Cl **146** *SC* **146.7.1.4** *P* *L* # 304
DiMinico, Christopher MC Communication

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

146.7.1.4 Maximum link delay is TBD.

SuggestedRemedy

Provide value with TBD and extend frequency range to .1 MHz. The propagation delay of a 10BASE-T1L link segment shall not exceed 5700 (TBD) ns at all frequencies between .1 MHz and 20 MHz

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Table 200A-1-Point-to-point link segment DCR characteristics lists Length
at IL limit (m) for 14 AWG to 24 AWG. 14 AWG length at IL limit is 1589 m.

Using Equation 80-1: media delay =10^9/nc ns/m
Where: n=NVP, c=speed of light
With NVP= 0.6,
media delay = 5.56 ns/m
media delay of 1589 m = 8834 ns

Replace TBD with 8834 ns extend lower frequency to 0.1 MHz.

146.7.1.4 Maximum link delay
The propagation delay of a 10BASE-T1L link segment shall not exceed 8834 ns at all frequencies between
.1 MHz and 20 MHz.

Resolve with comment#259 which may impact length at IL limit.

Cl **00** *SC* **0** *P* *L* # 123
Graber, Steffen Pepperl+Fuchs GmbH

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

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT. Comment field is empty.

Cl **00** *SC* **0** *P* *L* # 156
Graber, Steffen Pepperl+Fuchs GmbH

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

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT. Comment field is empty.

Cl **00** *SC* **0** *P* *L* # 143
Graber, Steffen Pepperl+Fuchs GmbH

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

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT. Comment field is empty.

Cl **00** *SC* **0** *P* **1** *L* **35** # 311
Zimmerman, George CME Consulting et al

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

"amendment to IEEE Std 802.3-201x as amended by IEEE Std 802.3cg-201x" - I didn't expect to see 'as amended by' here. I understand the base standard will be -2018, but I don't think we yet know the other amendments preceding this. This comment also impacts the header and front matter on page 11.

SuggestedRemedy

Chief editor to consult with 802.3 leadership on order of amendments and other possible published amendments (including YANG, 802.3.2, which would need to be mentioned on page 11), and update header, page 1 and page 11 frontmatter accordingly

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Chief Editor to consult with 802.3 leadership on order of amendments and other possible published amendments (including YANG, 802.3.2, which would need to be mentioned on page 11), and update header, page 1 and page 11 frontmatter accordingly.

Cl **00** *SC* **0** *P* **1** *L* **36** # 314
Zimmerman, George CME Consulting et al

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

"[review/balloting stage]" - should be "Task Force Review".

SuggestedRemedy

replace text as shown in comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "[review/balloting stage]" with "Task Force Review".

Cl **00** *SC* **Front Matter** *P* **1** *L* **39** # 1
Maguire, Valerie The Siemon Company

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

Document copyright date will need to be updated for next draft

SuggestedRemedy

Global - Change document copyright date from "2017" to "2018"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Change document copyright date from "2017" to "2018" (fix variables in clauses).

Cl **00** *SC* **0** *P* **3** *L* **1** # 312
Zimmerman, George CME Consulting et al

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

"Std 802.3-201x 201xspecifies" - extra 201x inserted. (probably a frame variable insert)

SuggestedRemedy

Change '201xspecifies' to 'specifies'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "201xspecifies" with "specifies".

Cl **00** *SC* **Front Matter** *P* **3** *L* **1** # 2
Maguire, Valerie The Siemon Company

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

There are a couple of "unresolved text inserts" in the clause headers throughout the document.

SuggestedRemedy

Editor to resolve all header text inserts

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Search all clause headers for "unresolved text inserts" and resolve with appropriate inserts.

Cl **00** *SC* **0** *P* **8** *L* **4** # 313
Zimmerman, George CME Consulting et al

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

"802.3xx" - needs to be "802.3cg". Also missing task force names and officers on lines 13 & 14. This happens in a number of places throughout the draft (setting variables in the various subsections I suspect)

SuggestedRemedy

Global search and replace 802.3xx for 802.3cg (fix variables in clauses), including Task Force name and task force officer materials.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Global search and replace "802.3xx" with "802.3cg" (fix variables in clauses). Insert Task Force names and task force officers on lines 13 and 14 and other all locations in document as needed.

Cl **01** *SC* **1.4** *P* **24** *L* **12** # 34
Graber, Steffen Pepperl+Fuchs GmbH

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

10BASE-T:

SuggestedRemedy

10BASE-T

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "10BASE-T:" with "10BASE-T".

Cl **01** *SC* **1.4** *P* **24** *L* **18** # 35

Graber, Steffen — Pepperl+Fuchs GmbH

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

10BASE-T1S Definition

SuggestedRemedy

Change to: IEEE802.3 Physical Layer specification for a 10 Mb/s Ethernet full duplex or half-duplex point-to-point or half-duplex multidrop local area network over a single balanced twisted pair.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Duplexing and other options aren't typically called out in definitions (readers that want options can go to the referenced clause). Recommend to align definitions with 10BASE-T with reach differentiators as follows:

Change definition for 10BASE-T1L to, "IEEE 802.3 Physical Layer specification for a 10 Mb/s Ethernet local area network over a single balanced twisted-pair up to 1 000 m reach. (See IEEE Std 802.3, Clause 146.)"

Change definition for 10BASE-T1S to, "IEEE 802.3 Physical Layer specification for a 10 Mb/s Ethernet local area network over a short reach single balanced twisted-pair. (See IEEE Std 802.3, Clause 147.)"

Cl **01** *SC* **1.4** *P* **24** *L* **19** # 26

Gottron, Jens — Siemens AG

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

"balanced twisted pair" has been changed in PAR, CSD, Objectives, also "full-duplex" is only optional

SuggestedRemedy

"Single balanced pair" and change "full duplex" to "half duplex, optional full duplex"

Proposed Response *Response Status* **W**

PROPOSED REJECT. While there has been discussion to change the PAR, CSD, and objectives, they have not been changed to align with the proposed remedy.

Cl **01** *SC* **1.4** *P* **24** *L* **19** # 315

Zimmerman, George — CME Consulting et al

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

Missing definition for PLCA. Suggested text borrowed from intro to clause 148.

SuggestedRemedy

Insert 1.4.371a after 1.4.371 (in 802.3cj d3p0) physical header subframe (PHS):
"1.4.371a Physical Layer Collision Avoidance (PLCA): A method for creating transmit opportunities at proper times in order to avoid physical collisions on the medium and improve performance of half-duplex 10BASE-T1S multidrop networks on mixing segments (see Clause 148)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Insert 1.4.371a after 1.4.371 (in 802.3cj d3p0) physical header subframe (PHS):
"1.4.371a Physical Layer Collision Avoidance (PLCA): A method for creating transmit opportunities at proper times in order to avoid physical collisions on the medium and improve performance of half-duplex 10BASE-T1S multidrop networks on mixing segments (See IEEE Std 802.3, Clause 148)."

Cl **01** *SC* **1.5** *P* **24** *L* **25** # 316

Zimmerman, George — CME Consulting et al

Comment Type **E** *Comment Status* **D** *PLCA*

Add PLCA to abbreviations - delete placeholder

SuggestedRemedy

Replace "ABBR expanded version" with "PLCA Physical Layer Collision Avoidance"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "ABBR expanded version" with "PLCA Physical Layer Collision Avoidance".

Cl **01** *SC* **1.5** *P* **24** *L* **26** # 36

Graber, Steffen — Pepperl+Fuchs GmbH

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

ABBR expanded version

SuggestedRemedy

Seems that this can be removed, later on other abbreviations can be added.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete "ABBR expanded version". (See comment #316)

Cl **22** *SC* **22.2.2.4** *P* **25** *L* **10** # 317

Zimmerman, George — CME Consulting et al

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

"Change 22.2.2.4 and Table 22-1 as follows" - don't repeat unchanged text in the editing instruction - it opens it for comment and unnecessary changes

SuggestedRemedy

Change editing instruction to "Change 2nd paragraph of 22.2.4 as shown" - delete lines 11-15 (first paragraph). Add new editing instruction after 2nd paragraph add new editing instruction - "Insert after 2nd paragraph of 22.2.4" (remove underline from lines 22-26). At line 27, add new editing instruction "Insert two new rows between 0, 1, 0001 Assert LPI and Reserved row, and change reserved row of Table 22-1 as shown:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change editing instruction on line 10 to "Change the second paragraph in 22.2.4 as follows:" and delete lines 11-15 (first paragraph);

Add new editing instruction after second paragraph on line 20, "Insert new text after the second paragraph in 22.2.4 as follows:" and remove underline from lines 22-26 and delete lines 27-10 (last two sentences); and

Add new editing instruction on line 27, "Insert new rows for 0, 1, 0010 and 0, 1, 0011 after 0, 1, 0001 and replace the Reserved row as follows (unchanged rows not shown):" and delete unchanged rows and format table to show "." in place of unchanged row imediately before new row and immediately after replaced row and remove change marks for new and replaced rows.

(Same resolution proposed for comments #317 and #37)

Cl **22** *SC* **22.2.2.4** *P* **25** *L* **14** # 37

Graber, Steffen — Pepperl+Fuchs GmbH

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

. TXD<0 >is .

SuggestedRemedy

. TXD<0> is .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete unchanged paragraph and revise editing instruction.

(Same resolution proposed for comments #317 and #37)

Cl **22** *SC* **22.2.2.4** *P* **25** *L* **18** # 38

Graber, Steffen — Pepperl+Fuchs GmbH

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

<XREF>Table 22-1

SuggestedRemedy

Remove <XREF>

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete "<XREF>".

Cl **22** *SC* **22.2.2.4** *P* **25** *L* **23** # 39

Graber, Steffen — Pepperl+Fuchs GmbH

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

<XREF>Table 22-1

SuggestedRemedy

Remove <XREF>

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete "<XREF>".

Cl **22** *SC* **22.2.2.4** *P* **25** *L* **30** # 40

Graber, Steffen — Pepperl+Fuchs GmbH

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

<XREF>Table 22-1

SuggestedRemedy

Remove <XREF>

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete "<XREF>".

Cl **22** *SC* **22.2.2.8** *P* **26** *L* **3** # 318

Zimmerman, George — CME Consulting et al

Comment Type **E** *Comment Status* **X** *Editorial*

"Change 22.2.2.8 and Table 22-8 as follows(make no change to Figure 22-7" - don't repeat unchanged text in the editing instruction - it opens it for comment and unnecessary changes

SuggestedRemedy

Change editing instruction to "Insert new 4th paragraph after 3rd paragraph in 22.2.8" - delete lines 5-16 (first 3 paragraphs) and 22-32 (following paragraphs) and remove underscore on lines 18-21 (inserted paragraphs). Add new editing instruction after inserted paragraph, ""Insert two new rows between 0, 1, 0001 Assert LPI and Reserved row, and change reserved row of Table 22-2 as shown:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change editing instruction on line 3 to "Insert new text after the third paragraph in 22.2.8 as follows:" and delete lines 5-16 and 22-31 (first three paragraphs and last three paragraphs) and remove underline from lines 17-21;

Add new editing instruction before Table 22-2 on line 32, "Insert new rows for 0, 1, 0010 and 0, 1, 0011 after 0, 1, 0001 and replace the Reserved row as follows (unchanged rows not shown):" and delete unchanged rows and format table to show "." in place of unchanged row imediately before new row and immediately after replaced row and remove change marks for new and replaced rows.

(Same resolution proposed for comments #318, #42, #43, and #44)

Cl **22** *SC* **22.2.2.8** *P* **26** *L* **18** # 41

Graber, Steffen — Pepperl+Fuchs GmbH

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

. the PHY indicates that is receiving .

SuggestedRemedy

. the PHY indicates that it is receiving .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "this is" with "that it is".

Cl **22** *SC* **22.2.2.8** *P* **26** *L* **25** # 42

Graber, Steffen — Pepperl+Fuchs GmbH

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

TXD <3:0>

SuggestedRemedy

TXD<3:0>

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete unchanged paragraph and revise editing instruction.

(Same resolution proposed for comments #318, #42, and #43)

Cl **22** *SC* **22.2.2.8** *P* **26** *L* **26** # 43

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **X** *Editorial*

RXD <3:0>

SuggestedRemedy

RXD<3:0>

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete unchanged paragraph and revise editing instruction.

(Same resolution proposed for comments #318, #42, #43, and #44)

Cl **22** *SC* **22.2.2.8** *P* **26** *L* **30** # 44

Graber, Steffen — Pepperl+Fuchs GmbH

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

<XREF>Table 22-2

SuggestedRemedy

Remove <XREF>

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete unchanged paragraph and revise editing instruction.

(Same resolution proposed for comments #318, #42, #43, and #44)

Cl **22** *SC* **22.2.2.11** *P* **27** *L* **3** # 319

Zimmerman, George — CME Consulting et al

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

"Change 22.2.2.11 as follows - don't repeat unchanged text in the editing instruction - it opens it for comment and unnecessary changes.

SuggestedRemedy

Replace editing instruction with "Insert new 3rd paragraph after 2nd paragraph in 22.2.2.11:" - delete lines 5-10 and 16-21 - remove underscore on inserted new text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change editing instruction on line 3 to "Insert new text after the second paragraph in 22.2.2.11 as follows:" and delete lines 5-10 and 16-21 (first two paragraphs and last two paragraphs) and remove underline from lines 10-14.

Cl **22** *SC* **22.2.2.11** *P* **27** *L* **11** # 45

Graber, Steffen — Pepperl+Fuchs GmbH

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

. CRS along with COL signal .

SuggestedRemedy

. CRS along with the COL signal .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "with COL" with "with the COL".

Cl **22** *SC* **22.2.2.12** *P* **27** *L* **25** # 320

Zimmerman, George — CME Consulting et al

Comment Type **E** *Comment Status* **X** *Editorial*

"Change 22.2.2.12 as follows."- don't repeat unchanged text in the editing instruction - it opens it for comment and unnecessary changes.

SuggestedRemedy

Replace editing instruction with "Insert new 3rd paragraph after 2nd paragraph in 22.2.2.12:" - delete lines 26-34 and 39-45 - remove underscore on inserted new text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change editing instruction on line 25 to "Insert new text after the third paragraph in 22.2.2.12 as follows:" and delete lines 26-34 and 39-45 (first three paragraphs and last two paragraphs) and remove underline from lines 35-38.

Cl **22** *SC* **22.2.2.12** *P* **27** *L* **35** # 46

Graber, Steffen — Pepperl+Fuchs GmbH

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

. COL along with CRS signal .

SuggestedRemedy

. COL along with the CRS signal .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "with CRS" with "with the CRS".

Cl **30** *SC* **30** *P* **31** *L* **1** # 324

Zimmerman, George — CME Consulting et al

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

It seems odd nothing is needed in Clause 30 for PLCA (Clause 148)

SuggestedRemedy

Insert Editor's Note (to be removed prior to Working Group Ballot) - Task Force to consider necessary Clause 30 management parameters related to Clause 148 PLCA

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Insert Editor's Note "(to be removed prior to Working Group Ballot) - Task Force to consider necessary Clause 30 management parameters related to Clause 148 PLCA."

Cl **30** *SC* **30.3** *P* **31** *L* **3** # 321

Zimmerman, George — CME Consulting et al

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

Editor's note - check this list of amendments - it's inconsistent with the rest of the draft and likely out of date.

SuggestedRemedy

Coordinate with IEEE chief editor on order of amendments and version of 802.3 to amend. Remove editor's note here and others like it - replace with a single editor's note up front to reduce possible confusion later.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete Editor's note on line 3 and search and delete all other occurances of this note in the draft.

Cl **30** *SC* **30.3.2.1.2** *P* **31** *L* **21** # 47
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **X** *EZ*

10BASE-T1S Clause 147 10 Mb/s PAM3

SuggestedRemedy

10BASE-T1S Clause 147 10 Mb/s DME

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "10 Mb/s PAM3" with "10 Mb/s DME".

(Same resolution proposed for comments #47 and #322)

Cl **30** *SC* **30.3.2.1.2** *P* **31** *L* **21** # 322
Zimmerman, George CME Consulting et al

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

"Clause 147 10Mb/s PAM3" - Clause 147 is DME, not PAM3

SuggestedRemedy

Change PAM3 to DME

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "10 Mb/s PAM3" with "10 Mb/s DME".

(Same resolution proposed for comments #47 and #322)

Cl **30** *SC* **30.5.1.1.2** *P* **31** *L* **30** # 48
Graber, Steffen Pepperl+Fuchs GmbH

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

. for "1000BASE-T":\

SuggestedRemedy

. for "10BASE-T":

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete "\" after "10BASE-T":

Cl **30** *SC* **30.5.1.1.2** *P* **31** *L* **32** # 49
Graber, Steffen Pepperl+Fuchs GmbH

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

1000BASE-T1L

SuggestedRemedy

10BASE-T1L

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Replace "1000BASE-T1L" with "10BASE-T1L" and replace "1000BASE-T1S" with "10BASE-T1S".

(Same resolution proposed for comments #323, #49 and #50)

Cl **30** *SC* **30.5.1.1.2** *P* **31** *L* **33** # 50
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **X** *EZ*

1000BASE-T1S

SuggestedRemedy

10BASE-T1S

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Replace "1000BASE-T1L" with "10BASE-T1L" and replace "1000BASE-T1S" with "10BASE-T1S".

(Same resolution proposed for comments #323, #49 and #50)

Cl **30** *SC* **30.5.1.1.2** *P* **31** *L* **33** # 323
Zimmerman, George CME Consulting et al

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

"1000BASE-T1L" and "1000BASE-T1S" should be "10BASE."

SuggestedRemedy

Replace 1000BASE-T1 with 10BASE-T1 (two instances)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "1000BASE-T1L" with "10BASE-T1L" and replace "1000BASE-T1S" with "10BASE-T1S".

(Same resolution proposed for comments #323, #49 and #50)

Cl **30** *SC* **30.6.1.1.5** *P* **32** *L* **4** # 51
Graber, Steffen Pepperl+Fuchs GmbH

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

"Rem Fault" Definition

SuggestedRemedy

As there is no "Rem Fault" Bit in Clause 146 and Clause 147, a change of the definition is not necessary, therefore please delete the "Rem Fault" Definition Change.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete Editor's instruction and revised definition for "Rem Fault" on lines 1-4.

Cl **30** *SC* **30.6.1.1.5** *P* **32** *L* **12** # 52
Graber, Steffen Pepperl+Fuchs GmbH

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

"Force MS" Definition

SuggestedRemedy

As the "Force MS" Definition is specific to the handling of the M/S Force Bit in Clause 98 there is no need to reference Clause 146 or Clause 147, therefore please delete the "Force MS" Definition Change.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete Editor's note, Editor's instruction, and revised definition for "Force MS" on lines 5-15.

Cl **45** *SC* **45.2.1** *P* **33** *L* **24** # 325
Zimmerman, George CME Consulting et al

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

Rows in table 45-3 marked . are unusual (don't see them in 802.3bp) - may be confusing, as they are not inserts. I see these in several other tables, somewhat inconsistently

SuggestedRemedy

Coordinate with 802.3 chief editor (is this new style?) and if it is not new style, delete lines 24 and 41 (rows with .), and scrub other tables in clause 45 to delete these rows.

Proposed Response *Response Status* **W**

PROPOSED REJECT. Chief Editor consulted with Pete Anslow who advised that groups of unchanged rows in tables where new rows are added or existing rows are replaced should be represented by ellipsis (".").

Cl **45** *SC* **45.2.1** *P* **33** *L* **29** # 53
Graber, Steffen Pepperl+Fuchs GmbH

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

Register 1.2296 10BASE-T1L training, Subclause 45.2.1.174c

SuggestedRemedy

Change to Register 1.2296 Reserved, remove Subclause Reference, details see presentation "Clause 45 MDIO Registers"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Implement proposed and modified changes after "Clause 45 MDIO Registers" presentation is reviewed by the Task Force.

Check with George.

Cl **45** *SC* **45.2.1** *P* **33** *L* **30** # 54
Graber, Steffen Pepperl+Fuchs GmbH

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

Register 1.2297 10BASE-T1L link partner training, Subclause 45.2.1.174d

SuggestedRemedy

Change to Register 1.2297 Reserved, remove Subclause Reference, details see presentation "Clause 45 MDIO Registers"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Implement proposed and modified changes after "Clause 45 MDIO Registers" presentation is reviewed by the Task Force.

Check with George.

Cl **45** *SC* **45.2.1.16** *P* **34** *L* **10** # 296
McCarthy, Mick Analog Devices Inc.

Comment Type **E** *Comment Status* **D** *Registers*

T1L is generally being introduced as the earlier of the two, i.e. Clause 147 vs. 148. I would expect therefore that this would be consistent with all register and bit entries throughout?

SuggestedRemedy

Make Bit 1.18.2 refer to T1L and 1.18.3 for T1S.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Swap table entries in the "Name" column to show that bit 1.18.3 is reserved for the 10BASE-T1S PHY and bit 1.18.2 is reserved for the 10BASE-T1L PHY.

(Same resolution proposed for comments #55 and #296)

Cl **45** *SC* **45.2.1.16** *P* **34** *L* **10** # 55

Graber, Steffen Pepperl+Fuchs GmbH

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

Bit 1.18.3 is for 10BASE-T1L PHY, bit 1.18.2 is for 10BASE-T1S PHY

SuggestedRemedy

Change so that bit 1.18.3 is reflecting the 10BASE-T1S PHY and bit 1.18.2 is reflecting the 10BASE-T1L PHY (reason for this is that the bit position in register 1.18 reflects the PHY type Selection field in register 1.1200.3:0 and in this field 10BASE-T1L is type 0010 (2) and 10BASE-T1S is type 0011 (3)).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Swap table entries in the "Name" column to show that bit 1.18.3 is reserved for the 10BASE-T1S PHY and bit 1.18.2 is reserved for the 10BASE-T1L PHY.

(Same resolution proposed for comments #55 and #296)

Cl **45** *SC* **45.2.1.173** *P* **34** *L* **29** # 56

Graber, Steffen Pepperl+Fuchs GmbH

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

Type Selection field is marked as RO.

SuggestedRemedy

Type Selection field needs to be marked as R/W (otherwise the type could not be set, if the PHY is supporting more than one standard).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "RO" with "R/W".

Cl **45** *SC* **45.2.1.173** *P* **34** *L* **31** # 297

McCarthy, Mick Analog Devices Inc.

Comment Type **E** *Comment Status* **D** *Registers*

T1L and T1S positions are out of order in the Table 45-141

SuggestedRemedy

"0 0 1 0 = 10BASE-T1L" should appear immediately above 1000BASE-T1 entry

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Reverse positions of "0 0 1 0 = 10BASE-T1L" and "0 0 1 1 = 10BASE-T1S" in table and keep change marks.

Cl **45** *SC* **45.2.1.174a** *P* **35** *L* **10** # 57

Graber, Steffen Pepperl+Fuchs GmbH

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

Bit 1.2294.13 Reserved

SuggestedRemedy

Change bit 1.2294.13 to Loopback, 1 = Enable loopback mode, 0 = Disable loopback mode, mode is R/W, add the following text to the standard: 45.2.1.174a.x Loopback (1.2294.13) The 10BASE-T1L PMA shall be placed in loopback mode of operation when bit 1.2294.13 is set to a one. When bit 1.2294.13 is set to a one, the 10BASE-T1L PMA shall accept data on the transmit path and return it on the receive path. The default value of bit 1.2294.13 is zero. Bit 1.2294.13 is a copy of 1.0.0 and setting or clearing either bit shall set or clear the other bit. Setting either bit shall enable loopback.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. (Editor's note: Proposed resolution is written assuming that comment 58 has been accepted and implemented).

Change name for bit 1.2294.13 from "Reserved" to "Loopback"

Change description for bit 1.2294.13 to
1 = Enable loopback mode
0 = Disable loopback mode

Change mode for bit 1.2294.13 to R/W

Insert new subclause after "45.2.1.174a.2 Transmit disable (1.2294.14)" and renumber subsequent subclauses:

"45.2.1.174a.3 Loopback (1.2294.13)

The 10BASE-T1L PMA shall be placed in loopback mode of operation when bit 1.2294.13 is set to a one. When bit 1.2294.13 is set to a one, the 10BASE-T1L PMA shall accept data on the transmit path and return it on the receive path. The default value of bit 1.2294.13 is zero. Bit 1.2294.13 is a copy of 1.0.0 and setting or clearing either bit shall set or clear the other bit. Setting either bit shall enable loopback."

Cl **45** *SC* **45.2.1.174a** *P* **35** *L* **10** # 58

Graber, Steffen — Pepperl+Fuchs GmbH

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

Bit 1.2294.12 Reserved

SuggestedRemedy

Change bit 1.2294.12 to Reduced transmit level, 1 = Enable reduced transmit level, 0 = Disable reduced transmit level, mode is R/W, add the following text to the standard: 45.2.1.174a.x Transmit Level (1.2294.12) If bit 1.2294.12 is set to one, the 10BASE-T1L PMA shall transmit with the reduced driving level according to 146.5.4.1, if bit 1.2294.12 is set to zero, the 10BASE-T1L PMA shall transmit with the normal driving level, according to 146.5.4.1. The default value of bit 1.2294.12 is zero.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change bit entry for reserved row from "1.2294.13:12" to "1.2294.13".

Add new row for bit 1.2294.12 with the following entries:
Name: Reduced transmit level
Description:
1 = Enable reduced transmit level
0 = Disable reduced transmit level
Mode: R/W

Insert new subclause after "45.2.1.174a.2 Transmit disable (1.2294.14)" and renumber subsequent subclauses (Editor's note: leave 45.2.1.174a.3 as a placeholder for implementation of comment 59):

"45.2.1.174a.4 Reduced transmit level (1.2294.12)

When bit 1.2294.12 is set to one, the 10BASE-T1L PMA shall transmit with the reduced driving level according to 146.5.4.1. When bit 1.2294.12 is set to zero, the 10BASE-T1L PMA shall transmit with the normal driving level, according to 146.5.4.1. The default value of bit 1.2294.12 is zero."

Cl **45** *SC* **45.2.1.174a** *P* **35** *L* **17** # 327

Zimmerman, George — CME Consulting et al

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

"Low-power" - while 45.2.1.174a (and subclauses) define control for a low-power mode for 10BASE-T1L, clause 147 does not define such a mode.

SuggestedRemedy

Delete row for 1.2294.11 in Table 45-142a, and subclause 45.2.1.174a.3 insert, OR, add editor's note to Clause 147 (to be removed prior to WG ballot) - "Low Power mode (no data transmission, hot standby) needs to be defined"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Add a "." to the end of the Editor's Note in sublcause 147.1 on line 23 and add, "Low-power mode (no data transmission, hot standby) needs to be defined. If it is determined that low-power mode is not needed, then the row for bit 1.2294.11 in Table 45-142a and all of subclause 45.2.1.174a.3 Low-power (1.2294.11) should be deleted."

Editor's note: "45.2.1.174a.3" above should be replaced with "45.2.1.174a.5" if comments 57 and 58 are implemented.

Cl **45** *SC* **45.1.174a.1** *P* **35** *L* **34** # 326

Zimmerman, George — CME Consulting et al

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

"Bits highlighted in yellow should be verified" - I don't see any highlights (and everything should be verified or noted for uncertainties if they are known.

SuggestedRemedy

Delete editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete Editor's Note on lines 34-36.

Cl **45** *SC* **45.2.1.174a.3** *P* **36** *L* **10** # 298

McCarthy, Mick — Analog Devices Inc.

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

For consistency, should this note read "may interrupt data communication"?

SuggestedRemedy

Replace text "This operation interrupts data communication" with "This operation may interrupt data communcation".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "operation interrupts" with "operation may interrupt".

Cl **45** *SC* **45.2.1.174b** *P* **36** *L* **24** # 60

Graber, Steffen Pepperl+Fuchs GmbH

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

Bit 1.2295.12 Reserved

SuggestedRemedy

Change bit 1.2295.12 to Reduced transmit level ability, 1 = PHY has reduced transmit level ability, 0 = PHY does not have reduced transmit level ability, RO only, add the following text to the standard: 45.2.1.174b.x Reduced transmit level ability (1.2295.12) When read as one, this bit indicates that the 10BASE-T1L PHY supports a reduced transmit level. When read as a zero, this bit indicates that the 10BASE-T1L PHY does not support a reduced transmit level.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. (Editor's note: Proposed resolution is written assuming that comment 59 has been accepted and implemented).

Change name for bit 1.2295.12 from "Reserved" to "Reduced transmit level ability"

Change description for bit 1.2295.12 to
1 = PHY has reduced transmit level ability
0 = PHY does not have reduced transmit level ability

Insert new subclause before "45.2.1.174b.1 10BASE-T1L OAM ability (1.2295.11)" and renumber subsequent subclauses:

"45.2.1.174b.1 Reduced transmit level ability (1.2295.12)

When read as one, this bit indicates that the 10BASE-T1L PHY supports a reduced transmit level. When read as a zero, this bit indicates that the 10BASE-T1L PHY does not support a reduced transmit level."

Cl **45** *SC* **45.2.1.174b** *P* **36** *L* **24** # 59

Graber, Steffen Pepperl+Fuchs GmbH

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

Bit 1.2295.13 Reserved

SuggestedRemedy

Change bit 1.2295.13 to Loopback ability, 1 = PHY has loopback ability, 0 = PHY has no loopback ability, RO only, add the following text to the standard: 45.2.1.174b.x Loopback ability (1.2295.13) When read as one, this bit indicates that the 10BASE-T1L PHY supports PMA loopback. When read as zero, this bit indicates that the 10BASE-T1L PHY does not support PMA loopback.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change bit entry for reserved row from "1.2295.15:12" to "1.2295.15:14".

Add new row for bit 1.2295.13 with the following entries:
Name: Loopback ability
Description:
1 = 1 = PHY has loopback ability
0 = 0 = PHY has no loopback ability
Mode: RO

Add new row for bit 1.2295.12 with the following entries:
Name: Reserved
Description:
Value always 0
Mode: RO

Insert new subclause before "45.2.1.174b.1 10BASE-T1L OAM ability (1.2295.11)" and renumber subsequent subclauses (Editor's note: leave 45.2.1.174b.1 as a placeholder for implementation of comment 59):

"45.2.1.174b.2 Loopback ability (1.2295.13)

When read as one, this bit indicates that the 10BASE-T1L PHY supports PMA loopback. When read as zero, this bit indicates that the 10BASE-T1L PHY does not support PMA loopback."

Cl **45** *SC* **45.2.1.174** *P* **36** *L* **24** # 61

Graber, Steffen Pepperl+Fuchs GmbH

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

Bit 1.2295.11 10BASE-T1L OAM Ability

SuggestedRemedy

Change to Bit 1.2295.11 Reserved

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change Reserved bits from "1.2295.15:12" to "1.2295.15:11" on line 24 and delete the row for bit 1.2295.11 on line 25.

Cl **45** *SC* **45.2.1.174b.1** *P* **37** *L* **1** # 62

Graber, Steffen Pepperl+Fuchs GmbH

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

10BASE-T1L OAM Ability

SuggestedRemedy

Delete Sub clause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete subcause 45.2.1.174b.1, all contents, and Editor's Note from lines 1-10.

Change the entries for bit 1.2295.11 to:
Name: Reserved
Description:
Value always 0
Mode: RO

(See comment #328)

Cl **45** *SC* **45.2.1.174b.1** *P* **37** *L* **4** # 328

Zimmerman, George CME Consulting et al

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

If an OAM channel is to remain for the long reach PHY, a placeholder must be added to Clause 147

SuggestedRemedy

Delete 45.2.1.174b.1, and bit 1.2295.11 from Table 45-142b, and 45.2.1.174c.2 (and bit 1.2296.1), 45.2.1.174d.2 (and bit 1.2297.1) and scrub to delete all other references to 10BASE-T1L OAM channel, OR add Editor's note to Clause 147 (to be removed prior to WG ballot) "Definition needed for OAM channel - comments and text encouraged to add it.)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete subcause 45.2.1.174b.1, all contents, and Editor's Note from lines 1-10.

Change the entries for bit 1.2295.11 in Table 45-142b to:
Name: Reserved
Description:
Value always 0
Mode: RO

Delete subclauses 45.2.1.174c, 45.2.1.174c.1, 45.2.1.174c.2, 45.2.1.174c.3, and Table 45-142c.

Delete subclauses 45.2.1.174d, 45.2.1.174d.1, 45.2.1.174d.2, 45.2.1.174d.3, and Table 45-142d.

Search for and delete all other references to 10BASE-T1L OAM channel.

(Same resolution proposed for comments #63, #64, #328, and #330)

Cl **45** *SC* **45.2.1.174b.4** *P* **37** *L* **26** # 329

Zimmerman, George CME Consulting et al

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

"supports the low-power ability" - WHAT low power ability? Is this the low-power mode, or the lower transmit level specified (incompletely in 146.5.4.1).

SuggestedRemedy

Change "Low-power ability" to "Reduced transmit voltage ability" globally, and insert "specified in 146.5.4.1".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Globally search for "Low-power ability" and replace with "Reduced transmit voltage ability (see 146.5.4.1)".

Cl **45** *SC* **45.2.1.174c** *P* **38** *L* **1** # 63

Graber, Steffen — Pepperl+Fuchs GmbH

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

10BASE-T1L training register

SuggestedRemedy

Delete Clause and also table 45-142c.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete subcause 45.2.1.174b.1, all contents, and Editor's Note from lines 1-10.

Change the entries for bit 1.2295.11 in Table 45-142b to:
Name: Reserved
Description:
Value always 0
Mode: RO

Delete subclauses 45.2.1.174c, 45.2.1.174c.1, 45.2.1.174c.2, 45.2.1.174c.3, and Table 45-142c.

Delete subclauses 45.2.1.174d, 45.2.1.174d.1, 45.2.1.174d.2, 45.2.1.174d.3, and Table 45-142d.

Search for and delete all other references to 10BASE-T1L OAM channel.

(Same resolution proposed for comments #63, #64, #328, and #330)

Cl **45** *SC* **45.2.1.174c** *P* **38** *L* **3** # 330

Zimmerman, George — CME Consulting et al

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

Editor's note - regarding user field - in many past incidents, exchange of a user defined field has aided interoperability and enhanced operational utility. I recommend we keep this for 10BASE-T1L

SuggestedRemedy

delete editor's note. (text for the field is already in place), and editor's note on p39 line 9 at 45.2.1.174d)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete subcause 45.2.1.174b.1, all contents, and Editor's Note from lines 1-10.

Change the entries for bit 1.2295.11 in Table 45-142b to:
Name: Reserved
Description:
Value always 0
Mode: RO

Delete subclauses 45.2.1.174c, 45.2.1.174c.1, 45.2.1.174c.2, 45.2.1.174c.3, and Table 45-142c.

Delete subclauses 45.2.1.174d, 45.2.1.174d.1, 45.2.1.174d.2, 45.2.1.174d.3, and Table 45-142d.

Search for and delete all other references to 10BASE-T1L OAM channel.

(Same resolution proposed for comments #63, #64, #328, and #330)

Cl **45** *SC* **45.2.1.174d** *P* **39** *L* **7** # 64

Graber, Steffen Pepperl+Fuchs GmbH

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

10BASE-T1L link partner training register

SuggestedRemedy

Delete Clause and also table 45-142c.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete subcause 45.2.1.174b.1, all contents, and Editor's Note from lines 1-10.

Change the entries for bit 1.2295.11 in Table 45-142b to:
Name: Reserved
Description:
Value always 0
Mode: RO

Delete subclauses 45.2.1.174c, 45.2.1.174c.1, 45.2.1.174c.2, 45.2.1.174c.3, and Table 45-142c.

Delete subclauses 45.2.1.174d, 45.2.1.174d.1, 45.2.1.174d.2, 45.2.1.174d.3, and Table 45-142d.

Search for and delete all other references to 10BASE-T1L OAM channel.

(Same resolution proposed for comments #63, #64, #328, and #330)

Cl **45** *SC* **45.2.1.174e** *P* **40** *L* **10** # 66

Graber, Steffen Pepperl+Fuchs GmbH

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

Test mode control read only.

SuggestedRemedy

Test mode control mode needs to be R/W (otherwise the test modes cannot be enabled).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change RW entry for bits 1.2298.15:13 from "RO" to "R/W".

Cl **45** *SC* **45.2.1.174e** *P* **40** *L* **10** # 65

Graber, Steffen Pepperl+Fuchs GmbH

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

Test mode control (test modes 4 to 7)

SuggestedRemedy

There exist only 2 test modes, please set test modes 4 to 7 to reserved.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Change description for bits 1.2298.15:13 to:
15 14 13
1 x x = Reserved
0 1 1 = Reserved
0 1 0 = Test mode 2
0 0 1 = Test mode 1
0 0 0 = Normal (non-test) operation

(Same resolution proposed for comments #65 and #331)

Cl **45** *SC* **45.2.1.174e** *P* **40** *L* **12** # 331

Zimmerman, George CME Consulting et al

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

The only test modes defined in clause 146 are test modes 1 and 2. also, why should mode 3 be reserved?

SuggestedRemedy

delete rows in table 45-142e for test modes 4 through 7 and replace with "1 x x = Reserved"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Change description for bits 1.2298.15:13 to:
15 14 13
1 x x = Reserved
0 1 1 = Reserved
0 1 0 = Test mode 2
0 0 1 = Test mode 1
0 0 0 = Normal (non-test) operation

(Same resolution proposed for comments #65 and #331)

Cl **45** *SC* **45.2.174e** *P* **40** *L* **25** # 68

Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *Registers*

. are described in 146.5.2, Table 146-5, and Table 146-5.

SuggestedRemedy

. are described in 146.5.2. (the two tables will be replaced later by a PSD mask).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "described in 146.5.2, Table 146-5, and Table 146-5" with "described in 146.5.2"

Cl **45** *SC* **45.2.174e** *P* **40** *L* **25** # 67

Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *Registers*

. bits 1.2297.15:13 .

SuggestedRemedy

. bits 1.2298.15:13 .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "1.2297.15:13" with "1.2298.15:13"

Cl **45** *SC* **45.2.1.174f.3** *P* **41** *L* **21** # 332

Zimmerman, George CME Consulting et al

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

"Low power ability" - this needs to be defined in clause 147. the text here seems to define the PMA/PMD behavior, which should be in the state diagram of clause 147 - but there is no state diagram to add this.

SuggestedRemedy

Move text on lines 24-28 ("This action." to "exit the low-power mode") to create new section "147.1.3 Low-power mode 10BASE-T1S PHYs may optionally support a transition to a low-power state where data communication is interrupted. This low power mode may be entered by setting bit 1.2299.11, or equivalent functionality if the MDIO interface is not present. This action... (text from 4.2.1.174f goes on from here)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete text on lines 24-28 ("This action..." to "...exit the low-power mode").

Insert new clause after 147.1.2:

"147.1.3 Low-power mode
10BASE-T1S PHYs may optionally support a transition to a low-power state where data communication is interrupted. This low power mode may be entered by setting bit 1.2299.11, or equivalent functionality if the MDIO interface is not present. This action may also initiate a low-power mode in any other MMDs that are instantiated in the same package. The low-power mode is exited by resetting the 10BASE-T1S PMA/PMD. The behavior of the 10BASE-T1S PMA/PMD in transition to and from the low-power mode is implementation specific and any interface signals should not be relied upon. While in the low-power mode, the device shall, as a minimum, respond to management transactions necessary to exit the low-power mode)."

Cl **45** *SC* **45.2.1.174g.1** *P* **42** *L* **33** # 333

Zimmerman, George CME Consulting et al

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

"10BASE-T1S OAM ability" - OAM ability doesn't exist in clause 146

SuggestedRemedy

Delete 45.2.1.174g.1, and all clause 45 references to 10BASE-T1S OAM ability OR, add editor's note to clause 146 - "Editor's note (to be removed before WG ballot): OAM channel to be defined in clause 146 or deleted from management - comments and text requested."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
EITHER
delete 45.2.1.174g.1, and all clause 45 references to 10BASE-T1S OAM ability
OR
add editor's note to the beginning of clause 146 - "Editor's note (to be removed before WG ballot): OAM channel to be defined in clause 146 or deleted from management - comments and text requested."

Cl **45** *SC* **45.2.1.174h** *P* **43** *L* **26** # 334

Zimmerman, George CME Consulting et al

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

Editor's note - regarding user field - in many past incidents, exchange of a user defined field has aided interoperability and enhanced operational utility. I recommend we keep this for 10BASE-T1S

SuggestedRemedy

delete editor's note. (text for the field is already in place), and editor's note on p44 line 20 at 45.2.1.174i)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete Editor's Note starting on line 26.

Cl **45** *SC* **45.2.1.174j** *P* **45** *L* **18** # 335

Zimmerman, George CME Consulting et al

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

The only test modes defined in clause 147 are test modes 1, 2 and 3. here 1,2, and 4-7 are defined, while 3 is reserved.

SuggestedRemedy

Replace descriptions in Table 45-142j at lines 18-21 for Test modes 7 - 4 with "1 x x = Reserved", Replace description "0 1 1 = Reserved" with "0 1 1 = Test mode 3"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Change description for bits 1.2303.15:13 to:
15 14 13
1 x x = Reserved
0 1 1 = Test mode 2
0 1 0 = Test mode 2
0 0 1 = Test mode 1
0 0 0 = Normal (non-test) operation

Cl **45** *SC* **45.2.3** *P* **46** *L* **3** # 336

Zimmerman, George CME Consulting et al

Comment Type **E** *Comment Status* **D** *Registers*

Editor's note - "subclause references are placeholders" appears to be old and out of date (subclauses are as numbered in the draft). If there is some specific deficiency, I don't see it.

SuggestedRemedy

delete editor's note

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete Editor's Note starting on line 3.

Cl **45** *SC* **45.2.3** *P* **46** *L* **18** # 69

Graber, Steffen — Pepperl+Fuchs GmbH

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

3.2280 10BASE-T1L PCS status 2

SuggestedRemedy

Set register 3.2280 to "Reserved", remove Sub clause reference.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change name for register 3.2280 from "10BASE-T1L PCS status 2" to "Reserved" and delete reference to subclause 45.2.3.58c in Table 45-168. Show underline change marks.

Delete subclauses 45.2.3.58c, 45.2.3.58c.1, 45.2.3.58c.2, 45.2.3.58c.3, 45.2.3.58c.4, 45.2.3.58c.5, 45.2.3.58c.6, and Table 45-220c and renumber following subclauses sequentially.

(Same resolution proposed for comments #69, #71, #337 and #338)

Cl **45** *SC* **45.2.3** *P* **46** *L* **19** # 70

Graber, Steffen — Pepperl+Fuchs GmbH

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

3.2281 to 3.2290 OAM Registers

SuggestedRemedy

Set registers 3.2281 to 3.2290 to "Reserved" and remove Sub Clause references.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. This proposal assumes that comment #69 has been implemented. Change register "3.2280" to "3.2280 through 3.2290". Show underline change marks.

Delete rows for registers 3.2281 to 3.2290 in Table 145-168.

Delete subclauses 45.2.3.58d, 45.2.3.58e, 45.2.3.58f, 45.2.3.58g, and all subclauses and Tables contain therein and renumber following subclauses sequentially.

(Same resolution proposed for comments#70, #72, #73, #74, and #75)

Cl **45** *SC* **45.2.3.58c** *P* **48** *L* **8** # 338

Zimmerman, George — CME Consulting et al

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

"PCS high BER" and "Latched high BER" - unlike 1000BASE-T1, 10BASE-T1L and 10BASE-T1S have no way to detect BER on their own. There may be more appropriate signal quality measures (right now SNR is only in OAM) but as defined these registers don't have a standardized meaning. These might be PMA status rather than PCS status

SuggestedRemedy

Delete PCS high BER 3.2280.9, and Latched high BER 3.2280.7, and descrbing sections; also delete same bits on 10BASE-T1S. Add ed's notes by 10BASE-T1S and 10BASE-T1L PCS and PMA status registers - "Editor's note (to be removed prior to WG ballot) - Commenters to consider what signal quality metrics are needed to report, and comment/provide text appropriately"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change name for register 3.2280 from "10BASE-T1L PCS status 2" to "Reserved" and delete reference to subclause 45.2.3.58c in Table 45-168. Show underline change marks.

Delete subclauses 45.2.3.58c, 45.2.3.58c.1, 45.2.3.58c.2, 45.2.3.58c.3, 45.2.3.58c.4, 45.2.3.58c.5, 45.2.3.58c.6, and Table 45-220c and renumber following subclauses sequentially.

(Same resolution proposed for comments #69, #71, #337 and #338)

Cl **45** *SC* **45.2.3.58c** *P* **48** *L* **43** # 71

Graber, Steffen — Pepperl+Fuchs GmbH

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

10BASE-T1L PCS status 2 register

SuggestedRemedy

Remove Sub clause, and also table 45-220c.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change name for register 3.2280 from "10BASE-T1L PCS status 2" to "Reserved" and delete reference to subclause 45.2.3.58c in Table 45-168. Show underline change marks.

Delete subclauses 45.2.3.58c, 45.2.3.58c.1, 45.2.3.58c.2, 45.2.3.58c.3, 45.2.3.58c.4, 45.2.3.58c.5, 45.2.3.58c.6, and Table 45-220c and renumber following subclauses sequentially.

(Same resolution proposed for comments #69, #71, #337 and #338)

Cl **45** *SC* **45.2.3.58c** *P* **48** *L* **45** # 337

Zimmerman, George — CME Consulting et al

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

"Editor's note - 10BASE-T1L PCS doesn't have block lock, but may be replaced by something like disparity error." - disparity error appears to be the right thing - replace block lock bit with disparity error. This happens for both the normal and latched versions.

SuggestedRemedy

Delete editor's note. Change bit 2280.6 from "PCS has (does not have) block lock" to "1 = PCS reports no disparity errors, 0 = PCS reports disparity errors", and change 45.2.3.58c.3 from "PCS block lock" to "PCS disparity", and change 45.2.3.58c.3 to read: "When read as a one, bit 3.2280.8 indicates that the 10BASE-T1L PCS receiver has detected no dispairty errors. When read as a zero, bit 3.2280.8 indicates that the 10BASE-T1L PCS receiver has detected disparity errors. This bit is a reflection of the variable disparity_error defined at 146.3.4.1.1." (similarly replace "latched high block lock" with parallel text for disparity errors)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change name for register 3.2280 from "10BASE-T1L PCS status 2" to "Reserved" and delete reference to subclause 45.2.3.58c in Table 45-168. Show underline change marks.

Delete subclauses 45.2.3.58c, 45.2.3.58c.1, 45.2.3.58c.2, 45.2.3.58c.3, 45.2.3.58c.4, 45.2.3.58c.5, 45.2.3.58c.6, and Table 45-220c and renumber following subclauses sequentially.

(Same resolution proposed for comments #69, #71, #337 and #338)

Cl **45** *SC* **45.2.3.58b.6** *P* **48** *L* **48** # 157

Graber, Steffen — Pepperl+Fuchs GmbH

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

This bit is a latching low version of bit 3.2280.10. The PCS receive link status bit shall be implemented with latching low behavior.

SuggestedRemedy

This bit is a latching low reflection of the variable scr_status. If the bit is read, while scr_status = OK, this bit is set. If scr_status = NOT_OK, this bit is reset.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace,
"This bit is a latching low version of bit 3.2280.10. The PCS receive link status bit shall be implemented with latching low behavior."

with,
"This bit is a latching low reflection of the variable scr_status. If the bit is read, while scr_status = OK, this bit is set. If scr_status = NOT_OK, this bit is reset."

Cl **45** *SC* **45.2.3.58d** *P* **50** *L* **10** # 72

Graber, Steffen — Pepperl+Fuchs GmbH

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

10BASE-T1L OAM transmit register

SuggestedRemedy

Remove Sub clause, and also table 45-220d.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change register "3.2280" to "3.2280 through 3.2290". Show underline change marks.

Delete rows for registers 3.2281 to 3.2290 in Table 145-168.

Delete subclauses 45.2.3.58d, 45.2.3.58e, 45.2.3.58f, 45.2.3.58g, and all subclauses and Tables contain therein and renumber following subclauses sequentially.

(Same resolution proposed for comments#70, #72, #73, #74, and #75)

Cl **45** *SC* **45.2.3.58e** *P* **51** *L* **43** # 73

Graber, Steffen — Pepperl+Fuchs GmbH

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

10BASE-T1L OAM message register

SuggestedRemedy

Remove Sub clause, and also table 45-220e.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change register "3.2280" to "3.2280 through 3.2290". Show underline change marks.

Delete rows for registers 3.2281 to 3.2290 in Table 145-168.

Delete subclauses 45.2.3.58d, 45.2.3.58e, 45.2.3.58f, 45.2.3.58g, and all subclauses and Tables contain therein and renumber following subclauses sequentially.

(Same resolution proposed for comments#70, #72, #73, #74, and #75)

Cl **45** *SC* **45.2.3.58f** *P* **52** *L* **17** # 74

Graber, Steffen Pepperl+Fuchs GmbH

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

10BASE-T1L OAM receive register

SuggestedRemedy

Remove Sub clause, and also table 45-220f.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change register "3.2280" to "3.2280 through 3.2290". Show underline change marks.

Delete rows for registers 3.2281 to 3.2290 in Table 145-168.

Delete subclauses 45.2.3.58d, 45.2.3.58e, 45.2.3.58f, 45.2.3.58g, and all subclauses and Tables contain therein and renumber following subclauses sequentially.

(Same resolution proposed for comments#70, #72, #73, #74, and #75)

Cl **45** *SC* **45.2.3.58g** *P* **53** *L* **21** # 75

Graber, Steffen Pepperl+Fuchs GmbH

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

10BASE-T1L OAM message register

SuggestedRemedy

Remove Sub clause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change register "3.2280" to "3.2280 through 3.2290". Show underline change marks.

Delete rows for registers 3.2281 to 3.2290 in Table 145-168.

Delete subclauses 45.2.3.58d, 45.2.3.58e, 45.2.3.58f, 45.2.3.58g, and all subclauses and Tables contain therein and renumber following subclauses sequentially.

(Same resolution proposed for comments#70, #72, #73, #74, and #75)

Cl **45** *SC* **45.2.3.58n** *P* **60** *L* **24** # 309

iyer, venkat microchip

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

missing registers

SuggestedRemedy

addtable with registers 3.2300 to 3.2303

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Add sentence to the end of the last sentence in clause 45.2.3.58n, "The assignment of bits in the Link partner 10BASE-T1S OAM message register bit is shown in Table 45-220m."

Add new Table 45-220m - Link partner 10BASE-T1S OAM message register bit definitions

Row 1:
Bit(s)
Name
Description
R/W^a

Row 2:
3.2300.15:8
Link partner 10BASE-T1S OAM message 1
Message octet 1. LSB received first.
RO

Row 3:
3.2300.7:0
Link partner 10BASE-T1S OAM message 0 Message octet 0. LSB received first.
RO

Row 4:
3.2301.15:8
Link partner 10BASE-T1S OAM message 3
Message octet 3. LSB received first.
RO

Row 5:
3.2301.7:0
Link partner 10BASE-T1S OAM message 2
Message octet 2. LSB received first.
RO

Row 6:
3.2302.15:8
Link partner 10BASE-T1S OAM message 5
Message octet 5. LSB received first.

RO

Row 7:
3.2302.7:0
Link partner 10BASE-T1S OAM message 4
Message octet 4. LSB received first.
RO

Row 8:
3.2303.15:8
Link partner 10BASE-T1S OAM message 7
Message octet 7. LSB received first.
RO

Row 9:
3.2303.7:0
Link partner 10BASE-T1S OAM message 6
Message octet 6. LSB received first.
RO

^aRO = Read Only

Note: If comment #70 is not accepted, then register definitions for addresses 3.2287 to 3.2290 will need to be included in a similar table (Link partner 10BASE-T1L OAM message register bit definitions) added to 45.2.3.58g.

Cl **98** *SC* **98.2.1.1.2** *P* **65** *L* **17** # 76

Graber, Steffen — Pepperl+Fuchs GmbH

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

., the state machine .

SuggestedRemedy

., a state machine ...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "the state machine" with "a state machine"

Cl **98** *SC* **98.2.1.1.2** *P* **65** *L* **24** # 77

Graber, Steffen — Pepperl+Fuchs GmbH

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

0.01%

SuggestedRemedy

0.01 % (several times a % symbol is used throughout the standard, depending on the chapter there is a space between the number and the % symbol or not, it could make sense to unify this throughout the document, this is the only comment on this, further % symbol occurances are not commented).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. According to the Style Manual, the value of a quantity shall be expressed by an Arabic numeral followed by a space and the appropriate unit name or symbol. Perform ag lobal search for "%" and insert non-breaking space between the number and percent sign.

Cl **98** *SC* **98.2.1.1.2** *P* **66** *L* **8** # 78

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **X** *Editorial*

800.4

SuggestedRemedy

Change to 800.04 (800 ns + 50 ppm = 800.04 ns)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "800.4" with "800.04"

Cl **98** *SC* **98.5.2** *P* **67** *L* **23** # 29

Gottron, Jens — Siemens AG

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

AN LINK GOOD CHECK is not the usual text format used in the standard

SuggestedRemedy

Use for example "link_good_check=OK state"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. There is an error in clause 98.5.2 (page 225, line 15) and the PICS for 98.5.2 (page 235, line 31) of 802.3cj D3.0 that will be corrected with a late comment on the revision.

Replace "AN LINK GOOD CHECK " with "AN GOOD CHECK" on page 67, line 24, page 68, line 39, and in the PICS on page 73, line 17.

(Same resolution proposed for comments #29 and #28)

Cl **98** *SC* **98.5.2** *P* **67** *L* **23** # 28
Gottron, Jens Siemens AG

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

AN LINK GOOD CHECK is not defined

SuggestedRemedy

Define AN LINK GOOD CHECK, what does that mean? Why is that different to "link_status=OK"?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. There is an error in clause 98.5.2 (page 225, line 15) and the PICS for 98.5.2 (page 235, line 31) of 802.3cj D3.0 that will be corrected with a late comment on the revision.

Replace "AN LINK GOOD CHECK " with "AN GOOD CHECK" on page 67, line 24, page 68, line 39, and in the PICS on page 73, line 17.

(Same resolution proposed for comments #29 and #28)

Cl **98** *SC* **98.5.2** *P* **67** *L* **45** # 299
McCarthy, Mick Analog Devices Inc.

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

Typo in spelling of timer

SuggestedRemedy

replace "timerr" with "timer"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "timerr" with "timer"

(Same resolution proposed for comments #299 and #79)

Cl **98** *SC* **98.5.2** *P* **67** *L* **45** # 79
Graber, Steffen Pepperl+Fuchs GmbH

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

backoff_timerr

SuggestedRemedy

backoff_timer

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "timerr" with "timer"

(Same resolution proposed for comments #299 and #79)

Cl **98** *SC* **98.5.6** *P* **70** *L* **23** # 27
Gottron, Jens Siemens AG

Comment Type **E** *Comment Status* **D** *AutoNeg*

Abbreviation "AN" is not used in Standard anywhere else

SuggestedRemedy

Remove "AN" in figure 98-11 and 98-12 or write "auto negotiation"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. If state names can include non-defined abbreviations, leave it as it is. Otherwise, replace "AN" with "AUTO-NEGOTIATION" in figures 98-11 and 98-12."

Cl **98** *SC* **98.6.8** *P* **72** *L* **39** # 80
Graber, Steffen Pepperl+Fuchs GmbH

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

e from mode is not underlined

SuggestedRemedy

underline mode completely

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Extend underline change mark to the "e" from "mode".

Cl **98** *SC* **98.6.8** *P* **73** *L* **19** # 81
Graber, Steffen Pepperl+Fuchs GmbH

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

there is a "." at the end of the comment

SuggestedRemedy

Remove "." at the end of the comment (all other comments are not closed with a ".").

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete "." after the word "mode"

Cl **104** *SC* **104.4.1** *P* **75** *L* **22** # 82
Graber, Steffen Pepperl+Fuchs GmbH

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

a from and is not underlines

SuggestedRemedy

underline and completely

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Extend underline change mark to the "a" from "and".

Cl **104** *SC* **104.4.1** *P* **75** *L* **46** # 83
Graber, Steffen Pepperl+Fuchs GmbH

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

Parameter Text is written in "justify" style.

SuggestedRemedy

Sometimes hard to read. Could make sense to change the tables especially of Clause 104 to left alignment of text for the parameter column. This may affect all tables in Clause 104. There are no other comments on this for other table positions.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Left justify the "Parameter" column and disallow hypehnation of the words in the column.

Cl **104** *SC* **104.4.6.3** *P* **77** *L* **41** # 84
Graber, Steffen Pepperl+Fuchs GmbH

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

100O

SuggestedRemedy

100 O

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Insert space between 100 and ohms symbol if allowed by the equation editor.

Cl **104** *SC* **104.7.1.3** *P* **81** *L* **34** # 85
Graber, Steffen Pepperl+Fuchs GmbH

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

. 12, 13,14, 15, 18, 18, and 19, .

SuggestedRemedy

. 12, 13,14, 15, 17, 18, and 19, .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "18, 18, and 19" with "18, and 19"

Cl **104** *SC* **104.9.4.3** *P* **84** *L* **27** # 86
Graber, Steffen Pepperl+Fuchs GmbH

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

Powered Device (PD

SuggestedRemedy

Powered Device (PD)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Replace "(PD" with "(PD)"

Cl **146** *SC* **146.1** *P* **87** *L* **9** # 87
Graber, Steffen Pepperl+Fuchs GmbH

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

Physical Layer (PHY)

SuggestedRemedy

Physical Layer Device (PHY)

Proposed Response *Response Status* **W**

PROPOSED REJECT.
802.3 standard nomenclature is to refer to the physical layer, not the the physical layer device. The physical layer may be comprised of one or more devices.

Cl **146** *SC* **146.1** *P* **87** *L* **19** # 88
Graber, Steffen Pepperl+Fuchs GmbH

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

A 10BASE-T1L that supports .

SuggestedRemedy

A 10BASE-T1L PHY that supports .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.1.2** *P* **87** *L* **38** # 278
Xu, Dayin Rockwell Automation

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

10BASE-T1L PHY is an industrial PHY. Don't need to meet automotive requirement.

SuggestedRemedy

change ". of automotive and industrial environments" to " . of industrial environment"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 30 (duplicate of this)

Cl **146** *SC* **146.1.2** *P* **87** *L* **38** # 30
Gottron, Jens Siemens AG

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

10BASE-T1L is not suitable for automotive applications

SuggestedRemedy

remove "automotive and"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.1.2** *P* **87** *L* **44** # 31
Gottron, Jens Siemens AG

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

"MII TX_D" is not a single signal

SuggestedRemedy

change to "MII TXD<0:3>" or similar to the standard format

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change TXD to TXD<3:0>

Cl **146** *SC* **146.1.2** *P* **88** *L* **31** # 89
Graber, Steffen Pepperl+Fuchs GmbH

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

Clause 98

SuggestedRemedy

Accept Clause 98 as optional auto-negotiation method for 10BASE-T1L
(Graber_3cg_18_1117.pdf, page 2, Graber_3cg_19_1117.pdf)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "Auto-Negotiation (Clause 98) may optionally be used by 10BASE-T1L devices" to "Clause 98 Auto-Negotiation may optionally be used by 10BASE-T1L devices"

Cl **146** *SC* **146.1.2** *P* **88** *L* **33** # 90
Graber, Steffen Pepperl+Fuchs GmbH

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

. through the use of half-duplex differential Manchester encoding.

SuggestedRemedy

Accept this text part (see Clause 98 Comment).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
(editor change text to normal text from bold italic)

Cl **146** *SC* **146.1.2** *P* **88** *L* **35** # 91
Graber, Steffen Pepperl+Fuchs GmbH

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

If Auto-Negotiation is implemented, it shall meet the requirements of Clause 98.

SuggestedRemedy

Accept this text part (see Clause 98 Comment).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.1.2** *P* **88** *L* **52** # 92
Graber, Steffen Pepperl+Fuchs GmbH

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

A 10BASE-T1L PHY may optionally support Energy-Efficient Ethernet (see Clause 78).

SuggestedRemedy

Accept this text part (currently no EEE is defined for 10BASE-T1L, but it is demanded in the objectives).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.1.2** *P* **88** *L* **53** # 93
Graber, Steffen Pepperl+Fuchs GmbH

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

. and advertising the EEE capability as described in 146.4.x.x.x (TBD)

SuggestedRemedy

Delete this text part (EEE capability is suggested to be negotiated during auto negotiation process (Clause 98)).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
No need to specify where / how advertising is done, but the notion that it is advertised should be kept - we can add in where when we're done.

Change "and advertising the EEE capability as described in 146.4.x.x.x (TBD)" to "and advertising the EEE capability."

Cl **146** *SC* **146.1.2.1ff** *P* **89** *L* **5** # 370
Beruto, Piergiorgio Canova Tech Srl

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

Text for clause 146.1.2.1 and following clauses is missing.

SuggestedRemedy

Add text proposed in document "Clause 146 Proposed Additional Text.pdf" for the mentioned clause(s).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Incorporate text for review, without acceptance, on pages 1 and 2 of "Clause 146 Proposed Additional Text.pdf" for 146.1.2.1, 146.1.2.2, 146.1.2.3, 146.1.3 (and subclauses), and 146.2 (and subclauses) with the following Editor's note: "Editor's Note (to be removed prior to Working Group Ballot): The following text was added to D1.1 for Task Force Review,WITHOUT ACCEPTANCE because it is substantial new matter. Reviewers are encouraged to comment and propose acceptance or modification in the Task Force review process."

Cl **146** *SC* **146.3.1** *P* **89** *L* **47** # 94
Graber, Steffen Pepperl+Fuchs GmbH

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

. while any of the above reset conditions hold true.

SuggestedRemedy

. while any of the above reset conditions holds true.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.2.1** *P* **91** *L* **39** # 95
Graber, Steffen Pepperl+Fuchs GmbH

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

When set to FALSE .

SuggestedRemedy

When this variable is set to FALSE . (to align the text with tx_error_mii description)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "When set to FALSE ." with "When this variable is set to FALSE ."

Cl **146** *SC* **146.3.3.1** *P* **92** *L* **13** # 96
Graber, Steffen Pepperl+Fuchs GmbH

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

In each symbol period, PCS Transmit .

SuggestedRemedy

In each symbol period PCS Transmit .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.3.1** *P* **92** *L* **41** # 97
Graber, Steffen Pepperl+Fuchs GmbH

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

. symbols An at each .

SuggestedRemedy

. symbols An (where n is a subscript character) at each .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change An to format "n" as a subscript.

Cl **146** SC **146.3.3.1** P **92** L **46** # 98
Graber, Steffen Pepperl+Fuchs GmbH

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

. at receiver side .

SuggestedRemedy

. at the receiver side .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** SC **146.3.3.1** P **92** L **48** # 99
Graber, Steffen Pepperl+Fuchs GmbH

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

. at receiver PHY .

SuggestedRemedy

. at the receiver PHY .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** SC **146.3.3.1.1** P **93** L **21** # 100
Graber, Steffen Pepperl+Fuchs GmbH

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

When set to FALSE .

SuggestedRemedy

When this variable is set to FALSE . (to align the text with tx_error_mii description)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "When set to FALSE" to "When this variable is set to FALSE"

Cl **146** SC **146.3.3.1.1** P **94** L **2** # 101
Graber, Steffen Pepperl+Fuchs GmbH

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

. the values {-1, 0, +1}.

SuggestedRemedy

Please write in one line.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** SC **146.3.3.1.2** P **94** L **12** # 102
Graber, Steffen Pepperl+Fuchs GmbH

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

. its arguments Sdn[3:0] and the .

SuggestedRemedy

. its arguments Sdn[3:0] and the . (Sdn, where n is a subscript character)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** SC **146.3.3.1.2** P **94** L **16** # 103
Graber, Steffen Pepperl+Fuchs GmbH

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

ENCODE(Sdn[3:0], tx_disparity)

SuggestedRemedy

ENCODE(Sdn[3:0], tx_disparity) (Sdn, where n is a subscript character)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** SC **146.3.3.1.2** P **94** L **19** # 104
Graber, Steffen Pepperl+Fuchs GmbH

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

. based on the Sdn[3:0] value .

SuggestedRemedy

. based on the Sdn[3:0] value . (Sdn, where n is a subscript character)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** SC **146.3.3.1.3** P **94** L **45** # 105
Graber, Steffen Pepperl+Fuchs GmbH

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

. timer expiration

SuggestedRemedy

. timer expiration. (add dot)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.3.1.3** *P* **94** *L* **46** # 106

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *State diagram*

No Restart defined.

SuggestedRemedy

Restart time: Immediately after expiration, timer restart resets the condition symb_triplet_timer_done.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Insert following "Continuous timer" line 46 and before "Duration" line 47:
"Restart time: Immediately after expiration, timer restart resets the condition symb_triplet_timer_done."

Cl **146** *SC* **146.3.3.1.4** *P* **95** *L* **7** # 158

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *State diagram*

Adding of additional error variable to several state machine states (latching of tx_error_mii until end of transmission, to guarantee, that if the tx_error_mii variable is only TRUE for a short moment during transmission, that the ESD_ERR is signalized)

SuggestedRemedy

Add error <= FALSE to state "SEND IDLE", add error <= error + tx_error_mii to all of the following states: "SSD COMMA1 VECTOR", "SSD COMMA2 VECTOR", "SSD DISPRESET VECTOR", "SSD VECTOR", "TRANSMIT DATA", exchange "tx_error_mii" with "error" in all conditions within the state machine (in total 4 replacements).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.3.1.4** *P* **95** *L* **8** # 107

Graber, Steffen — Pepperl+Fuchs GmbH

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

Sdn[3:0]

SuggestedRemedy

Sdn[3:0], where n is a subscript character

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.3.1** *P* **95** *L* **11** # 260

Xu, Dayin — Rockwell Automation

Comment Type **T** *Comment Status* **D** *State diagram*

Figure 146-4: The transition condition "STD * ELSE" for the State "SEND_IDLE" and "TRANSMIT DATA" is not explicit. The same comment applies to other figures. Task Force needs to discuss this and determine whether this "ELSE" style is OK or not before taking any action

SuggestedRemedy

Change "STD * ELSE" for the state "SEND_IDLE" to "STD * tx_enable_mii = FALSE"; change "STD * ELSE" for the state "TRANSMIT DATA" to "STD * tx_enable_mii = TRUE". Refer to PAGE 2 of the accompanied presentation xu_3cg_01_0118.pdf.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
802.3 nomenclature defines a branch labeled as "ELSE" as "A branch taken when other exit conditions are not satisfied", but not any logical function of "ELSE". Editor searched and did not find other instances of "ELSE * xyz" in IEEE Std 802.3-2015.

Allowing functions of "ELSE" creates ambiguity.

Change "STD * ELSE" for the state "SEND_IDLE" to "STD * tx_enable_mii = FALSE"; change "STD * ELSE" for the state "TRANSMIT DATA" to "STD * tx_enable_mii = TRUE".

Editor to search and scrub state diagrams for other possible misused "functions of ELSE".

Cl **146** *SC* **146.3.3.1.4** *P* **95** *L* **50** # 108

Graber, Steffen — Pepperl+Fuchs GmbH

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

STD * (tx_enable_mii = FALSE)* (tx_error_mii = TRUE)

SuggestedRemedy

STD * (tx_enable_mii = FALSE) * (tx_error_mii = TRUE)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
(insert missing space after first close-paren)

Cl **146** *SC* **146.3.3.2** *P* **96** *L* **9** # 109
Graber, Steffen Pepperl+Fuchs GmbH

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

tx_symbol_triplet

SuggestedRemedy

tx_symb_triplet

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.3.2.1** *P* **96** *L* **33** # 159
Graber, Steffen Pepperl+Fuchs GmbH

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

G(x) =

SuggestedRemedy

Please replace by gm(x) =, where m is a subscript character. This is to align the notation with the receiver descrambler polynomial notation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.3.2.1** *P* **96** *L* **37** # 160
Graber, Steffen Pepperl+Fuchs GmbH

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

G(x) =

SuggestedRemedy

Please replace by gs(x) =, where s is a subscript character. This is to align the notation with the receiver descrambler polynomial notation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.3.2.1** *P* **96** *L* **41** # 110
Graber, Steffen Pepperl+Fuchs GmbH

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

At each symbol period, .

SuggestedRemedy

At each triple ternary symbol period, .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.3.2.4** *P* **97** *L* **47** # 111
Graber, Steffen Pepperl+Fuchs GmbH

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

. shall be generated as follows

SuggestedRemedy

.. shall be generated as follows:

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove space between "follows" and ":"

Cl **146** *SC* **146.3.3.2.4** *P* **98** *L* **1** # 112
Graber, Steffen Pepperl+Fuchs GmbH

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

:

SuggestedRemedy

Remove : (needs to be on previous page)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change accomplished by 111

Cl **146** *SC* **146.3.3.2.4** *P* **98** *L* **15** # 113
Graber, Steffen Pepperl+Fuchs GmbH

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

Misalignment of equations

SuggestedRemedy

Please align Sdn[1:0] to Sdn[2] and Sdn[3] Equation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.3.2.5** *P* **98** *L* **27** # 114
Graber, Steffen Pepperl+Fuchs GmbH

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

. using the 4B3T algorithm using a running disparity value, .

SuggestedRemedy

. using the 4B3T algorithm in conjunction with a running disparity value, ...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.3.2.5** *P* **98** *L* **33** # 339

Zimmerman, George — CME Consulting et al

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

values of COMMA1 and COMMA2 symbols are identical - this should be just COMMA. Also effects variables at 146.3.3.1.1 and state diagram.

SuggestedRemedy

Change "is used as COMMA1 and COMMA2 value" to "is used as the COMMA value". Delete table 146-2 and editor's note on page 99 line 44. change page 92 line 51 to delete COMMA2 and change COMMA1 to just plain COMMA. Also change values used in states SSD_COMMA1_VECTOR and SSD_COMMA2_VECTOR (but not state names) to just plain COMMA in Figure 146-4 (page 95)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement described changes, and change values of COMMA1 and COMMA2 to COMMA in Figure 146-7 (PCS receive machine). Editor to scrub document for any references which may have been missed and update.

Cl **146** *SC* **146.3.3.2.5** *P* **98** *L* **35** # 115

Graber, Steffen — Pepperl+Fuchs GmbH

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

. during training:

SuggestedRemedy

. during training.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.3.2.5** *P* **99** *L* **34** # 116

Graber, Steffen — Pepperl+Fuchs GmbH

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

Table 146-2

SuggestedRemedy

Remove table 146-2 (redundant information to last paragraph on page 98).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Accomplised by comment 339

Cl **146** *SC* **146.3.3.2.5** *P* **99** *L* **48** # 117

Graber, Steffen — Pepperl+Fuchs GmbH

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

Last paragraph between lines 48 and54.

SuggestedRemedy

Remove text and replace by: The DISPRESET3 triplet, together with the following fourth symbol group (which always has a disparity of 1), is used to bring back the running disparity to a defined value of 2. The following coding shall be used for the DISPRESET3 symbol triplet:

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change line 49 as follows:
Change "to a defined value." to "to a defined value of 2."
Delete lines 49 - 52, from "The DISRESET3 symbol triplet." to "disparity again."
Change lines 52-53 from "The following coding shall be used for the DISPRESET3 symbol triplet:" to "The coding shown in Table 146-3 shall be used for the DISPRESET3 symbol triplet."

Cl **146** *SC* **146.3.3.2.5** *P* **100** *L* **8** # 118

Graber, Steffen — Pepperl+Fuchs GmbH

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

The fourth symbol group .

SuggestedRemedy

Place this text line between Table 146-3 and Table 146-4 (move to line 16).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "shall be encoded as follows" to "shall be encoded as shown in Table 146-4"

Cl **146** *SC* **146.3.4.1** *P* **100** *L* **44** # 119
Graber, Steffen Pepperl+Fuchs GmbH

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

., shall be implemented to prevent any mis-detection of ESD that would make the PCS Receive state machine lock up in the DATA state.

SuggestedRemedy

., shall be implemented to prevent in case of any mis-detection of an ESD that the PCS Receive state machine locks up in the DATA state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "A JAB state machine as shown in Figure 146-9, shall be implemented to prevent any mis-detection of ESD
that would make the PCS Receive state machine lock up in the DATA state."

to "The PCS Receive function shall conform to the JAB state diagram in Figure 146-9. This prevents the possible lock-up of the PCS Receive state diagram in the DATA state due to mis-detection of an ESD."

Cl **146** *SC* **146.3.4.1** *P* **100** *L* **50** # 120
Graber, Steffen Pepperl+Fuchs GmbH

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

. that perform DATA encoding.

SuggestedRemedy

. that perform data encoding.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.4.1** *P* **100** *L* **51** # 121
Graber, Steffen Pepperl+Fuchs GmbH

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

., the depth of data flush-in delay line .

SuggestedRemedy

., the depth of the data flush-in delay line .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.4.1** *P* **102** *L* **3** # 161
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

Condition to enter IDLE state (second arrow from left)

SuggestedRemedy

Add brackets around (receiving = FALSE) . until end of the conditions, to ensure, that (pcs_Reset = ON) is not misinterpreted as staying in conjunction with the (receiving = FALSE) statement. Additionally add opeining bracket before rcv_jab_detected = TRUE).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add opening bracket before rcv_jab_detected = TRUE

Cl **146** *SC* **146.3.4.1** *P* **102** *L* **13** # 162
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

RSTCD * (Rxn = COMMA1) * (valid_idle = FALSE)

SuggestedRemedy

RSTCD * (Rxn != COMMA1) * (valid_idle = FALSE)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change COMMA1 to COMMA if comment 339 is accepted.

Cl **146** *SC* **146.3.4.1** *P* **102** *L* **14** # 122
Graber, Steffen Pepperl+Fuchs GmbH

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

(valid_idele = FALSE)

SuggestedRemedy

(valid_idle = FALSE)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.4.1** *P* **102** *L* **14** # 262
Xu, Dayin Rockwell Automation

Comment Type **T** *Comment Status* **D** *State diagram*

Figure 146-7: The transition condition "RSTCD * (RXn = COMMA1)" from the state IDLE to the state CHECK SSD COMMA2 is not complete or correct

SuggestedRemedy

Change the transtion condition "RSTCD * (RXn = COMMA1)" to "RSTCD * (RXn = COMMA1) * (valid_idle = TRUE)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 162. Correction of the typo corrects the transition in this state.

Cl **146** *SC* **146.3.4.1** *P* **102** *L* **14** # 261
Xu, Dayin Rockwell Automation

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

Figure 146-7: typo "valid_idele"

SuggestedRemedy

change "valid_idele" to "valid_idle"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. (dup of 122)

Cl **146** *SC* **146.3.4.1.1** *P* **105** *L* **10** # 163
Graber, Steffen Pepperl+Fuchs GmbH

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

. take one of the values .

SuggestedRemedy

Please adjust text alignment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.4.1.1** *P* **105** *L* **17** # 164
Graber, Steffen Pepperl+Fuchs GmbH

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

.at receiver side .

SuggestedRemedy

. at the receiver side .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.4.1.1** *P* **105** *L* **18** # 165
Graber, Steffen Pepperl+Fuchs GmbH

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

. set to 2. Values: .

SuggestedRemedy

Add new line before Values.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.4.1.1** *P* **105** *L* **25** # 166
Graber, Steffen Pepperl+Fuchs GmbH

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

. is set FALSE.

SuggestedRemedy

. is set as FALSE.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "is set FALSE" to "is set to FALSE" (this is the usual phrasing)

Cl **146** *SC* **146.3.4.1.2** *P* **105** *L* **33** # 167
Graber, Steffen Pepperl+Fuchs GmbH

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

The function checks .

SuggestedRemedy

This function checks .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.4.1.2** *P* **105** *L* **36** # 168
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *State diagram*

Editor's Note

SuggestedRemedy

Remove Editor's Note and hint about about Srn[2:3]. The description of Srn[2] and Srn[3] is only a hint and not really necessary (if anybody thinks a little about this it should be clear), so the suggestion is to remove it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.4.1.3** *P* **106** *L* **19** # 169
Graber, Steffen Pepperl+Fuchs GmbH

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

The timer shall expire TBD after being started.

SuggestedRemedy

The timer shall expire 4 ms ± 100 µs after being started. Please remove the italic text. Outcome of the discussion on Orlando about Jumbo Frames was that a size of 4 Kbyte is suitable for 10BASE-T1L. This equals to a little above 3.3 ms. Therefore the suggestion is to set the timer to 4 ms ± 100 µs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.4.2** *P* **106** *L* **27** # 171
Graber, Steffen Pepperl+Fuchs GmbH

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

The receiver de-interleaves .

SuggestedRemedy

Remove this sentence as it is redundant to the first sentence of the next paragrgaph.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Delete "The receiver de-interleaves the
sequences of rx_symb_vector to rx_symb_triplet accordingly."

Cl **146** *SC* **146.3.4.2** *P* **106** *L* **27** # 170
Graber, Steffen Pepperl+Fuchs GmbH

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

. and searches for SSD or receive error indicator.

SuggestedRemedy

. and searches for a SSD or receive error indicator.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.4.2** *P* **106** *L* **43** # 172
Graber, Steffen Pepperl+Fuchs GmbH

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

PCS Receive shall set RX_DV = TRUE when it receives SSD, and shall set RX_DV = FALSE when it receives ESD or ESD with error.

SuggestedRemedy

PCS Receive shall set RX_DV = TRUE when it receives a SSD, and shall set RX_DV = FALSE when it receives an ESD or ESD with error.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "PCS Receive shall set RX_DV = TRUE when it receives SSD, and shall set RX_DV = FALSE when it receives ESD or ESD with error."
to
"PCS Receive shall set RX_DV = TRUE when it receives an SSD, and shall set RX_DV = FALSE when it receives an ESD or ESD with error."

Cl **146** *SC* **146.3.4.2** *P* **106** *L* **49** # 173
Graber, Steffen Pepperl+Fuchs GmbH

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

Editor's Note and Figure 146-10

SuggestedRemedy

This diagram was just for explanation, it is not really needed for implementing the standard, so the suggestion is to follow the editor's recommendation and remove it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.3.5** *P* **107** *L* **52** # 174
Graber, Steffen Pepperl+Fuchs GmbH

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

. when the loopback bit in MDIO register 3.0.14, defined in 45.2.3.1.2, is set to a one .

SuggestedRemedy

. when the loopback bit in MDIO register 3.0.14, defined in 45.2.3.1.2, or the loopback bit in MDIO register 3.2278.14, defined in 45.2.3.58a, is set to a one .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "register 3.0.14, defined in 45.2.3.1.2" to "register 3.2278.14, defined in 45.2.3.58a"

Bit 3.2278.14 is a copy of 3.0.14, and setting or clearing either bit sets or clears the other.
The proposed text is parallel to 802.3bp-2016.

Cl **146** *SC* **146.3.5** *P* **108** *L* **25** # 175
Graber, Steffen Pepperl+Fuchs GmbH

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

Editor's Note and following paragraph.

SuggestedRemedy

It is right, that the comparison is done on top of the MAC layer and not by the MAC layer itself. In principle it is clear, how the PCS loopback should work, so the suggestion is to remove this paragraph.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Delete lines 25-32 (editor's note and referenced paragraph)

Cl **146** *SC* **146.4** *P* **109** *L* **18** # 176
Graber, Steffen Pepperl+Fuchs GmbH

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

loc_rcvr_status is fed into LINK MONITOR block.

SuggestedRemedy

Use tx_mode instead of loc_rcvr_status (the status of the LINK MONITOR depends on link_control and tx_mode only).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
The comment reflects what the Link Monitor state machine does, but link monitor only ain and goes to fail if the PHY control goes back to TRANSMITTER DISABLE and can oscillate back and forth trying to retrain and failing with loc_rcvr_status = NOT_OK except for short intervals and link never down.

Cl **146** *SC* **146.4.2** *P* **110** *L* **7** # 177
Graber, Steffen Pepperl+Fuchs GmbH

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

. conveys to the PMA using tx_symb_vector the value .

SuggestedRemedy

. conveys to the PMA, using tx_symb_vector, the value .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "conveys to the PMA using tx_symb_vector the value" to "conveys to the PMA via the paramter tx_symb_vector the value"
(standard usage in IEEE Std. 802.3)

Cl **146** *SC* **146.4.2** *P* **110** *L* **23** # 178
Graber, Steffen Pepperl+Fuchs GmbH

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

PMA Transmit Function

SuggestedRemedy

PMA Transmit function

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.2** *P* **110** *L* **25** # 179
Graber, Steffen Pepperl+Fuchs GmbH

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

PMA Transmit Function

SuggestedRemedy

PMA Transmit function

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.3** *P* **110** *L* **41** # 180
Graber, Steffen Pepperl+Fuchs GmbH

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

This variable indicates to the PCS Transmitter, PCS Receiver, PMA PHY Control function and Link Monitor whether .

SuggestedRemedy

This variable indicates to the PCS Transmitter, PCS Receiver and PMA PHY Control function whether . (the Link Monitor is not getting this information).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See comment 176

Cl **146** *SC* **146.4.3** *P* **111** *L* **18** # 181
Graber, Steffen Pepperl+Fuchs GmbH

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

link_status = Fail

SuggestedRemedy

link_stauts = FAIL

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.3** *P* **111** *L* **19** # 182
Graber, Steffen Pepperl+Fuchs GmbH

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

. shall contribute to the receive fault bit specified in 45.2.1.7.5.

SuggestedRemedy

. shall contribute to the receive fault bit specified in 45.2.1.7.5 and 45.2.1.174b.6.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "45.2.1.7.5" to "45.2.1.174b.6"
(this is the receive fault bit for 10BASE-T1L)

Cl **146** *SC* **146.4.4** *P* **111** *L* **38** # 183
Graber, Steffen Pepperl+Fuchs GmbH

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

TBD

SuggestedRemedy

3000 ms (Graber_3cg_18_1117.pdf, page 5, results of discussions in Orlando about this presentation)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "less than TBD (suggested are 3000 ms)." with "less than 3 s". (802.3 style, numbers are exact)

Cl **146** *SC* **146.4.4** *P* **111** *L* **39** # 184
Graber, Steffen Pepperl+Fuchs GmbH

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

. filter coefficient is available .

SuggestedRemedy

. filter coefficients is available .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.5** *P* **111** *L* **45** # 185
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

Chapter ordering seems to need reordering.

SuggestedRemedy

146.5 describes the link monitor function, so this capter should be placed after Figure 146-15. Additionally chapter 146.4.7 should start before Figure 146-5 (it is the headling for the Figure 146-15) and have the numbering 146.4.4.1, chapter 146.4.7.1 should be chapter 146.4.4.2, chapter 146.4.7.2 should be chapter 146.4.4.3, then chapter 146.4.5 (link monitor function should be placed), chapter 146.4.5.2 should then be chapter 146.4.5.1 and chapter 146.4.5.1 should be chapter 146.4.5.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Move subclauses to 146.4.7 (146.4.7.1 and 146.4.7.2) before 145.4.5 so they become 146.4.4.1 and 146.4.4.2
Move 146.4.7 after (new) 146.4.4.2 and demote a level so it is 146.4.4.3 and anchor figure 146-15 in new 146.4.4.3.

Cl **146** *SC* **146.4.4** *P* **111** *L* **51** # 186

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

Editor's Note about the note on the bottom of page 112.

SuggestedRemedy

In principle we do not need it, but it could be an explanation, why the state machine is having the clock_recovered completed path (and it allows for a different implementation waiting until the training is ready), so my personal view would be to keep it, but finally it depends on the groups' decision if we want to keep it or not.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Delete the editor's note at page 111 line 51 and
delete NOTE at page 112 lines 47-52

Cl **146** *SC* **146.4.4** *P* **112** *L* **1** # 187

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

link_control = DISABLE + pma_reset = ON

SuggestedRemedy

(pma_reset = ON) + (link_control = DISABLE) (add brackets)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.4** *P* **112** *L* **10** # 188

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

(link_control=ENABLE) * (config = MASTER)

SuggestedRemedy

(link_control = ENABLE) * (config = MASTER) (add spaces around = symbol)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.4** *P* **112** *L* **31** # 263

Xu, Dayin — Rockwell Automation

Comment Type **T** *Comment Status* **D** *State diagram*

Figure 146-15: "stop maxwait_timer" should be "start maxwait_timer" to limit the anount of time during which a receiver dwells in the SEND IDLE state

SuggestedRemedy

Change "stop maxwait_timer" to " start maxwait_timer"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.4** *P* **112** *L* **32** # 189

Graber, Steffen — Pepperl+Fuchs GmbH

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

stop maxwait_timer

SuggestedRemedy

start maxwait_timer

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. (dup with comment 263)

Cl **146** *SC* **146.4.4** *P* **112** *L* **42** # 190

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

rectangular brackets in logical equation

SuggestedRemedy

Remove rectangular opening and closing bracket in condition (there is no nee to group the AND conditions).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Use rectangular bracket to enclose the concatenated OR's. Delete opening "[" and final closing ")" and replace "(" with "[" so that arc out of SEND IDLE OR DATA changes from:
"minwait_timer_done * [
(TX_EN = FALSE) * (
(loc_rcvr_status = NOT_OK) +
(rem_rcvr_status= NOT_OK) +
(scr_status = NOT_OK))]"

to
"minwait_timer_done *
(tx_enable_mii = FALSE) *
[(loc_rcvr_status = NOT_OK) +
(rem_rcvr_status= NOT_OK) +
(scr_status = NOT_OK)]"

Cl **146** *SC* **146.4.5** *P* **112** *L* **43** # 192

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *State diagram*

(TX_EN = FALSE)

SuggestedRemedy

(tx_enable_mii = FALSE)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Accomplished by comment 190

Cl **146** *SC* **146.4.4** *P* **112** *L* **43** # 191

Graber, Steffen — Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

Opening bracket at the end of the line, space before second closing bracket at the end of the equation.

SuggestedRemedy

Please move opening bracket into next line, please remove space before closing bracket at the end of the equation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Accomplished by 190

Cl **146** *SC* **146.4.4** *P* **113** *L* **6** # 193

Graber, Steffen — Pepperl+Fuchs GmbH

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

. SEND_I.

SuggestedRemedy

. SEND_I (remove final dot, as in the other "value" sections).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.4** *P* **113** *L* **11** # 194

Graber, Steffen — Pepperl+Fuchs GmbH

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

. FAIL.

SuggestedRemedy

. FAIL (remove final dot, as in the other "value" sections).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.5.2** *P* **113** *L* **17** # 195
Graber, Steffen Pepperl+Fuchs GmbH

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

pma_reset = ON + link_control = DISABLE

SuggestedRemedy

(pma_reset = ON) + (link_control = DISABLE) (add brackets)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.6** *P* **113** *L* **44** # 196
Graber, Steffen Pepperl+Fuchs GmbH

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

PMA clock recovery outputs are also used .

SuggestedRemedy

Please remove this sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.7.1** *P* **113** *L* **52** # 197
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

Allows reset of all PMA functions.

SuggestedRemedy

Allows reset of all PMA functions, set by PCS Reset.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
If MDIO is present, this is set by PMA/PMD reset. Other phys do not call out the reset MDIO bit.

Cl **146** *SC* **146.4.7.1** *P* **113** *L* **54** # 198
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

Set by: PMA Reset.

SuggestedRemedy

Please remove this line

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.7.1** *P* **114** *L* **3** # 199
Graber, Steffen Pepperl+Fuchs GmbH

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

. or DISABLE.

SuggestedRemedy

. or DISABLE (remove dot at the end of the line)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.7.1** *P* **114** *L* **7** # 200
Graber, Steffen Pepperl+Fuchs GmbH

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

. or SLAVE.

SuggestedRemedy

. or SLAVE (remove dot at the end of the line)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.7.1** *P* **114** *L* **9** # 265
Xu, Dayin Rockwell Automation

Comment Type **T** *Comment Status* **D** *State diagram*

link_status is never used in the PHY control state diagram, shoud be deleted.

SuggestedRemedy

Delete the link_status variable definition (line 9-11)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.7.1** *P* **114** *L* **11** # 201
Graber, Steffen Pepperl+Fuchs GmbH

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

. or FAIL.

SuggestedRemedy

. or FAIL (remove dot at the end of the line)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.7.1** *P* **114** *L* **22** # 202
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

NOT_OK: Reliable operation of the receive function for the remote PHY is not detected.

SuggestedRemedy

NOT_OK: Operation of the receive function for the remote PHY is unreliable. (align this text with loc_rcvr_status)

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The remote phy and the local phy are different. You have absolute knowledge of the local PHY, the remote PHY needs to be detected.

Cl **146** *SC* **146.4.7.1** *P* **114** *L* **30** # 203
Graber, Steffen Pepperl+Fuchs GmbH

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

. according to the value assumed by this variable.

SuggestedRemedy

. according to the value of this variable.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.7.1** *P* **114** *L* **31** # 204
Graber, Steffen Pepperl+Fuchs GmbH

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

Text for SEND_N, SEND_I and SEND_Z seems to be unaligned.

SuggestedRemedy

Please align text of SEND_N, SEND_I and SEND_Z.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Align start of 2nd line of each entry.

Cl **146** *SC* **146.4.7.1** *P* **114** *L* **35** # 205
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

. is to take place.

SuggestedRemedy

. has to take place.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "This value is asserted when transmission of zero code-groups is to take place." to "This value is asserted when transmitting zero code-groups."

Cl **146** *SC* **146.4.7.1** *P* **114** *L* **37** # 206
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *State diagram*

Add variable tx_enable_mii to statemachine variable list.

SuggestedRemedy

tx_enable_mii: The tx_enable_mii variable is generated in the PCS data transmission enabling state diagram as specified in Figure 146-3. When set to FALSE transmission is disabled, when set to TRUE transmission is enabled. Values: TRUE or FALSE

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.4.7.2** *P* **114** *L* **42** # 207
Graber, Steffen Pepperl+Fuchs GmbH

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

The timer shall expire TBD after being started.

SuggestedRemedy

The timer shall expire 3000 ms ± 30 ms after being started. (Graber_3cg_18_1117.pdf, page 5, results of discussions in Orlando about this presentation)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "TBD (suggested are 3000 ms ± 30 ms, which is the expected maximum training time) after being started"
to "3000 ms ± 30 ms after being started.

Cl **146** *SC* **146.4.7.2** *P* **114** *L* **46** # 208
Graber, Steffen Pepperl+Fuchs GmbH

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

The timer shall expire TBD after being started.

SuggestedRemedy

The timer shall expire 200 ms ± 2 ms after being started. (Graber_3cg_18_1117.pdf, page 8, results of discussions in Orlando about this presentation)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "TBD (suggested are 200 ms ± 2 ms, this is the maximum time the PHY should try to recover a failed link, e.g. during a power disturbance, before a complete retraining is started) after being started."
to
"200 ms ± 2 ms after being started."

Cl **146** *SC* **146.4.7** *P* **114** *L* **47** # 264
Xu, Dayin Rockwell Automation

Comment Type **E** *Comment Status* **D** *State diagram*

The whole clause should be under the Clause 146.4.4 PHY Control Function

SuggestedRemedy

Move the contents of Clause146.4.7.1 and Clause 146.4.7.2 under Clause 146.4.4, delete "state diagram" sub title.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 185

Cl **146** *SC* **146.4.7.2** *P* **114** *L* **51** # 209
Graber, Steffen Pepperl+Fuchs GmbH

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

The timer shall expire TBD after being started.

SuggestedRemedy

The timer shall expire 20 µs ± 1 µs after being started. (Graber_3cg_18_1117.pdf, page 9, results of discussions in Orlando about this presentation)

Proposed Response *Response Status* **W**

Change "TBD (suggested are 20 ìs ± 1 ìs, this timer limits the toggle rate between "SEND IDLE" and "SEND IDLE OR DATA" states and allows stabilization of the status variables, the timer is chosen, in a way that a toggling to "SEND IDLE" and back does not destroy more than one 64 byte telegram) after being started."

to "20 µs ± 1 µs after being started. "

Cl **146** *SC* **146.5.1** *P* **115** *L* **16** # 210
Graber, Steffen Pepperl+Fuchs GmbH

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

150O

SuggestedRemedy

150 O

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
(insert nonbreaking space between 150 and Ohm symbol)

Cl **146** *SC* **146.5.2** *P* **115** *L* **39** # 211
Graber, Steffen Pepperl+Fuchs GmbH

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

1.xxxx.xx:xx

SuggestedRemedy

1.2298.15:13

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "The test modes can be enabled by setting bits 1.xxxx.xx:xx (10BASE-T1L PMA/PMD Test Control Register) of the PHY Management register set as described in 45.2.1.xxx."
to
"The test modes can be enabled by setting bits 1.2298.15:13 (10BASE-T1L Test Mode Control Register) of the PHY Management register set as described in 45.2.1.174e."

Cl **146** *SC* **146.5.2** *P* **115** *L* **40** # 212
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **X** *EZ*

45.2.1.xxx

SuggestedRemedy

45.2.1.174e

Proposed Response *Response Status* **W**

Accomplished by 211

Cl **146** *SC* **146.5.2** *P* **115** *L* **44** # 213
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *PSD Mask*

Transmitter output voltage, timing jitter, rise and fall times test mode

SuggestedRemedy

Transmitter output voltage and timing jitter test mode (the change of this text depends on the decision of the group about specifying the transmitter in time domain or by PSD mask, see presentation "10BASE-T1L PSD Mask").

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Task Force to hear presentation with proposal

Cl **146** *SC* **146.5.3** *P* **116** *L* **10** # 214
Graber, Steffen Pepperl+Fuchs GmbH

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

100 O ± 1 %

SuggestedRemedy

100 O ± 0.1 % (as stated in the text)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace 1 % with 0.1 % in Figure 146-17

Cl **146** *SC* **146.5.3** *P* **116** *L* **15** # 215
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *PMA Electrical*

. resistance > 10 kO

SuggestedRemedy

. resistance > 100 kO (100 kO cause 0.1 % measurement error, when compared to 100 O, thus it makes sense to increase the input impedance from 10 k to 100 k to reduce the measurement error caused by the differential probe)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace 10 k with 100 k in Figure 146-17

Cl **146** *SC* **146.5.4.1** *P* **116** *L* **41** # 216
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *PSD Mask*

See also 146.5.4.6 . test pattern.

SuggestedRemedy

Remove this sentence (the change of this text depends on the decision of the group about specifying the transmitter in time domain or by PSD mask, see presentation "10BASE-T1L PSD Mask").

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Task Force to hear presentation

Cl **146** *SC* **146.5.4.1** *P* **116** *L* **45** # 217
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *PMA Electrical*

Fixed transmitter driving levels . described in 45.2.1.xxx.

SuggestedRemedy

The transmitter driving level can be selected by setting bit 1.2294.12 (10BASE-T1L PMA control register) of the PHY Management register set as described in 45.2.1.174a.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "Fixed transmitter driving levels can be selected by setting bits 1.xxxx.xx:xx (10BASE-T1L PMA/PMD
Control Register) of the PHY Management register set as described in 45.2.1.xxx."
to
"The transmitter driving level can be selected by setting bit 1.2294.12 (10BASE-T1L PMA control register) of the PHY Management register set as described in 45.2.1.174a."

Cl **146** *SC* **146.5.4.1** *P* **117** *L* **4** # 218

Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *PMA Electrical*

Editor's Note about tutorial text and next paragraph (tutorial text itself)

SuggestedRemedy

Proposal is to remove the text and add a new insertion loss limit in chapter 146.7.1.1 for PHYs using a reduced driving level of IL(f) = 8.61 * SQRT(f) + 0.07 * f + 1.4/SQRT(f))+4*0.02*SQRT(f). A driving level of 1 V instead of 2.4 V is causing 7.6 dB less SNR, per 100 m of the 10BASE-T1L link segment the attenuation is 2.6 dB @ Nyquist, thus reducing the cable length by 300 m will lead to a reduction of the IL of 7.8 dB at Nyquist thus fitting to the lower driving level of the PHY transmitters. For the link segment being valid for the reduced driving levels only 4 inline connectors are assumed. All other parameters of the link segment characteristics may stay the same.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Delete Editor's note at line 4 and subsequent paragraph at lines 10-14. (assuming insertion loss proposal is in cabling part)

Cl **146** *SC* **146.5.4.2** *P* **117** *L* **17** # 219

Graber, Steffen Pepperl+Fuchs GmbH

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

Output Droop is TBD

SuggestedRemedy

Replace the TBDs by: The transmitter output droop shall be less than 20 % taking the inner 9 bit times of the 10 bit times pulse duration (Graber_3cg_18_1117.pdf, page 11, results of discussions in Orlando about this presentation). Depending, if the group decides to specify a PSD mask or to specify the transmitter in time domain, it is also possible, that the transmitter droop specification is replaced by a PSD mask definition, see presentation "10BASE-T1L PSD Mask"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "The transmitter output droop shall be less than TBD (suggested are 20 %) taking the inner TBD (suggested are 9 bit times) of the TBD (suggested are 10 bit times) pulse duration."

to "The transmitter output droop shall be less than 20 % taking the inner 9 bit times of the 10 bit times pulse duration"

Cl **146** *SC* **146.5.4.3** *P* **117** *L* **35** # 220

Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *PMA Electrical*

Editor's Note

SuggestedRemedy

Keep the ±10 ns Jitter tolerance. (Graber_3cg_18_1117.pdf, page 12, results of discussions in Orlando about this presentation)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Delete Editor's note.

Cl **146** *SC* **146.5.4.4** *P* **117** *L* **40** # 221

Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *PSD Mask*

Transmitter rise and fall times specification.

SuggestedRemedy

Depending on the groups decision, if a transmitter PSD mask definition of a time domain definition is chosen, see presentation "10BASE-T1L PSD Mask", this chapter will be replaced by a PSD mask definition. If the group decides to stay with the time domain definition, then the rise and fall times may be specified for a significantly wider range, suggested is range for the rise and fall times (10 to 90 %) of 13.333 ns to 53.333 ns (which is 1/8 to 1/2 symbol time for a 0 to 100 % transition, which also is reflected in the PSD mask simulations). Reason for this is that the rise and fall times have shown to be much less critical than initially thought. The current FPGA based evaluaton board, which initially used a rise and fall time of 53.333 ns in the meantime was changed for a rise and fall time of 26.666 ns, which produced a slightly better signal quality (less remaining error at the slicer input), without having a negative influence on the clock recovery.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Task Force to hear presentation and proposal on PSD mask.

Cl **146** *SC* **146.5.4.6** *P* **118** *L* **17** # 222
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *PSD Mask*

Normalized test patterns.

SuggestedRemedy

Depending on the groups decision, if a transmitter PSD mask definition of a time domain definition is chosen, see presentation "10BASE-T1L PSD Mask", this chapter will be replaced by a PSD mask definition. If the group decides to stay with the time domain transmitter definitions, then the tolerance for the rise and fall times may be widened, see also previous comment (page 117, 146.5.4.4, line 40).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Task force to hear presentation and proposal on PSD mask

---

Cl **146** *SC* **146.5.5** *P* **121** *L* **24** # 223
Graber, Steffen Pepperl+Fuchs GmbH

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

The PMA shall meet the Receive function specified in .

SuggestedRemedy

The PMA shall meet the requirements specified in .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.5.5** *P* **121** *L* **25** # 224
Graber, Steffen Pepperl+Fuchs GmbH

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

The link segment used in test configurations .

SuggestedRemedy

The link segment used in the test configurations .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.5.5.2** *P* **121** *L* **36** # 225
Graber, Steffen Pepperl+Fuchs GmbH

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

The receiver feature shall .

SuggestedRemedy

The receiver shall .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.5.5.3** *P* **121** *L* **46** # 226
Graber, Steffen Pepperl+Fuchs GmbH

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

Gaussian Noise TBDs.

SuggestedRemedy

Replace the TBDs by: . with Gaussian distribution, bandwidth of 10 MHz and magnitude of -106 dBm/Hz. (see presentation Graber_3cg_14_0917.pdf)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "with Gaussian distribution, bandwidth of TBD MHz and magnitude of -TBD dBm/Hz."
to "with Gaussian distribution, bandwidth of 10 MHz and magnitude of -106 dBm/Hz."

and make identical change in NOTE on page 122, line 17:
Change from "The noise signal fed into the receiver shall have a magnitude of TBD (suggested are
-106 dBm/Hz, needs further analysis) with a bandwidth of TBD (suggested are 10 MHz) taking the 100 ohm termination
within the PHY into account."

to "The noise signal fed into the receiver shall have a magnitude of -106 dBm/Hz with a bandwidth of 10 MHz taking the 100 ohm termination within the PHY into account."

Cl **146** *SC* **146.5.5.3** *P* **122** *L* **7** # 227

Graber, Steffen Pepperl+Fuchs GmbH

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

500 O resistor values

SuggestedRemedy

Currently in the draft there is only a noise test for Gaussian noise, as the test for the alien noise crosstalk test as defined in the document 10BASE-T1L Clause 164 Rev. F.pdf has not yet been agreed by the group. Depending, if this test is intended to be used or not, it would make sense to change the resistor values to 3 kO to be able to connect a 10BASE-T1L PHY in master mode to do the test and to adapt the driver levels to the intended alien noise level. (see also presentation Graber_3cg_14_0917.pdf)

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The change in resistor values appears to be suggested only if we use additionally a test with a master PHY connected to sum as a noise source; however, that test is not in the document, and it would need a new figure if it were.

Cl **146** *SC* **146.5.5.3** *P* **122** *L* **16** # 228

Graber, Steffen Pepperl+Fuchs GmbH

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

Gaussian Noise TBDs.

SuggestedRemedy

Replace the TBDs by: . shall have a magnitude of -106 dBm/Hz with a bandwidth of 10 MHz taking the ... (see presentation Graber_3cg_14_0917.pdf)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 226

Cl **146** *SC* **146.5.6** *P* **122** *L* **32** # 229

Graber, Steffen Pepperl+Fuchs GmbH

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

. shall be less than TBD for the normal driving levels and TBD for the reduced driving levels .

SuggestedRemedy

. shall be less than 2.76 Vpp for the normal driving levels and less than 1.15 V for the reduced driving levels . (Graber_3cg_18_1117.pdf, page 13, results of discussions in Orlando about this presentation)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "shall be less than TBD
(suggested are 2.76 V peak-to-peak) for the normal driving levels and TBD (suggested are 1.15 V peak-topeak)
for the reduced driving levels"
to
"shall be less than 2.76 Vpp for the normal driving levels and 1.15 Vpp for the reduced driving levels"

Cl **146** *SC* **146.5.6** *P* **122** *L* **35** # 230

Graber, Steffen Pepperl+Fuchs GmbH

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

. modes..

SuggestedRemedy

. modes. (remove second dot).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.5.7** *P* **122** *L* **44** # 231
Graber, Steffen Pepperl+Fuchs GmbH

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

. shall be placed in local loopback mode when the PMA local loopback bit in MDIO register 1.0.0, defined in 45.2.1.1, is set to a one .

SuggestedRemedy

. shall be placed in local loopback mode when the PMA local loopback bit in MDIO register 1.0.0, defined in 45.2.1.1, or the PMA loopback bit in MDIO register 1.2294.13, defined in 45.2.1.174a, is set to a one .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "shall be placed in local loopback mode when the PMA local loopback bit in MDIO register 1.0.0, defined in 45.2.1.1, is set to a one ."
to
"shall be placed in local loopback mode when the PMA local loopback bit in MDIO register 1.2294.13, defined in 45.2.1.174a, is set to a one."

Cl **146** *SC* **146.6.1** *P* **123** *L* **35** # 232
Graber, Steffen Pepperl+Fuchs GmbH

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

. is undefined..

SuggestedRemedy

. is undefined. (remove second dot at the end of the sentence).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.6.2** *P* **123** *L* **49** # 233
Graber, Steffen Pepperl+Fuchs GmbH

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

When MDIO is implemented, . as described in 45.2.1.xxx.

SuggestedRemedy

When MDIO is implemented, MASTER/SLAVE mode can be selected by setting bit 1.2100.14 (BASE-T1 PMA/PMD control register) of the PHY Management register set as described in 45.2.1.131.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.6.3** *P* **124** *L* **1** # 234
Graber, Steffen Pepperl+Fuchs GmbH

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

MDIO mapping table

SuggestedRemedy

Suggestion is to remove this table as the information is redundant to te information in Clause 45 and also to the information in other 146 chapters. If the decision will be that chapter 146.6.3 is not being removed, then the register definitions need to be updated to reflect all relevant registers at other positions of Clause 146 and the 10BASE-T1L section of Clause 45.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
These tables are helpful and common in 802.3. Need content to revise table contents.

Cl **146** *SC* **146.7** *P* **124** *L* **26** # 7
Shariff, Masood CommScope

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

Need to use terminology consistent with the PAR, CSD, and objectives. Also it is more than cable that forms a link segment, it is cabling including cable, connectors, and cords.

SuggestedRemedy

Change "a single twisted-pair copper cable" to " single balanced pair cabling"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Use terminolgy consistent with Amendment:
Physical Layer Specifications and
Management Parameters for 10 Mb/s
Operation over Single Balanced
Twisted-pair Cabling and Associated
Power Delivery.

Change: The single twisted-pair copper cable
To: The single balanced twisted-pair cabling

Editorial license to change instances of "single twisted-pair copper cable" to "single balanced twisted-pair cabling" when referring to link segment.

Cl **146** *SC* **146.7** *P* **124** *L* **27** # 8
Shariff, Masood CommScope

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

Need to use terminology consistent with the PAR, CSD, and objectives. Also it is more than cable that forms a link segment, it is cabling including cable, connectors, and cords.

SuggestedRemedy

change "single twisted-pair copper cable" to " single balanced pair cabling"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolved with comment#7

Cl **146** *SC* **146.7** *P* **124** *L* **28** # 9
Shariff, Masood CommScope

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

Need to use terminology consistent with the PAR, CSD, and objectives. Also it is more than cable that forms a link segment, it is cabling including cable, connectors, and cords.

SuggestedRemedy

Change " single twisted-pair copper cable" to " single balanced pair cabling"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolved with comment#7

Cl **146** *SC* **146.7** *P* **124** *L* **31** # 235
Graber, Steffen Pepperl+Fuchs GmbH

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

A link segment is specified based on process control applications that supports up to ten in-line connectors .

SuggestedRemedy

The link segment is specified based on process control applications and supports up to ten in-line connectors .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.7** *P* **124** *L* **32** # 10
Shariff, Masood CommScope

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

Need to use terminology consistent with the PAR, CSD, and objectives. Also it is more than cable that forms a link segment, it is cabling including cable, connectors, and cords.

SuggestedRemedy

Change " single twisted-pair copper cable" to " single balanced pair cabling"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Resolved with comment#7

Cl **146** *SC* **146.7.1** *P* **124** *L* **34** # 11
Shariff, Masood CommScope

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

Use consistent terminology to avoid confusion

SuggestedRemedy

Change "Link transmission parameters for 10BASE-T1L" to"Link segment transmission parameters for 10BASE-T1L"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.7.1.1** *P* **124** *L* **40** # 236

Graber, Steffen — Pepperl+Fuchs GmbH

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

Insertion loss definition for PHYs using reduced transmitter driving levels.

SuggestedRemedy

We need to discuss, if we want to add another IL definition for a link segment being used in conjunction with PHYs with reduced transmitter driving levels. Sugestion is to add a new insertion loss limit in chapter 146.7.1.1 for PHYs using a reduced driving level of IL(f) = 8.61 * SQRT(f) + 0.07 * f + 1.4/SQRT(f))+4*0.02*SQRT(f). A driving level of 1 V instead of 2.4 V is causing 7.6 dB less SNR, per 100 m of the 10BASE-T1L link segment the attenuation is 2.6 dB @ Nyquist, thus reducing the cable length by 300 m will lead to a reduction of the IL of 7.8 dB at Nyquist thus fitting to the lower driving level of the PHY transmitters. For the link segment being valid for the reduced driving levels only 4 inline connectors are assumed. All other parameters of the link segment characteristins may stay the same.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Rather than introduce a "new" link segment definition, indicate that the reduction in the Tx level (power backoff) will proportionally scale the supportable link segment IL in 146.7.1.1 Insertion loss to ~ 7*(1.23*SQRT(f)+0.01*(f)+0.2/SQRT(f))+7*(0.02*SQRT(f)) =7.95@4 MHz

Cl **146** *SC* **146.7.1.1** *P* **124** *L* **43** # 3

Maguire, Valerie — The Siemon Company

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

It may be difficult to make swept frequency measurements with existing balun set-ups below 300 kHz.

SuggestedRemedy

Insert new sentence, "Insertion loss values below 0.3 MHz are for information only."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The insertion loss determined using Equation (146-6) where f is the frequency in MHz (0.1</= f</=20 MHz) is a requirement i.e., "shall" be met.

Cl **146** *SC* **146.7.1.1** *P* **124** *L* **45** # 237

Graber, Steffen — Pepperl+Fuchs GmbH

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

IL formula.

SuggestedRemedy

Change to: Insertion loss(f) = 12.3*SQRT(f)+0.1*f+2/SQRT(f)+10*0.02*SQRT(f). Reason for the proposed change is, that we should specify the IL independent form the length of the link segment and that the multiplier with 10 for the cable (10 x 100 m) implicit specifies the length (as 10 x 100 m). For different wire diameters this could be different, so the idea is to multiply the 10 into the other coefficients of the IL definition.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.7.1.1** *P* **125** *L* **3** # 238

Graber, Steffen — Pepperl+Fuchs GmbH

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

Insertion loss diagram.

SuggestedRemedy

There seems to be some approximation in the calculated insertion loss for the low frequency range (e.g. at 100 kHz the Equation 146-6 gives 10.3 dB of IL, while Figure 146-22 shows approx. 5 dB of IL. As the cable behavior is more likely than shown in Figure 146-22, the question is, if we need to adopt the IL Equation 146-6 in the low frequency range to adopt the behavior of the real cable.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Error in the Figure 146-22 matlab plotting function. Figure to be regenerated with correct Equation 146-6 values.

Cl **146** *SC* **146.7.1.1** *P* **125** *L* **27** # 12

Shariff, Masood CommScope

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

Redundant text that says the same thing described in linwa 42 - 50 on page 124

SuggestedRemedy

Delete "The insertion loss for the link segment calculated using Equation (146-6) accounts for the insertion loss of a single twisted-pair copper cable and ten in-line connectors within each link segment."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Not redundant:
The first instance describes the application>> "A link segment is specified based on process control applications that supports up to ten in-line connectors
using a single twisted-pair copper cable for up to at least 1000 m."
The second instance explicity recognizes that the "The insertion loss for the link segment calculated using Equation (146-6) accounts for the insertion loss of a
single twisted-pair copper cable and ten in-line connectors within each link segment."

Cl **146** *SC* **146.7.1.2** *P* **125** *L* **30** # 303

DiMinico, Christopher MC Communication

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

Characteristic impedance is not directly measureable and represents the input impedance of transmission line with nonreflecting terminations.
The differential return loss of a link segment can be determined from measurements of the scattering parameter SDD11/SDD22. It sufficiently characterizes the difference between the incident power and the reflected power relative to a specified reference impedance (100 ohms).

SuggestedRemedy

Delete 146.7.1.2 Differential characteristic impedance
link segment parameter.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.7.1.2** *P* **125** *L* **30** # 239

Graber, Steffen Pepperl+Fuchs GmbH

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

Differential characteristic impedance definition.

SuggestedRemedy

Based on the actual RL specification the allowed differential impedance range for the cable is 80 to 120 ohms. Due to the existance of some cables with a wider characteristic impedance range, going down to even 70 ohms (e.g. Belden 3076F), we have to decide, if we want to support such cables and thereforinspecify 70 to 130 ohms. In this case we also need to discuss, what maximum change of characteristic impedance at the in-line connectors we want to allow between two link segment sections. My personal view is to limit this to 20 ohms difference in characteristic impedance at maximum, while otherwise, this would cause significant reflections, which not only burden the echo canceller but also significantly increase the IL of the link segment thus significantly reducing the maximum possible link segment length.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve with comment#303.

Cl **146** *SC* **146.7.1.2** *P* **125** *L* **32** # 13

Shariff, Masood CommScope

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

Replance editors note with characteristic impedance

SuggestedRemedy

The characteristic impedance is specified in equation 146 -7

Characteristic impedance is 100 ohms for 1<= f <=20 MHz (146-7)

100 + iX for 0.1<= f < 1 MHz (TBD)

where the characteristic impedance changes from a real number to a complex number below 1 MHz

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Resolve with comment#303.

Cl **146** *SC* **146.7.1.3** *P* **125** *L* **38** # 240

Graber, Steffen — Pepperl+Fuchs GmbH

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

Link segment return loss definition.

SuggestedRemedy

The return loss specification is based on a cable with a characteristic impedance of 80 to 120 ohms being connected to a 100 ohms reference impedance. As in the meantime some cables (e.g.Belden 3076F) are known, which have a characteristic impedance in the interesting frequency range going down to 70 ohms, we have to think about the maximum tolerable return loss (e.g. to take 15 dB instead of 19 dB into account for 1 MHz to 20 MHz). Nevertheless, even, if the return loss of such cables is quite bad in the frequency range above 1 MHz, in the lower frequency range the RL is quite good, as these cables are optimized for low frequency applications, which would mean, that for the lower frequency range we should keep the existing RL specification (or could even improve it).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The link segment is specified based on process control applications. The commentor reports that some cable types used in these applications exhibit return loss of 15 dB between 1 MHz to 20 MHz.

In 146.7.1.3 Return loss
Add editor's note >>Editor's Note (to be removed prior to draft 2.0):
The Task Force is assessing the need to change the return loss to support cables reported by commentor with return loss of 15 dB between 1 MHz to 20 MHz.

Cl **146** *SC* **146.7.1.3** *P* **125** *L* **41** # 14

Shariff, Masood — CommScope

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

The characteristic impedance below 1 MHz complex and its magnitude has been shown to be below 100 ohms. Also need to use consistent terminology.

SuggestedRemedy

Change" The reference impedance for the return loss specification is 100 ohms" to "The reference characteristic impedance for the return loss specification is specified in clause 146.7.1.2"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The return loss is specified to a reference impedance independent of the characteristic impedance.

Cl **146** *SC* **146.7.1.3** *P* **125** *L* **42** # 4

Maguire, Valerie — The Siemon Company

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

It may be difficult to make swept frequency measurements with existing balun set-ups below 300 kHz.

SuggestedRemedy

Insert new sentence, "Return loss values below 0.3 MHz are for information only."

Proposed Response *Response Status* **W**

PROPOSED REJECT. The Return loss determined using Equation (146-7) where f is the frequency in MHz (0.1</= f</=20 MHz) is a requirement i.e., "shall" be met.

Cl **146** *SC* **146.7.1.3** *P* **125** *L* **46** # 21

Schicketanz, Dieter — Reutlingen University

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

Return loss of 10-SPE-1000m link was presented by Fritsche.Schicketanz in 2016 and the high frequency limit was never reviewed. The low frequency was expanded in March 2017 by C.DiMinico. Measurements done showed that the frequency portion from 10 MHz to 20 MHz does not follow reality and also deviates from general cable and link limits. A measurement was presented in page 2 Schicketanz_122017_10SPE_01_adhoc.pdf at the webex Dec 20-2018

SuggestedRemedy

replace in equation 146-7 second line 20 by 10 and add a third line 24-5log(f) 10<f<_20

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The PHY supports operation on a link segment. The link segment is specified based on process control applications that supports up to ten in-line connectors
using a single twisted-pair copper cable for up to at least 1000 m.

The measurement presented on page 2 Schicketanz_122017_10SPE_01_adhoc.pdf at the webex Dec 20-2018 of "450m AWG18 cable 6m cord" cited as a "general cable" will meet the return loss requirements of Eq-146-7.

Other "shapes" than those presented in Schicketanz_122017_10SPE_01_adhoc.pdf are possible.

Cl **146** *SC* **146.7.1.4** *P* **126** *L* **26** # 305

DiMinico, Christopher MC Communication

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

The electromagnetic environments in 146.7.1 need to correspond to link segment paramters.

SuggestedRemedy

insert after 146.7.1.4 subclause 146.7.1.5 Coupling attenuation
The coupling attenuation requirements of the link segment depend on the electromagnetic noise environment. The requirements in Table xx-xx shall be met based on the local environment as described by the electromagnetic classifications given in Table 146-8, E1, E2, or E3. The coupling attenuation is tested as specified in IEC 62153-4-14.

When the PSANEXT (146.7.2.2) and PSAFEXT (146.7.2.3) for a link segment are met, the coupling attenuation limits are met by design.

Table xx-xx to be similar to Table 97-14 with F(MHz)=30 MHz, E1=40 dB, E2=50 dB, and E3=60 dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
insert after 146.7.1.4 subclause 146.7.1.5 Coupling attenuation
The coupling attenuation requirements of the link segment depend on the electromagnetic noise environment. The requirements in Table xx-xx shall be met based on the local environment as described by the electromagnetic classifications given in Table 146-8, E1, E2, or E3. The coupling attenuation is tested as specified in IEC 62153-4-14.

When the PSANEXT (146.7.2.2) and PSAFEXT (146.7.2.3) for a link segment are met, the coupling attenuation limits are met by design.

Table xx-xx to be similar to Table 97-14 with f(MHz)=TBD MHz, E1=TBD dB, E2=TBD dB, and E3=TBD dB.

Note that in Table146-8 the radiated RF min f(MHz) is 80 MHz and 10BASE-T1L link segment max f(MHz) is 20 MHz. The basis for coupling attenuation TBDs are the electromagnetic environment is not adequitely specified; propose TBDs for Radiated RF - AM E1, E2, and E3 as placeholders.

Cl **146** *SC* **146.7.1.4** *P* **126** *L* **27** # 241

Graber, Steffen Pepperl+Fuchs GmbH

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

Maximum link delay (TBD)

SuggestedRemedy

Suggestion is to specify a maximum link delay of 7500 ns for all frequencies between 1 MHz to 20 MHz (align the link segment delay time with the delay time defined in Clause 98, assuming 5 ns per meter this would allow 1500 m, assuming 5.5 ns per meter this would allow approx. 1360 m, which allows for some additional cable length, e.g. using larger wire diameters). If the group decides to use another link delay time also Clause 98 needs to be adopted accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve with comment#304

Cl **146** *SC* **146.7.1.4** *P* **126** *L* **28** # 22

Schicketanz, Dieter Reutlingen University

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

At the moment no link delay specified

SuggestedRemedy

suggest to replace the TBD by 5500 ns at 3.75 MHz

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve with comment#304

Cl **146** *SC* **146.7.1.4** *P* **126** *L* **29** # 15

Shariff, Masood CommScope

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

Missing delay specification

SuggestedRemedy

The propagation delay of a 10BASE-T1L link segment shall not exceed 5500 ns at 3.75 MHz.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve with comment#304

Cl **146** *SC* **146.7.1.5** *P* **127** *L* **11** # 16

Shariff, Masood CommScope

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

Missing TCL parameter related to the MICE table 146-8. The values proposed are from ISO 11801-1, 2017

SuggestedRemedy

TCL for unshielded single balanced pair cabling installed in E1, E2, and E3 MICE environments shall meet or exceed the values in table XX

Table XX

Frequncy	E1	E2	E3
1 <= f < =20	53 - 15lg(f)	63 - 15lg(f)	73 - 15lg(f)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolved with comment#24.

Cl **146** *SC* **146.7.1.5** *P* **127** *L* **11** # 24

Schicketanz, Dieter Reutlingen University

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

TCL and ELTCTL missing

SuggestedRemedy

Add a subclause below line 11 page 127: 146.7.1.5.2 Mode conversion loss of unshielded link segments. The mode conversion requirements of unshielded link segments depend on the electromagnetic noise environment. The requirements in Table 146-8-B shall be met based on the local environment as described by the electromagnetic classifications given in Table 145-8, E1, E2, or E3. Add a table 146-8-B with values as presented in Schicketanz_122017_10SPE_01_adhoc.pdf page8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. insert after 146.7.1.4 subclause Differential to common mode conversion. The mode conversion requirements of unshielded link segments depend on the electromagnetic noise environment. The requirements of Table xx-xx 146-8-B shall be met based on the local environment as described by the electromagnetic classifications given in Table 145-8, E1, E2, or E3. Add a table Table xx-xx with TBDs instead of proposed values as presented in Schicketanz_122017_10SPE_01_adhoc.pdf.

Note that in Table146-8 the radiated RF min f(MHz) is 80 MHz and 10BASE-T1L link segment max f(MHz) is 20 MHz. The basis for mode conversion TBDs are the electromagnetic environment is not adequitely specified.

Cl **146** *SC* **146.7.1.5** *P* **127** *L* **11** # 18

Shariff, Masood CommScope

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

Missing coupling attenuation parameter related to the MICE table 146-8. The values proposed are from ISO 11801-1, 2017

SuggestedRemedy

Coupling attenuation for shielded single balaanced pair cabling installed in E1, E2, and E3 MICE environments shall meet or exceed the values in table ZZ

Table ZZ

Frequncy	E1	E2	E3
30 <= f <= 100	40	50	60

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Resolve with comment#305

Cl **146** *SC* **146.7.1.5** *P* **127** *L* **11** # 23

Schicketanz, Dieter Reutlingen University

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

As the editor mentions coupling attenuation missing

SuggestedRemedy

Add a subclause at line 11 page 127: 146.7.1.5.1 coupling attenuation of shielded link segments.
The coupling attenuation requirements of shielded link segments depend on the electromagnetic noise environment. The requirements in Table 146-8-A shall be met based on the local environment as described by the electromagnetic classifications given in Table 145-8, E1, E2, or E3. The coupling attenuation is tested as specified in IEC 62153-4-14.
Add a table 146-8-A with values 40,50,60 dBat 30 MHz like presented in Schicketanz_122017_10SPE_01_adhoc.pdf page7

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Resolved with comment#305.

Cl **146** *SC* **146.7.1.5** *P* **127** *L* **11** # 17

Shariff, Masood CommScope

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

Missing ELTCTL parameter related to the MICE table 146-8. The values proposed are from ISO 11801-1, 2017

SuggestedRemedy

ELTCTL for unshielded single balanced pair cabling insgtalled in E1, E2, and E3 MICE environments shall meet or exceed the values in table YY

Table YY

Frequncy	E1	E2	E3
1 <=f <= 20	30 - 20lg(f)	40 - 20lg (f)	50 - 20lg (f)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolved with comment#24.

Cl **146** *SC* **146.7.2.2** *P* **127** *L* **41** # 5

Maguire, Valerie The Siemon Company

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

It may be difficult to make swept frequency measurements with existing balun set-ups below 300 kHz.

SuggestedRemedy

Insert new sentence, "PSANEXT loss values below 0.3 MHz are for information only."

Proposed Response *Response Status* **W**

PROPOSED REJECT. The PSANEXT loss determined using Equation (146-9) where f is the frequency in MHz (0.1</= f</=20 MHz) is a requirement i.e., "shall" be met.

Cl **146** *SC* **146.7.2.2** *P* **127** *L* **44** # 19

Shariff, Masood CommScope

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

Use the alien near end crosstalk specification from ISO 11801-1 for Category 6A, which is the minimum Category with alien cross talk specifications

SuggestedRemedy

Change to PSANEXT >= 60 - 10 log (f/100)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Link segment is specified based on process control applications.

PSANEXT limits derived from measurements of link segments with process/industrial in-line connectors (See diminico_01_0317.pdf slide 28).

Note that the Category 6A PSANEXT meets the 146.7.2.2 PSANEXT.

Cl **146** *SC* **146.7.2.3** *P* **128** *L* **16** # 6

Maguire, Valerie The Siemon Company

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

It may be difficult to make swept frequency measurements with existing balun set-ups below 300 kHz.

SuggestedRemedy

Insert new sentence, "PSAFEXT loss values below 0.3 MHz are for information only."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The PAFEXT loss determined using Equation (146-11) where f is the frequency in MHz (0.1</= f</=20 MHz) is a requirement i.e., "shall" be met.

Cl **146** *SC* **146.7.2.3** *P* **128** *L* **18** # 20

Shariff, Masood — CommScope

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

Use the alien far end crosstalk specification from ISO 11801-1 for Category 6A, which is the minimum Category with alien cross talk specifications

SuggestedRemedy

Use PSAFEXT >= 37 - 20 log (f/100)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Link segment is specified based on process control applications.

PSAFEXT limits derived from measurements of link segments with process/industrial in-line connectors (See diminico_01_0317.pdf slide 28).

Note that the PSAFEXT in the suggested remedy meets the 146.7.2.3 PSAFEXT.

Cl **146** *SC* **146.8** *P* **128** *L* **25** # 371

Beruto, Piergiorgio — Canova Tech Srl

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

Text for clause 146.8 (MDI specification) is missing.

SuggestedRemedy

Add text proposed in document "Clause 146 Proposed Additional Text.pdf" for the mentioned clause(s).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Incorporate text for review, without acceptance, on pages 3 and 4 of "Clause 146 Proposed Additional Text.pdf" for 146.8 (and subclauses) with the following Editor's note: "Editor's Note (to be removed prior to Working Group Ballot): The following text was added to D1.1 for Task Force Review, WITHOUT ACCEPTANCE, because it is substantial new matter. Reviewers are encouraged to comment and propose acceptance or modification in the Task Force review process."

Cl **146** *SC* **146.9.2** *P* **129** *L* **1** # 372

Beruto, Piergiorgio — Canova Tech Srl

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

Text for clause 146.9.2 (Network safety) is missing.

SuggestedRemedy

Add text proposed in document "Clause 146 Proposed Additional Text.pdf" for the mentioned clause(s).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Incorporate text for review, without acceptance, on pages 4 and 2 of "Clause 146 Proposed Additional Text.pdf" for 146.1.2.1, 146.1.2.2, 146.1.2.3, 146.1.3 (and subclauses), and 146.2 (and subclauses) with the following Editor's note: "Editor's Note (to be removed prior to Working Group Ballot): The following text was added to D1.1 for Task Force Review, WITHOUT ACCEPTANCE, because it is substantial new matter. Reviewers are encouraged to comment and propose acceptance or modification in the Task Force review process."

Cl **146** *SC* **146.10** *P* **129** *L* **15** # 242

Graber, Steffen — Pepperl+Fuchs GmbH

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

Missing max. transmit delay time.

SuggestedRemedy

The delay for the transmit path, from the MII input to the MDI, shall be less than 3.2 µs (32 bit times). Current FPGA based evaluation board takes approx. 20 bit times, so 32 bit times seems to provide enough headroom for different implementations. Assuming the suggested transmit and receive delays they add up to approx. 10 µs, for a ring consisting of 100 PHYs, the max. delay within a ring caused by the PHYs adds up to approx. 1 ms round trip time.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change lines 15-17 from:
"The delay for the transmit path, from the MII input to the MDI, shall be less than TBD (suggested are 3.2 µs (32 bit times), current implementation on evaluation board takes about 20 bit times maximum)."

to: "The delay for the transmit path, from the MII input to the MDI, shall be less than 3.2 µs (32 bit times)."

Cl **146** *SC* **146.1** *P* **129** *L* **17** # 243
Graber, Steffen Pepperl+Fuchs GmbH

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

Missing max. receive delay time.

SuggestedRemedy

The delay for the receive path, from the MDI to the MII output, shall be less than 6.4 µs (64 bit times). Current FPGA based evaluation board takes approx. 50 bit times, so 64 bit times seem to provide enough headroom for different implementations. Assuming the suggested transmit and receive delays they add up to approx. 10 µs, for a ring consisting of 100 PHYs, the max. delay within a ring caused by the PHYs adds up to approx. 1 ms round trip time.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change lines 18-19 from:
"The delay for the receive path, from the MDI to the MII output, shall be less than TBD (suggested are 6.4 ìs (64 bit times)."
to:
"The delay for the receive path, from the MDI to the MII output, shall be less than 6.4 µs (64 bit times)."

Cl **146** *SC* **146.11.1** *P* **130** *L* **8** # 124
Graber, Steffen Pepperl+Fuchs GmbH

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

10BASE-T1

SuggestedRemedy

10BASE-T1L

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.11.2.2** *P* **131** *L* **6** # 125
Graber, Steffen Pepperl+Fuchs GmbH

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

10BASE-T1

SuggestedRemedy

10BASE-T1L

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.11.3** *P* **131** *L* **38** # 126
Graber, Steffen Pepperl+Fuchs GmbH

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

TBD

SuggestedRemedy

146.5.4.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
(Change "TBD" to 146.5.4.1 (cross ref))

Cl **146** *SC* **146.11.3** *P* **131** *L* **40** # 127
Graber, Steffen Pepperl+Fuchs GmbH

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

98

SuggestedRemedy

78

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
(Change ref to Clause 78)

Cl **146** *SC* **146.11.4.1.1** *P* **132** *L* **14** # 128
Graber, Steffen Pepperl+Fuchs GmbH

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

See Table 146-1

SuggestedRemedy

See Equation 146-1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
(change cross ref to Equation 146-1 from Table 146-1)

Cl **146** *SC* **146.11.4.1.1** *P* **132** *L* **16** # 129
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *EZ*
See Table 146-2

SuggestedRemedy
See Equation 146-2

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.
(Change cross ref from Table to Equation)

Cl **146** *SC* **146.11.4.1.1** *P* **132** *L* **19** # 130
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *EZ*
Nevr initialized .

SuggestedRemedy
Never initialized .

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

Cl **146** *SC* **146.11.4.1.2** *P* **133** *L* **25** # 131
Graber, Steffen Pepperl+Fuchs GmbH

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

SuggestedRemedy
FALSE

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

Cl **146** *SC* **146.11.4.1.2** *P* **133** *L* **31** # 132
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *EZ*
See Figure 146-4

SuggestedRemedy
See Equation 146-4

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.
Change Cross ref from Figure to Equation

Cl **146** *SC* **146.11.4.1.2** *P* **133** *L* **33** # 133
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *EZ*
See Figure 146-5

SuggestedRemedy
See Equation 146-5

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.
(change cross ref from Figure to Equation)

Cl **146** *SC* **146.11.4.2.1** *P* **134** *L* **35** # 134
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *EZ*
Set pma_rest = ON .

SuggestedRemedy
Set pma_reset = ON .

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

Cl **146** *SC* **146.11.4.2.1** *P* **134** *L* **38** # 135
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *EZ*
146.4.2

SuggestedRemedy
Change text formatting/size to standard

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

Cl **146** *SC* **146.11.4.2.1** *P* **134** *L* **44** # 136
Graber, Steffen Pepperl+Fuchs GmbH

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

TBD

SuggestedRemedy

3000 ms (Graber_3cg_18_1117.pdf, page 5, results of discussions in Orlando about this presentation)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
(Align with change to TBD in 146.4.4, comment 183)

Cl **146** *SC* **146.11.4.2.2** *P* **135** *L* **10** # 244
Graber, Steffen Pepperl+Fuchs GmbH

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

Enable by setting bits 1.xxxx.xx:xx as described in 45.2.1.xxx when MDIO implemented .

SuggestedRemedy

Enable by setting bits 1.2298.15:13 as described in 45.2.1.174e when MDIO implemented .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.11.4.2.2** *P* **135** *L* **31** # 137
Graber, Steffen Pepperl+Fuchs GmbH

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

100 O ± 1 %

SuggestedRemedy

100 O ± 0.1 % (please adopt also formatting to standard text)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Align with change to 146.5.3 (comment 214)

Cl **146** *SC* **146.11.4.2.2** *P* **135** *L* **39** # 138
Graber, Steffen Pepperl+Fuchs GmbH

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

100 O ± 1 %

SuggestedRemedy

100 O ± 0.1 % (please adopt also formatting to standard text)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.11.4.2.2** *P* **135** *L* **41** # 139
Graber, Steffen Pepperl+Fuchs GmbH

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

., connected to the trans-mitter output.

SuggestedRemedy

., connected to the transmitter output.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.11.4.2.2** *P* **136** *L* **3** # 245
Graber, Steffen Pepperl+Fuchs GmbH

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

Default setting chosen by . otherwise.

SuggestedRemedy

Default setting chosen by Auto-Negotiation, if Auto-Negotiation is disabled or not available, by setting bit 1.2294.12 as described in 45.2.1.174a when MDIO implemented, similar functionality provided otherwise

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "1.xxxx.xx.xx as described
in 45.2.1.xxx" to "1.2294.12 as described in 45.2.1.174a"

Cl **146** *SC* **146.11.4.2.2** *P* **136** *L* **9** # 246
Graber, Steffen Pepperl+Fuchs GmbH

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

Less than TBD

SuggestedRemedy

Less than 20 % when measured on test mode 2 (Graber_3cg_18_1117.pdf, page 11, results of discussions in Orlando about this presentation)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Align with 146.5.4.2, comment 219

Cl **146** *SC* **146.11.4.2.2** *P* **136** *L* **14** # 247
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **D** *PSD Mask*

TBD when measured on test mode 1

SuggestedRemedy

Remove and replace by PSD mask limits (the change of this text depends on the decision of the group about specifying the transmitter in time domain or by PSD mask, see presentation "10BASE-T1L PSD Mask").

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Align with resolution of time domain template vs. PSD mask

Cl **146** *SC* **146.11.4.2.2** *P* **136** *L* **17** # 140
Graber, Steffen Pepperl+Fuchs GmbH

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

7.5 MBd ± 50 ppm

SuggestedRemedy

Change formatting to standard text formatting.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.11.4.2.2** *P* **136** *L* **24** # 141
Graber, Steffen Pepperl+Fuchs GmbH

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

7.5 MBd ± 50 ppm

SuggestedRemedy

Change formatting to standard text formatting.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.11.4.2.2** *P* **136** *L* **25** # 248
Graber, Steffen Pepperl+Fuchs GmbH

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

Magnitude of TBD with a bandwidth of TBD

SuggestedRemedy

Magnitude of -106 dBm/Hz with a bandwidth of 10 MHz (Graber_3cg_18_1117.pdf, page 13, -106 dBm/Hz provide 8 dB margin to the FPGA based evaluation board, other noise measurement setups need to be discussed within the group)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
(align with comment 226)

Cl **146** *SC* **146.11.4.2.2** *P* **136** *L* **28** # 249
Graber, Steffen Pepperl+Fuchs GmbH

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

Less than TBD

SuggestedRemedy

Less than 2.76 Vpp for normal transmit level and 1.15 Vpp for reduced transmit level (Graber_3cg_18_1117.pdf, page 13, results of discussions in Orlando about this presentation)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Align with comment 229

Cl **146** *SC* **146.11.4.2.2** *P* **136** *L* **30** # 250
Graber, Steffen Pepperl+Fuchs GmbH

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

. in MDIO register 1.0.0, defined in 45.2.1.1, is set to a one.

SuggestedRemedy

. in MDIO register 1.0.0, defined in 45.2.1.1, or in MDIO register 1.2294.13, defined in 45.2.1.174a is set to a one.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.11.4.3** *P* **137** *L* **6** # 142
Graber, Steffen Pepperl+Fuchs GmbH

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

. by management of hardware configuration .

SuggestedRemedy

. by management or hardware configuration .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "of" to "or"

Cl **146** *SC* **146.11.4.3** *P* **137** *L* **15** # 251
Graber, Steffen Pepperl+Fuchs GmbH

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

Default setting chosen by . otherwise.

SuggestedRemedy

Default setting chosen by Auto-Negotiation, if Auto-Negotiation is disabled or not available, by setting bit 1.2100.14 as described in 45.2.1.131 when MDIO implemented, similar functionality provided otherwise

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146.11.4.4** *P* **137** *L* **34** # 252
Graber, Steffen Pepperl+Fuchs GmbH

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

Not exceed TBD for all frequencies between 1 MHz to 20 MHz.

SuggestedRemedy

Not exceed 7500 ns for all frequencies between 1 MHz to 20 MHz (align the link segment delay time with the delay time defined in Clause 98, assuming 5 ns per meter this would allow 1500 m, assuming 5.5 ns per meter this would allow approx. 1360 m, which allows for some additional cable length, e.g. using larger wire diameters). If the group decides to use another link delay time also Clause 98 needs to be adopted accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Align with change to 146.7.1.4

Cl **146** *SC* **146.11.4.6** *P* **138** *L* **25** # 253
Graber, Steffen Pepperl+Fuchs GmbH

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

Less than TBD

SuggestedRemedy

Less than 3.2 µs (32 bit times)

Proposed Response *Response Status* **W**

Change "Less than TBD" to "Less than 3.2 µs (32 bit times)"

Cl **146** *SC* **146.11.4.6** *P* **138** *L* **26** # 254
Graber, Steffen Pepperl+Fuchs GmbH

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

Less than TBD

SuggestedRemedy

Less than 6.4 µs (64 bit times)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "Less than TBD" to "Less than 6.4 µs (64 bit times)"

Cl **147** *SC* **147.1** *P* **139** *L* **9** # 144
Graber, Steffen Pepperl+Fuchs GmbH

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

. 10BASE-T1S Physical Layer (PHY).

SuggestedRemedy

.. 10BASE-T1S Physical Layer Device (PHY).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
While the original comment would have made only "Layer (PHY)" changed to "Layer Device (PHY)", editors deemed additional adjustments to be necessary, thus current proposal is to go beyond the original comment and to change "if such error is detected, a ESDERR symbol" to "if this error is detected, then an ESDERR symbol"

Cl **147** *SC* **147.1** *P* **139** *L* **13** # 145
Graber, Steffen Pepperl+Fuchs GmbH

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

10BASET1S

SuggestedRemedy

10BASE-T1S

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "10BASET1S" to "10BASE-T1S"

Cl **147** *SC* **147.1** *P* **139** *L* **19** # 146
Graber, Steffen Pepperl+Fuchs GmbH

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

A 10BASE-T1S that supports .

SuggestedRemedy

A 10BASE-T1S PHY that supports .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "10BASE-T1S that" to "10BASE-T1S PHY that"

Cl **147** *SC* **147.1.2** *P* **139** *L* **44** # 147
Graber, Steffen Pepperl+Fuchs GmbH

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

. with up to 10cm stubs, .

SuggestedRemedy

. with up to 10 cm stubs, .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "10cm" to "10 cm"
Note: The newly added space (to between "10" and "cm") is preferred to be a single <non-breaking white-space> character, to keep the clause consistent

Cl **147** *SC* **147.1.2** *P* **139** *L* **47** # 266

Xu, Dayin — Rockwell Automation

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

The third paragraph is not consistent with the project objectives: point-point and mixing link segments should be described separately

SuggestedRemedy

Refer to PAGE 3 of the accompanied presentation xu_3cg_01_0118.pdf.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change this:<
The 10BASE-T1S PHY can operate using full-duplex or half-duplex point-to-point communications over a single twisted-pair copper cable with an effective rate of 10 Mb/s in each direction simultaneously.
Additionally, the 10BASE-T1S PHY can operate using half-duplex multidrop communications over a single twisted-pair copper cable interconnecting up to at least eight in-line PHYs with up to 10cm stubs, achieving an overall effective rate of 10 Mb/s, shared among the nodes.
In any operating mode the 10BASE-T1S PHY supports operation on a link segment or mixing segment supporting up to four in-line connectors using a single twisted-pair copper cable for up to at least 15 meters to support low cost applications requiring short physical reach, such as industrial, automotive and automation controls.
> to this <
The 10BASE-T1S PHY can operate using full-duplex or half-duplex point-to-point communications on a point-to-point link segment using a single balanced pair copper cable and supporting up to four in-line connectors and up to at least 15 meters with an effective rate of 10 Mb/s in each direction simultaneously.
Additionally, the 10BASE-T1S PHY can operate using half-duplex multidrop communications on a multidrop/mixing segment using a single balanced pair copper cable interconnecting up to at least TBD in-line PHYs with up to 10cm stubs and supporting up to at least TBD meters, achieving an overall effective rate of 10 Mb/s, shared among the nodes.
In any operating mode the 10BASE-T1S PHY supports low cost applications requiring short physical reach, such as industrial, automotive and automation controls.
>
Note: the 2 "TBD" entries must be highlighted

Cl **147** *SC* **147.2** *P* **140** *L* **40** # 148

Graber, Steffen — Pepperl+Fuchs GmbH

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

. explained in 147.2.2.4, .

SuggestedRemedy

. explained in 147.2.3, .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "147.2.2.4" to "147.2.3"
Note: this is not regular text replacement, but fix of a link (where it points to)

Cl **147** *SC* **147.2.1** *P* **141** *L* **1** # 149

Graber, Steffen — Pepperl+Fuchs GmbH

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

. reset condition hold true.

SuggestedRemedy

. reset condition holds true.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "hold" to "holds"

Cl **147** *SC* **147.2** *P* **141** *L* **17** # 267

Xu, Dayin — Rockwell Automation

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

Figure 147-2: plca_en from the "MANAGEMENT" block to "PCS TRANSMIT" block is not shown explictly, should we add this?

SuggestedRemedy

Add plca_en signal flow from the "MANAGEMENT" block to the "PCS_TRANSMIT" block?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The signal plca_en shall be added to the figure as suggested. Furthermore it shall also be described in 147.2.2.2 as follows: "The plca_en signal described in 148.4.5.2. When the optional PLCA RS is not implemented, plca_en shall be set to OFF"

Cl **147** *SC* **147.2.2.1** *P* **142** *L* **9** # 150
Graber, Steffen Pepperl+Fuchs GmbH

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

The PMA encode tx_sym, .

SuggestedRemedy

The PMA encodes tx_sym, .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "encode" to "encodes"

Cl **147** *SC* **147.2.2.1** *P* **142** *L* **12** # 310
iyer, venkat microchip

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

example of use of 'symbol' instead of 'symbol group'

SuggestedRemedy

multi-bit fields are referred to as symbol groups in other places e.g. 147.3.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
1. Change "SYNC symbols to the PMA" to "SYNC symbol groups to the PMA"
2. Change "SSD symbol" to "SSD symbol group"
Notes:
- Check other pages for similar issues too
- Mention this to Piergiorgio to make sure he could harmonize clause 146 as well

---

Cl **147** *SC* **147.2.2.1** *P* **142** *L* **21** # 279
Zerna, Conrad Fraunhofer

Comment Type **ER** *Comment Status* **D** *Technical*

"PCS Transmit" should read

SuggestedRemedy

"PCS Receive"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This symbol indeed is generated by PCS Transmit and not Receive (for the PMA Transmit to converto into "high impedance mode" or "zero voltage level")
If the sentence is not clear enough, it could still be rephrased (to make sure the above-mentioed property gets better emphasis) to avoid confusion on reader's side

---

Cl **147** *SC* **147.2.2.2** *P* **142** *L* **24** # 268
Xu, Dayin Rockwell Automation

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

plca_en and SILIENCE referred in Figure 147-3 are not defined in 147.2.2.2 Variables

SuggestedRemedy

Add definitions for plca_en, SILIENCE and pcs_txdn.
plca_en Generated by management interface, enables PLCA functions. Values: ON or OFF
SILENCE The 5B symbol defined as 'I' in 4B/5B encoding

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add the following to under 147.2.2.2:<
SILENCE
The 5B symbol defined as 'I' in 4B/5B encoding
>
The signal plca_en should alredy be described as an outcome of the resolution of comment #267

Cl **147** *SC* **147.2.2.2** *P* **142** *L* **48** # 151
Graber, Steffen Pepperl+Fuchs GmbH

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

(see also Table 147-1:

SuggestedRemedy

(see also Table 147-1):

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "147-1:" to "147-1):", in other words add a closing parenthesis between "1" and ":")

Cl **147** *SC* **147.2.2.2** *P* **143** *L* **5** # 152
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *Technical*

This variable is set in the PCS data transmission as defined in .

SuggestedRemedy

This variable is set in the PCS Transmit state diagram as defined in .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
1. 143/5 change "This variable is set in the PCS data transmission as defined in" to "This variable is set in the PCS Transmit state, as described in"
2. 147/19 change "This variable is set in the PCS data receive as defined in" to "This variable is set in the PCS Receive state, as described in"

Cl **147** *SC* **147.2.2.2** *P* **143** *L* **10** # 153
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *Technical*

This variable is set in the PCS data transmission as defined in .

SuggestedRemedy

This variable is set in the PCS Transmit state diagram as defined in .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "This variable is set in the PCS data transmission as defined in" to "This variable is set in the PCS Transmit state, as described in"

Cl **147** *SC* **147.2.2.2** *P* **143** *L* **13** # 154
Graber, Steffen Pepperl+Fuchs GmbH

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

if such error is detected, .

SuggestedRemedy

if such an error is detected, .

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Current text is fine as well (in fact both, the orignal and the proposed, text are)

Cl **147** *SC* **147.2.2.3** *P* **144** *L* **15** # 155
Graber, Steffen Pepperl+Fuchs GmbH

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

N code of 4B/5B encoding is being used for the BEACON.

SuggestedRemedy

4B/5B normally defines no N code, but an S code with "11001" bit sequence, is there a reason, why an N code is being defined and the standard S code is not being used?

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Discussed and clarified with Mr. Graber and: no changes are needed

Cl **147** *SC* **147.2.2** *P* **145** *L* **37** # 269
Xu, Dayin Rockwell Automation

Comment Type **E** *Comment Status* **D** *Technical*

Figure 147-3: "err <= err | pcs_txer" is not consistent with others, '|' should be '+'.

SuggestedRemedy

Change "err <= err | pcs_txer" to "err <= err + pcs_txer"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "err <= err | pcs_txer" to "err <= err + pcs_txer"
Note: the symbol "<=" does not mean "less than or equal" but value assignment

Cl **147** *SC* **147.2.2.3** *P* **145** *L* **37** # 308
iyer, venkat microchip

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

err<=err | pcs_txer

SuggestedRemedy

replace | with +

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "err <= err | pcs_txer" to "err <= err + pcs_txer"
Note: the symbol "<=" does not mean "less than or equal" but value assignment

Cl **147** *SC* **147.2.2** *P* **146** *L* **11** # 270
Xu, Dayin Rockwell Automation

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

Figure 147-4: "err <= err + pcs_txen" is wrong. "pcs_txen' should be "pcs_txer".

SuggestedRemedy

change "err <= err + pcs_txen" to "err <= err + pcs_txer"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "err <= err + pcs_txen" to "err <= err + pcs_txer"
Note: the symbol "<=" does not mean "less than or equal" but value assignment

Cl **147** *SC* **147.2.3** *P* **147** *L* **11** # 280

Zerna, Conrad — Fraunhofer

Comment Type **TR** *Comment Status* **D** *Technical*

If frame end is detected through "SILENCE", frame must always be invalidated. One bit error causes one frame error .

SuggestedRemedy

Discussion in the task force?!
Proposed Text: ". is encountered. To increase protection against frame end loss, the ESD symbol is doubled. The state machine also detects (loss of) end of frame through SILENCE on the ."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "The DATA state, in which 5B symbols are decoded into MII data, is left when ESD followed by either ESDOK or ESDERR symbol is encountered or when the PMA detects SILENCE on the media (e.g. the transmitter prematurely stops data transmission)." to "The DATA state, in which 5B symbols are decoded into MII data, is left when ESD followed by either ESDOK or ESDERR symbol is encountered. To increase protection against loss of frame end, the ESD symbol is doubled. The state machine also detects (the loss of) end of frame through SILENCE on the media (e.g. when the transmitter prematurely stops data transmission)."
When DATA state is left through detection of SILENCE, the RX FSM switches to BAD_ESD state, which asserts RXER, so the frame is already invalidated

Cl **147** *SC* **147.2.3.2** *P* **147** *L* **41** # 281

Zerna, Conrad — Fraunhofer

Comment Type **TR** *Comment Status* **D** *Technical*

What is the behaviour of decoder, if the 5B-word is not valid? Solution should not preclude an error-correcting code later in the signal processing chain .

SuggestedRemedy

"Truncate last bit" is simple, but probably sub-optimal solution.
Discussion in the task force?!
Proposed text: "If the receive 5B word is none of the symbols 0 through F, the first four bits are passed on as decoder output instead."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Any value can work here as the FCS would be invalidated anyway and the packet would get discarded in the MAC
Optionally (if this reject is partially rejected) RX_ER might be asserted as well, which could be a topic for the group to discuss (TBD)
As for error correction codes, these must be specified and transmitted as appropriate, I don't think trucating the 5B symbol would yield any benefit here

Cl **147** *SC* **147.2.3** *P* **149** *L* **22** # 364

Beruto, Piergiorgio — Canova Tech Srl

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

refer to presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slides #2 and #3

NOTE: presentation use the wording prior to PLCA editorial fitting changes

SuggestedRemedy

As specified in presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slide #2

In figure 147-6, in the state transition between the DATA and BAD_ESD state, replace description with the following text: "RSCD * ((RXn-2 = ESD * RXn-1 != ESDOK) + RXn-3 = SILENCE)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In figure 147-6, in the state transition between the DATA and BAD_ESD state, replace description with the following text: "RSCD * ((RXn-2 = ESD * RXn-1 != ESDOK) + RXn-3 = SILENCE)"

Cl **147** *SC* **Figure 147-6** *P* **149** *L* **24** # 282

Zerna, Conrad — Fraunhofer

Comment Type **TR** *Comment Status* **D** *Technical*

In case, the ESD symbol, which is just one bit different from symbol "1" is missed, the state machine hangs or tries to decode silence/disturbances on the line.

SuggestedRemedy

Discussion in the task force?!
Parallel branch with behavior as comment 7 above must be drawn.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
If ESD is lost, sooner or later the FSM will exit DATA state because silence is detected
Packet would be discarded anyway by the MAC
PHY should not try to do the MAC's job

Cl **147** *SC* **147.2.5** *P* **150** *L* **16** # 283

Zerna, Conrad Fraunhofer

Comment Type **TR** *Comment Status* **D** *Technical*

A mismatch in "PMA loopback detected symbols" versus sent symbols can also be caused by interference on the line.
Without echo cancellation (which would drive complexity), detecting SYNC and SSD from another participant is nearly impossible.

SuggestedRemedy

Discussion in the task force: how detrimental to the performance is it, when COL is raised in case of an acutal collision and a bit error?
I changed right column to "No". If the leading phrase "A collision may be" marks just an example, but not a mandatory part of the standard clause, I am ok with the sentence.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The wording is not ambigous. "may (be detected)" denotes something that is a possibility/suggestion. Mandatory parts use the term "shall"
Moreover, the editor's note about the timeout is there exactly for this reason: if after some time the SYNC/SSD is not detected, COL shall be indicated
It's still for the group to discuss how long the timeout should be (TBD)
Implementers have the freedom of detecting the collisions the way they prefer

Cl **147** *SC* **147.3** *P* **151** *L* **39** # 284

Zerna, Conrad Fraunhofer

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

Draft for new objectives makes full-duplex optional.

SuggestedRemedy

"provides half-duplex (and optional full-duplex)"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
New objectives have not been approved yet, so this can not be anything else than reject at this time
In the future however, the following change may apply, depending on the details of what changes to the objectives get approved: "The PMA provides both full duplex and half duplex communications to and from medium" to "The PMA provides full duplex and optionally half duplex communication to and from a medium"

Cl **147** *SC* **147.3** *P* **151** *L* **40** # 285

Zerna, Conrad Fraunhofer

Comment Type **ER** *Comment Status* **D** *Technical*

Manchester with silent/high-Z state is actually 3-Level

SuggestedRemedy

"DME with high-Z state"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
DME is defined as a two level encoding
The high-Z/impedance state is not part of a DME signal, it's defined in the PMD when the DME encoder is not operating (silent)

Cl **147** *SC* **Table 147-2** *P* **152** *L* **42** # 286

Zerna, Conrad Fraunhofer

Comment Type **TR** *Comment Status* **D** *State diagram*

Delay between transmission should actually be part of PCS state machine and given in clock cycles.

SuggestedRemedy

Wait state on page 146 around line 33.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
What is currently specified is the minimum time during which there shall be no transitions on the line, to allow the DME decoder to properly align on the stream
PCS/PMA implementation shall take this number into account but in principle this has no relation with the PCS clock

Cl **147** *SC* **147.3.2** *P* **152** *L* **48** # 271
Xu, Dayin Rockwell Automation

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

This paragraph is not logically correct.

SuggestedRemedy

Refer to PAGE 5 of the accompanied presentation xu_3cg_01_0118.pdf.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace the paragraph starting at 152/48 and ending at 152/50 with this:<
If the tx_sym parameter value is the special 5B symbol 'I', the PMD would act according to its operation mode, as follows:
- When in multidrop mode, the PDM shall be put into high-impedance/Z state,
- While in point-to-point mode, the PDM shall drive a differential voltage of 0 V (BI_DA+ = BI_DA-) instead
>
Notes:
- Commenter wrote "Refer to PAGE 5 of the accompanied presentation xu_3cg_01_0118.pdf", but the correct information seems to be not page 5, but 4 (of 5)
- Spaces between "0" and "V", and "+" and "=" are preferred to be a single <non-breaking white-space> characters, to keep the clause consistent
- First paragraph (preceding the 2-element list) should have "keep with next paragraph" set

Cl **147** *SC* **147.4.1** *P* **154** *L* **10** # 287
Zerna, Conrad Fraunhofer

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

"data symbol" should read

SuggestedRemedy

"DME symbol" for clarity

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This is not a DME encoded stream. It's a simple voltage level sequence. Might be discussed within the group (TBD)

Cl **147** *SC* **147.4.1** *P* **154** *L* **20** # 288
Zerna, Conrad Fraunhofer

Comment Type **T** *Comment Status* **D** *PMA Electrical*

PRBS6 or PRBS7 should be appropriate. Pseudo-Random data can also be fed into the 4B/5B-encoder to recreate the proper spectrum/PSD.

SuggestedRemedy

Presentation in Geneva .

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Proposal has not been presented yet, so this can not be anything else than reject at this time

Cl **147** *SC* **147.4.1.1** *P* **154** *L* **35** # 289
Zerna, Conrad Fraunhofer

Comment Type **E** *Comment Status* **D** *AutoNeg*

"Additionally" should read

SuggestedRemedy

"Optionally"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "Additionally, auto-negotiation" to "Optionally, auto-negotiation"

Cl **147** *SC* **147.4.1.3** *P* **155** *L* # 302
Beruto, Piergiorgio Canova Tech Srl

Comment Type **T** *Comment Status* **D** *PSD Mask*

PSD mask should be specified as described in http://www.ieee802.org/3/cg/public/adhoc/8023cg_short_reach_PSD_mask_upd.pdf slides #3 and #4

SuggestedRemedy

Add PSD mask proposed limits. NOTE: this requires some more discussion in the group.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Todo:
- Add 2 formula: Upper PSD(f) and Lower PSD(f) from page 3/14
- Add PSD mask graph (.png for now) from page 4/14

Cl **147** *SC* **147.5.1** *P* **155** *L* **42** # 306
iyer, venkat microchip

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

"twisted pair" will be replaced in objectives

SuggestedRemedy

replace with single balanced pair throughout doc

Proposed Response *Response Status* **W**

PROPOSED REJECT.
New objectives have not been voted yet, so this can not be anything else than reject at this time
In the future however, note that there are many locations this may affect (including the header for each page), thus the text that is to replace all forms of Twisted Pair (such as "twisted pair" and "twisted-pair" will all possible capitalizations) must be, clear, compact and compatible with all uses

Cl **147** *SC* **147.5.1.1** *P* **155** *L* **47** # 290
Zerna, Conrad Fraunhofer

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

Termination precision of +-10% over process and temperature actually requires trimmed devices in most semiconductor technologies.

SuggestedRemedy

Discussion in the task force, if requirement can be relaxed to +-20% for example
Proposed Change: Replace "+-10%" with "+-20%"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Changes needed:
- 155/47: change "the PMD shall provide fixed" to "the PMD should provide fixed"
- 155/50: add new stence to the paragraph "Where a load is not specified, the transmitter shall meet the requirements of this clause with a 100 O resistive differential load connected to each transmitter output."
Note: The space between "100" and "O" is preferred to be a single <non-breaking white-space> character, to keep the clause consistent
- 156/3: change "the PMD shall provide fixed" to "the PMD should provide fixed"

Cl **147** *SC* **147.5.1.2** *P* **156** *L* **12** # 291
Zerna, Conrad Fraunhofer

Comment Type **TR** *Comment Status* **D** *Technical*

Precision of multi-drop head- and end-terminations should be specified.

SuggestedRemedy

Input from OEMs to be checked in channel simulation. Higher precision devices are more expensive .
Proposed Change: " . shall be terminated by two external 100Ohm (nominal, precision +-10%) resistances or a PMD termination at the edges as depicted in Figure 147-10."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implementation should not be specified, the electrical parameters (return loss, etc.) should be met, and those will drive the implementation
This is a TBD for the TF

Cl **147** *SC* **147.5.1.2** *P* **156** *L* **13** # 292
Zerna, Conrad Fraunhofer

Comment Type **TR** *Comment Status* **D** *Technical*

"10KOhm" should be

SuggestedRemedy

"min. 10kOhm from DC to 25MHz"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "10K O" to "minimum 10 kO from DC to 25 MHz"
Note: The space characters (between "10" and "kO", and "25" and "MHz") is preferred to be a single <non-breaking white-space> characters, to keep the clause consistent

Cl **147** *SC* **147.6** *P* **157** *L* **1** # 293
Zerna, Conrad Fraunhofer

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

This given data is the baseline for

SuggestedRemedy

"Point-2-Point Segment Limits", not the mixing segment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: Mixing segment limits
To: Point-to-point link segment transmission parameters

Cl **147** *SC* **147.6.3** *P* **157** *L* **28** # 294
Zerna, Conrad Fraunhofer

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

ModeConversion should be better .

SuggestedRemedy

Presentation in Geneva .

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Commenter has not provided information to make changes to the draft.

For task group discussion of cited presentation.

Cl **147** *SC* **147.6.3** *P* **157** *L* **28** # 300
Beruto, Piergiorgio Canova Tech Srl

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

As described in http://www.ieee802.org/3/cg/public/adhoc/8023cg_short_reach_PSD_mask_upd.pdf It is not possible to meet EMC requirements with -30db of MC loss. -43db looks more feasible.

SuggestedRemedy

Change equation 147-3 so that the MC value is "43" from 0.3 to 20 MHz and "43-20*log10(f/20)" from 20MHz to 200 Mhz. NOTE: this requires some more discussion in the group.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

For task group discussion of cited presentation http://www.ieee802.org/3/cg/public/adhoc/8023cg_short_reach_PSD_mask_upd.pdf.

Cl **148** *SC* **148** *P* **161** *L* **1** # 301
Beruto, Piergiorgio Canova Tech Srl

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

Placeholder

SuggestedRemedy

Remove "placeholder"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Delete "placeholder" from page 161, line 1

Cl **148** *SC* **148** *P* **161** *L* **1** # 340
Brandt, David Rockwell Automation

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

No longer a placeholder.

SuggestedRemedy

148. PLCA Reconciliation Sublayer Placeholder

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Delete "placeholder" from page 161, line 1
NOTE: duplicate of #301

Cl **148** *SC* **148.1** *P* **161** *L* **7** # 341
Brandt, David Rockwell Automation

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

Correct description of advantages.

SuggestedRemedy

This clause specifies the optional PHY Level Collision Avoidance (PLCA) capabilities. PLCA provides improved performance over standard CSMA/CD method in terms of maximum throughput and maximum latency for small multidrop networks having a limited number of nodes and low propagation delays high utilization.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

Replace paragraph at page 161, starting at line 5 with the following text:

This clause specifies the optional PHY Level Collision Avoidance (PLCA) capabilities. PLCA provides improved performance over standard CSMA/CD method in terms of maximum throughput and maximum latency for small multidrop networks having a limited number of nodes and high utilization.

Cl **148** *SC* **148.4.1** *P* **161** *L* **41** # 342
Brandt, David Rockwell Automation

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

Provide an introduction to this gRS.

SuggestedRemedy

Within the scope of this clause, the term generic Reconciliation Sublayer (gRS) is used to denote any IEEE 802.3 Reconciliation Sublayer (RS) used to interface a MAC with any PHY supporting the PLCA capability through the xMII.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

For commenter: PLCA at this time is defined for MII only. It makes more sense to me using the word MII instead of xMII in the suggested remedy

For editor: add at page 161, line 41 the following text

Within the scope of this clause, the term generic Reconciliation Sublayer (gRS) is used to denote any IEEE 802.3 Reconciliation Sublayer (RS) used to interface a MAC with any PHY supporting the PLCA capability through the MII.

Cl **148** *SC* **Figure 148-1** *P* **162** *L* # 295
Zerna, Conrad Fraunhofer

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

Interface switched?

SuggestedRemedy

MII should go to MAC (from gRS), not PHY.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
gRS lies between the MAC and the MII

Cl **148** *SC* **148.4.2** *P* **162** *L* **38** # 343
Brandt, David Rockwell Automation

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

Time synchronization interaction is not depicted as stated.

SuggestedRemedy

Replace Figure 148-1 with Figure 90-2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Replace Figure 148-1 with Figure 90-2.

Cl **148** *SC* **148.4.2** *P* **163** *L* **1** # 344
Brandt, David Rockwell Automation

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

Ambiguous wording.

SuggestedRemedy

When PLCA functions are not supported or are disabled by the management interface

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "When PLCA functions are not supported or disabled by management interface" to "When PLCA functions are not supported or are disabled by the management interface"

Cl **148** *SC* **148.4.2** *P* **163** *L* **41** # 345
Brandt, David Rockwell Automation

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

Clarify wording.

SuggestedRemedy

When TSSI support is also specified in the actual RS, the SFD detection shall be defined such as the SFD of transmitted frames shall be is detected after the PLCA variable delay line, as shown in Figure 148-2. This ensures the network latency measurement is not affected by the random jitter synchronization latency added by PLCA. No special attention is required for SFD detection of received frames.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

Replace paragraph starting at line 41 with the following text:

When TSSI support is also specified in the actual RS, the SFD detection of transmitted frames shall be detected after the PLCA variable delay line, as shown in Figure 148-2. This ensures the network latency measurement is not affected by the synchronization latency added by PLCA. No special attention is required for SFD detection of received frames.

Cl **148** *SC* **148.4.2** *P* **163** *L* **48** # 346

Brandt, David — Rockwell Automation

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

The mapping clauses inherited "Reconciilation sublayer" and not "Reconciliation Sublayer" as a defined term. Preferred is RS as a well known acronym.

SuggestedRemedy

Replace "Reconciilation sublayer" and "Reconciliation Sublayer" with RS through the remainder of the clause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Find and replace all occurrence of "Reconciliation sublayer" or "Reconciliation Sublayer" with the acronym "RS" starting from page 163 up to the end of clause 148

Cl **148** *SC* **148.4.3.3.1** *P* **164** *L* **41** # 347

Brandt, David — Rockwell Automation

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

SuggestedRemedy

Maps the primitive

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

At page 164, line 41, change "Maps" with "Map".

Cl **148** *SC* **148.4.4.1.1** *P* **165** *L* **48** # 272

Xu, Dayin — Rockwell Automation

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

The description is wrong. RX_DV signal should never be asserted even when an early receive indication is signaled

SuggestedRemedy

A BEACON request shall not make the PHY assert the CRS signal with the exception of signaling an early receive indication as specified in 148.4.4.1.3. A BEACON request shall not make the PHY assert the RX_DV signal.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "A BEACON request shall not make the PHY assert the CRS or RX_DV signals with the exception of signaling
an early receive indication as specified in 148.4.4.1.3" to "A BEACON request shall not make the PHY assert the CRS signal with the exception of signaling an early receive indication as specified in 148.4.4.1.3. A BEACON request shall not make the PHY assert the RX_DV signal"

Cl **148** *SC* **148.4.4.2.1** *P* **166** *L* **34** # 348

Brandt, David — Rockwell Automation

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

Terms do not require parentheses.

SuggestedRemedy

the value "BEACON"BEACON

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

Remove parentheses around the word BEACON

Cl **148** *SC* **148.4.4.2.1** *P* **166** *L* **34** # 349
Brandt, David Rockwell Automation

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

Terms do not require parentheses.

SuggestedRemedy

"NONE"NONE

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

Remove parentheses around the word NONE

Cl **148** *SC* **148.4.4.2.1** *P* **166** *L* **44** # 351
Brandt, David Rockwell Automation

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

Terms do not require parentheses.

SuggestedRemedy

"NONE"NONE

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

Remove parentheses around the word NONE

Cl **148** *SC* **148.4.4.2.1** *P* **166** *L* **44** # 350
Brandt, David Rockwell Automation

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

Terms do not require parentheses.

SuggestedRemedy

the value "COMMIT"COMMIT

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

Remove parentheses around the word COMMIT

Cl **148** *SC* **148.4.4.2.3** *P* **167** *L* **11** # 352
Brandt, David Rockwell Automation

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

"<=" has a special symbol

SuggestedRemedy

Use the assignment operator from the "List of Special Symbols" prior to Clause 1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "<=" with appropriate unicode character (left arrow with open end) normally used to indicate assign

Cl **148** *SC* **148.4.4.2.4** *P* **167** *L* **25** # 353
Brandt, David Rockwell Automation

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

"<=" has a special symbol

SuggestedRemedy

Use the assignment operator from the "List of Special Symbols" prior to Clause 1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "<=" with appropriate unicode character (left arrow with open end) normally used to indicate assign

Cl **148** *SC* **148.4.5.1** *P* **167** *L* **42** # 273
Xu, Dayin Rockwell Automation

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

Typo "PYHs"

SuggestedRemedy

PHYs

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "PYHs" to "PHYs"

Cl **148** *SC* **148.4.5.1** *P* **167** *L* **42** # 354

Brandt, David Rockwell Automation

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

Spelling error.

SuggestedRemedy

Slave PYHs PHYs wait

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

Change PYHs to PHYs

Cl **148** *SC* **148.4.5.1** *P* **168** *L* **5** # 355

Brandt, David Rockwell Automation

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

The WAIT_TO bullets for CRS does not APPEAR to match the state diagram, and would benefit from a clarification.

SuggestedRemedy

2) The PHY asserts the CRS signal (plca_eri = TRUE), indicating a data reception is about to occur.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "The PHY asserts the CRS signal, indicating a data reception is about to occur" to "The PHY asserts the CRS signal (plca_eri = TRUE), indicating a data reception is about to occur"

Cl **148** *SC* **148.4.5.1** *P* **168** *L* **35** # 356

Brandt, David Rockwell Automation

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

Clarify wording.

SuggestedRemedy

When condition (4) is met, other PHY's transmit opportunity is yielded, another PHY has yielded its transmit opportunity, causing the transmit opportunity counter to be incremented and TO_TIMER to be reset.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

Replace paragraph starting at line 35 up to the period with the following text:

When condition (4) is met, another PHY has yielded its transmit opportunity, causing the transmit opportunity counter to be incremented and TO_TIMER to be reset.

Cl **148** *SC* **Fig. 148-3** *P* **169** *L* # 357

Brandt, David Rockwell Automation

Comment Type **E** *Comment Status* **D** *State Diagram*

RECV_BEACON_TMR and BEACON_TMR do not match timer definitions of *_TIMER.

SuggestedRemedy

Use RECV_BEACON_TIMER and BEACON_TIMER in the figure.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Change "RECV_BEACON_TMR" to "RECV_BEACON_TIMER" in the figure

Change "BEACON_TMR" to "BEACON_TIMER" in the figure

Cl **148** *SC* **148.4.5.1** *P* **170** *L* **36** # 274
Xu, Dayin Rockwell Automation

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

"Committed <= FALSE" is not necessory, because this has been done in the "TRANSMIT" state

SuggestedRemedy

Delete "Committed <= FALSE"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Delete "Committed <= FALSE" text from the "NEXT_TS" box

Cl **148** *SC* **148.4.5.1** *P* **170** *L* **38** # 275
Xu, Dayin Rockwell Automation

Comment Type **T** *Comment Status* **D** *State Diagram*

The condition is wrong, "myID = 0" means only Master transits to the "RESYNC" state, but all PHYs shall transit to the "RESYNC" state

SuggestedRemedy

Change " myID = 0 * curID = MAX_ID" to "curID = MAX_ID"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This is actually the intended behavior: slave PHYs shall transition to WAIT_TO state.
When the master sends the BEACON, the slave PHYs transit first to EARLY_RECEIVE (plca_eri = TRUE) then to RESYNC state once the BEACON is signaled via rx_cmd.
In this way only the master needs to have MAX_ID configured.

Cl **148** *SC* **148.4.5.2** *P* **171** *L* **1** # 358
Brandt, David Rockwell Automation

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

Incorrect variable name.

SuggestedRemedy

plca_eng plca_en

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "plca_eng" to "plca_en"
Duplicate of #276

Cl **148** *SC* **148.4.5.2** *P* **171** *L* **1** # 307
iyer, venkat microchip

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

typo: plca_eng

SuggestedRemedy

replace with plca_en

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "plca_eng" to "plca_en"
Duplicate of #276

Cl **148** *SC* **148.4.5.2** *P* **171** *L* **1** # 276
Xu, Dayin Rockwell Automation

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

typo "plca_eng"

SuggestedRemedy

change "plca_eng" to "plca_en"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change "plca_eng" to "plca_en"

Cl **148** *SC* **148.4.5.2** *P* **171** *L* **8** # 359
Brandt, David Rockwell Automation

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

Incorrect Values for plca_eri. Does not match state diagram.

SuggestedRemedy

Values: ON or OFF Values: TRUE or FALSE

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

Change text from: ON or OFF
to: TRUE or FALSE

Cl **148** *SC* **148.4.5.2** *P* **171** *L* **13** # 360
Brandt, David Rockwell Automation

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

Incorrect Values for plca_crs. Does not match state diagram.

SuggestedRemedy

Values: ON or OFF Values: TRUE or FALSE

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

Change text from: ON or OFF
to: TRUE or FALSE

Cl **148** *SC* **148.4.5.2** *P* **171** *L* **28** # 361
Brandt, David Rockwell Automation

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

myID is split into two incomplete entries. Wording is awkward. Combine into a single entry. Replace entire text as follows.

SuggestedRemedy

ID representing the PLCA transmit oppor-tunity assigned to the PHY. Generated by the management interface (register TBD). May also be set by the auto-negotiation protocol as described in Clause 98. The special value '0' is assigned to the master node, indicating the PHY shall generate BEACON signals. Values: integer value from 0 (master) to MAX_ID

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

For commenter: Possible typo, "oppor-tunity" should be "opportunity"

For editor: Replace text starting at line 28, ending at line 38 with the following text

ID representing the PLCA transmit opportunity assigned to the PHY. Generated by the management interface (register TBD). May also be set by the auto-negotiation protocol as described in Clause 98. The special value '0' is assigned to the master node, indicating the PHY shall generate BEACON signals. Values: integer value from 0 (master) to MAX_ID

Cl **148** *SC* **148.4.5.2** *P* **171** *L* **32** # 277
Xu, Dayin Rockwell Automation

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

The text layout is wrong. "myID may also be set .. To MAXID" should be part of "myID" variable defintion.

SuggestedRemedy

Reformat the text to make " "myID may also be set .. To MAXID" be part of definition of myID

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is correct but conflicts with #361

Cl **148** *SC* **148.4.5.2** *P* **172** *L* **1** # 362
Brandt, David Rockwell Automation

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

framePending describes the MAC being ready to send a "packet".

SuggestedRemedy

Either change "packet" to "frame" or change the variable to reflect what is being sent by the MAC. I suggest these are packets.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

For commenter: I suggest changing "packet" to "frame" for now since it's used everywhere else in clause 148. Would need some more discussion in the group.

For editor: Change "packet" to "frame"

Cl **148** *SC* **148.4.5.4** *P* **172** *L* **23** # 363
Brandt, David Rockwell Automation

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

PHYs (I believe) are gender neutral.

SuggestedRemedy

any PHY that meets her its own transmit opportunity

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Formatting from commenter's .xls file did not carry over to the Acccess database

Change "her" to "its"

Cl **148** *SC* **148.4.6.1** *P* **174** *L* **14** # 365

Beruto, Piergiorgio Canova Tech Srl

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

refer to presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slides #4 and #5

NOTE: presentation use the wording prior to PLCA editorial fitting changes

SuggestedRemedy

As specified in presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slide #4

In figure 148-5, in the state transition between the RECEIVE and IDLE state, replace description with the following text: "plca_crs = FALSE"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In figure 148-5, in the state transition between the RECEIVE and IDLE state, replace description with the following text: "plca_crs = FALSE"

Cl **148** *SC* **148.4.6.1** *P* **174** *L* **24** # 366

Beruto, Piergiorgio Canova Tech Srl

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

refer to presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slides #4 and #5

NOTE: presentation use the wording prior to PLCA editorial fitting changes

SuggestedRemedy

As specified in presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slide #4

In figure 148-5, in the state transition between the IDLE and RECEIVE state, replace description with the following text: "plca_crs = TRUE"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In figure 148-5, in the state transition between the IDLE and RECEIVE state, replace description with the following text: "plca_crs = TRUE"

Cl **148** *SC* **148.4.6.1** *P* **174** *L* **36** # 367

Beruto, Piergiorgio Canova Tech Srl

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

refer to presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slides #4 and #5

NOTE: presentation use the wording prior to PLCA editorial fitting changes

SuggestedRemedy

As specified in presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slide #4

In figure 148-5, in the HOLD state, replace description with the following text: "framePending = TRUE CARRIER_STATUS=CARRIER_ON a <= a + 1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In figure 148-5, in the HOLD state, replace description with the following text: "framePending = TRUE CARRIER_STATUS=CARRIER_ON a <= a + 1"

Cl **148** *SC* **148.4.6.1** *P* **175** *L* **24** # 368

Beruto, Piergiorgio Canova Tech Srl

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

refer to presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slides #4 and #5

NOTE: presentation use the wording prior to PLCA editorial fitting changes

SuggestedRemedy

As specified in presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slide #4

In figure 148-6, in the TRANSMIT state, change "CARRIER_STATUS <= CARRIER_ON if plca_crs = TRUE CARRIER_OFF else" to "CARRIER_STATUS <= CARRIER_ON"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In figure 148-6, in the TRANSMIT state, change "CARRIER_STATUS <= CARRIER_ON if plca_crs = TRUE CARRIER_OFF else" to "CARRIER_STATUS <= CARRIER_ON"

Cl **148** *SC* **148.4.6.1** *P* **175** *L* **36** # 369
Beruto, Piergiorgio Canova Tech Srl

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

refer to presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slides #4 and #5

SuggestedRemedy

As specified in presentation
http://www.ieee802.org/3/cg/public/adhoc/8023cg_T1S_baseline_amendments.pdf slide #4

In figure 148-6, in the FLUSH state, change "CARRIER_STATUS <= CARRIER_ON if plca_crs = TRUE CARRIER_OFF else" to "CARRIER_STATUS <= CARRIER_ON"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In figure 148-6, in the FLUSH state, change "CARRIER_STATUS <= CARRIER_ON if plca_crs = TRUE CARRIER_OFF else" to "CARRIER_STATUS <= CARRIER_ON"

Cl **146** *SC* **146A.1** *P* **181** *L* **22** # 32
Gottron, Jens Siemens AG

Comment Type **T** *Comment Status* **D** *Intrinsic Safety*

External terminations resistors are not only recommended, they are required

SuggestedRemedy

change "recommended" to "required"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Requirements cannot be made in informative annexes.

Cl **146** *SC* **146A.1** *P* **181** *L* **26** # 33
Gottron, Jens Siemens AG

Comment Type **T** *Comment Status* **D** *Intrinsic Safety*

seperate pins are not only recommended, they are required

SuggestedRemedy

change "recommended" to "required"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Requirements cannot be made in informative annexes

Cl **146** *SC* **146A** *P* **182** *L* **4** # 256
Graber, Steffen Pepperl+Fuchs GmbH

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

Missing Dots in schematics for suppressor diode connections.

SuggestedRemedy

Please add in all figures of this Annex (Figure 146A-1, 146A-2 and 146A-3) the connection dots for the suppessor diodes.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146A** *P* **182** *L* **12** # 255
Graber, Steffen Pepperl+Fuchs GmbH

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

IEEE802.3cg PHY IC

SuggestedRemedy

Please replace in all figures of this Annex (Figure 146A-1, 146A-2 and 146A-3) by 10BASE-T1L PHY IC.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **146** *SC* **146A** *P* **183** *L* **23** # 257
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **E** *Comment Status* **D** *Intrinsic Safety*

500 µH

SuggestedRemedy

Please remove the 500 µH label from the schematic.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **200** *SC* **200A** *P* **184** *L* **3** # 258

Graber, Steffen — Pepperl+Fuchs GmbH

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

(normative)

SuggestedRemedy

Is the intention of this Annex to be (normative) or is the intention of this Annex to be (informative)?

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Commenter has not provided information to make changes to the draft.

Annex 200A is normative.
Please note there has been TG discussion to provide "information" for powered trunk cable topologies not "requirements".

Cl **200** *SC* **200A** *P* **185** *L* **3** # 25

Schicketanz, Dieter — Reutlingen University

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

This Annex describes power distribution posibilities. There may be others. This annex is a nice overview but cannot be normative because it is not a unique solution. May be 2 annexes one normative (power classes) and one informative could solve the dilemma.

SuggestedRemedy

Change normative to informative

Proposed Response *Response Status* **W**

PROPOSED REJECT.
In 200A.1.1.1.2 Point-to-point class power requirements are given inTable 200A-2 for each class.

Cl **200** *SC* **200A** *P* **186** *L* **38** # 259

Graber, Steffen — Pepperl+Fuchs GmbH

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

4.00 ohms per 10 connectors DCR.

SuggestedRemedy

This value seems to be to high. Needs to be discussed with connector manufacturers. Expectation is to be in the range of 50 mohms to max. 100 mohms per inline connector, thus leading too 0.5 to 1 ohms for 10 connecotrs DCR. Therefore adopt also link segment resistance at IL limit accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Assuming that the commentor is suggesting that the connector DCR used in link segment DCR calculation be changed from 200 milliohms to 50 milliohms. This will result in connector loop DCR contribution of 1 ohm.

If accepted, change corresponding link segment resistance @ IL limit (ohm) in Table 200A-1-Point-to-point link segment DCR characteristics.