control state diagram, but it's not described in this sub-clause as it should be.

SuggestedRemedy

Add the following description of curID variable:
"curID integer variable tracking the ID of the node that currently owns a transmit opportunity."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add the following description of curID variable:
"curID Integer variable tracking the ID of the node that currently owns a transmit opportunity.
Values: integer 0 to 255"

Cl **148** *SC* **148.4.5.4** *P* **231** *L* **7** # 96

Brandt, David — Rockwell Automation

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

to_timer should not map to both clause 30 and clause 45, but only one or the other.

SuggestedRemedy

Change from:

The transmit opportunity timer maps to aPLCATransmitOpportunityTimer. When the MDIO is present, the timer is configured to the content of bits 28.2.7:0. When MDIO is not present, the functionality of bits 28.2.7:0 can be provided by equivalent means.

To:

If the RS is implemented above MII as shown in Figure 148-1, the transmit opportunity timer maps to aPLCATransmitOpportunityTimer. If MDIO is present and the RS is implemented below MII, the timer is configured to the content of bits 28.2.7:0. When MDIO is not present, the functionality of bits 28.2.7:0 can be provided by equivalent means.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Accomodated by comment #109
Response to comment 109 deletes the text about MDIO registers - proposed response to #109 is:

ACCEPT IN PRINCIPLE.

Remove MDIO Manageable Device (MMD) registers for PLCA. PLCA will be managed as a clause 30 object.
Delete changes on P42 to text in 45.2, tables 45-1, and 45-2.

Delete 45.2.13 and its subclauses.

In 148.4.5.2:

Delete paragraph "When the MDIO is present" on P 229 L 7-11 (under plca_reset).

Delete paragraph "When the MDIO is present" on P 229 L 16-21 (under plca_en).

Delete third and fourth sentences of paragraph under local_nodeID "When MDIO is present. equivalent means." on P229 L49-51.

Delete second and third sentences of paragraph under plca_node_count "When MDIO is present. equivalent means." on P230 L4-6.

Delete third and fourth sentences of paragraph under max_bc "When MDIO is present, . equivalent means." on P230 L27-30.

In 148.4.5.4:

Delete third and fourth sentences of paragraph under burst_timer "When MDIO is present,. equivalent means." on P230 L49-51.

Delete second and third sentences of paragraph under to_timer "When the MDIO is present. equivalent means." on P 231 L7-9.

In 148.4.7.2:
Delete third sentence of paragraph under plca_status "When MDIO is present this signal maps to register 28.15.15." at P237 L1.

Cl **148** *SC* **148.4.6.1** *P* **231** *L* **51** # 53

Graber, Steffen — Pepperl+Fuchs GmbH

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

. that aligns transmission with the transmit opportunity..

SuggestedRemedy

. that aligns a transmission with the transmit opportunity. (add "a" before transmission and remove second dot at the end of the sentence).

Response *Response Status* **C**

ACCEPT.

Cl **148** *SC* **148.4.6.1** *P* **231** *L* **51** # 71

Baggett, Tim — Microchip

Comment Type **E** *Comment Status* **D** *Withdrawn*

Extra period following "opportunity".

SuggestedRemedy

Change: "opportunity.."
To: "opportunity."

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **148** *SC* **148.4.6.1** *P* **231** *L* **52** # 72
Baggett, Tim Microchip

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

The equation "to_timer x plca_node_count + beacon_timer" is of mixed font size. to_timer is 10 pt.
plca_node_count and beacon_timer are 9 pt.

SuggestedRemedy

Please verify that correct sizing is being used.

Response *Response Status* **C**

ACCEPT.

Cl **148** *SC* **148.4.7.1** *P* **246** *L* **46** # 89
Beruto, Piergiorgio Canova Tech

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

Mispelled caption in Figure 148-5

SuggestedRemedy

Change "PLCS" to "PLCA"

Response *Response Status* **C**

ACCEPT.

Cl **148** *SC* **148.4.7.4** *P* **237** *L* **15** # 61
Baggett, Tim Microchip

Comment Type **E** *Comment Status* **D** *Withdrawn*

The space in the number "130 090" gets expanded too much in full justification. The result is that it appears as two numbers, and causes confusion to the reader.

SuggestedRemedy

Use a non-breaking space (control-spacebar) between "130" and "090" to prevent expansion.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **148** *SC* **148.4.7.4** *P* **237** *L* **15** # 54
Graber, Steffen Pepperl+Fuchs GmbH

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

wide spaces due to justify alignment.

SuggestedRemedy

If possible from editorial style, put a part of the formula in line 16 already in line 15 to make the text better readable.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **148** *SC* **148.4.7.4** *P* **237** *L* **16** # 80
Asmussen, Jes Rockwell Automation

Comment Type **ER** *Comment Status* **D** *Editorial*

Not exactly sure what "130 090" represents.

SuggestedRemedy

TBD

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **148** *SC* **148.4.7.4** *P* **237** *L* **16** # 16
Anslow, Pete Ciena

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

The space in "130 090" should be changed to a non-breaking space (Ctrl space) as this will force it to be just one space wide.

SuggestedRemedy

Change the space in "130 090" to a non-breaking space (Ctrl space).

Response *Response Status* **C**

ACCEPT.

Cl **148** *SC* **148.5.3** *P* **239** *L* **9** # 62

Baggett, Tim Microchip

Comment Type **E** *Comment Status* **D** *Editorial*

Blank 3rd level heading (148.5.3).

SuggestedRemedy

Delete line for 148.5.3, or remove the heading tag and make it normal body text style.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **148** *SC* **148.5.4.6** *P* **241** *L* **1** # 92

Beruto, Piergiorgio Canova Tech

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

Missing space in clause title

SuggestedRemedy

Change "PLCAStatus" to "PLCA Status"

Response *Response Status* **C**

ACCEPT.