Cl **98** *SC* **98.5.2** *P* **36** *L* # 121

Zimmerman, George — APL Group, ADI, Cisco, Marvell, Onsemi, Sony

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

Need to add in 85ms link fail inhibit timer per Fitzgerald_3dg_01_11132024.pdf slide 7

SuggestedRemedy

Add 98.5.2 to the draft, with definition of link fail inhibit timer, and editing instruction:
98.5.2 State diagram timers
Change definition for link fail inhibit timer to add 100BASE-T1L as shown:

link_fail_inhibit_timer_[HCD]□
Timer for qualifying a link_status=FAIL indication or a link_status=OK indication when a specific technology link is first being established. A link will be considered “failed” only if the link_fail_inhibit_timer_[HCD] has expired and the link has still not gone into the link_status=OK state. The expiration time of the link_fail_inhibit_timer_[HCD] shall be dependent on the selected PHY type. For all PHY types, except 10BASE-T1L</UL>, 100BASE-T1L,</UL> and 10BASE-T1S, this timer shall expire 97 ms to 98 ms after entering the AN GOOD CHECK state. For a 10BASE-T1L PHY, this timer shall expire 3030 ms to 3090 ms after entering the AN GOOD CHECK state. </UL> For a 100BASE-T1L PHY, this timer shall expire 85 ms after entering the AN GOOD CHECK state.</UL> For a 10BASE-T1S PHY, this timer shall expire 400 ms to 405 ms after entering the AN GOOD CHECK state.

Add 98.6 PICS to the draft:
98.6 Protocol implementation conformance statement (PICS) proforma for Clause 98, Auto-Negotiation for Single Differential-Pair Media
98.6.3 Major capabilities/options
Insert new row to table after *10T1S (unchanged rows not shown) as shown:
Item | Feature | Subclause | Value / Comment | Status | Support
*100T1L | 100BASE-T1L PHY type | 98.5.2 | | O | Yes[] No []

98.6.9 State diagram and variable definitions
Change table to change row SD19, and add new row SD 20a after row SD20 (unchanged rows not shown) as shown:
Item | Feature | Subclause | Value / Comment | Status | Support
SD19 | link_fail_inhibit_timer_[HCD] | 98.5.2 | Expire 97 to 98 ms after entering the AN GOOD CHECK state | !10T1L</UL>*!10T1S*!100T1L:M</UL> | Yes[] N/A[]
...
</UL> SD20a | link_fail_inhibit_timer_[HCD] for 100BASE-T1L PHY | 98.5.2 | Expire 85 ms after entering the AN GOOD CHECK state | 100T1L | Yes[] N/A[] </UL>

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license to align. See zimmerman_3dg_03_06252025.pdf for clean text.

Cl **98** *SC* **98.2** *P* **36** *L* **4** # 112

Zimmerman, George — APL Group, ADI, Cisco, Marvell, Onsemi, Sony

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

need to specify which mode 100BASE-T1L shall use. Suggest using LSM to align with distance and likely pairing with 10BASE-T1L in multimode PHYs

SuggestedRemedy

Add the following to the draft, after 98.2 (where </UL> indicates start or stop of underline)

98.2.1 Transmit function requirements
Change the 3rd and 4th sentences of the last paragraph of 98.2.1 as shown:
For link segments with high insertion loss and those requiring 10BASE-T1L</UL> or 100BASE-T1L</UL>, LSM is provided to enable the full reach capability. If Auto-Negotiation is implemented, 10BASE-T1L </UL>and 100BASE-T1L </UL>PHYs shall support LSM and may optionally support HSM.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.5.1** *P* **36** *L* **5** # 113

Zimmerman, George — APL Group, ADI, Cisco, Marvell, Onsemi, Sony

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

need to add 100BASE-T1L low power register bit to state diagram definition of "power_on" Note, this really needs maintenance so we don't have to call out all the PHYs - but that's outside our scope. MultiGBASE-T1 PHYs are missing here….

SuggestedRemedy

Add the following to the draft after 98.2 (and any subclauses added by other comments):
98.5 Detailed functions and state diagrams
98.5.1 State diagram variables
Change the variable power_on as shown:
power_on
Condition that is true until such time as the power supply for the device that contains the Auto-
Negotiation state diagrams has reached the operating region or the device has low-power mode
set via 1000BASE-T1 PMA control register bit 1.2304.11</UL>, the 100BASE-T1L PMA control register bit 1.2300.11,</UL> or via 10BASE-T1L PMA control register bit 1.2294.11.
Values:
false: the device is completely powered (default)
true: the device has not been completely powered

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **22** *SC* **22.2.2.4** *P* **23** *L* **1** # 33

Curran, Philip ADI

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

Although the editor's note states it is a placeholder, I do not think there has been any adopted proposal to add a link-fault signaling state diagram in Clause 22

SuggestedRemedy

Remove

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
TFTD. Specifically need to determine whether a state diagram is needed for technical completeness. If not, consider text explaining why not.

Cl **00** *SC* **0** *P* **54** *L* **49,50** # 49

Curran, Philip ADI

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

The paragraph "The control and management interface shall be restored to operation within 10 ms from setting of bit 3.2295.15" should be removed. That is already defined in Clause 45.2.3.75a.1, where the defined time is 0.5 s, which is in contradiction with the value in this paragraph.

SuggestedRemedy

Remove this paragraph to avoid inconsistencies with the definition in 45.2.3.75a.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **60** *L* **20** # 53

Curran, Philip ADI

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

TS is '—', and should be 1.

SuggestedRemedy

Change the value of TS from — to 1. Alternatively TS could be defined as:
!(!(Previous transfer = I)*(Odd transfer = DAT)*(Even transfer = DAT)*(dly_enc = TRUE))
and removed from the table

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2.4** *P* **60** *L* **43** # 16

Curran, Philip ADI

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

The definition associated with the symbol /I/ is "Normal Inter-Frame, loc_phy_ready=OK". This is misleading as it suggests that Normal Inter-Frame signaling may also occur when loc_phy_read = NOT_OK. This is not the case.

SuggestedRemedy

Change the definition for /I/ to "Normal Inter-Frame"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.4.3** *P* **79** *L* **8** # 26

Curran, Philip ADI

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

The equation for the sign generation during training does not match the adopted proposal.

SuggestedRemedy

Modify in accordance with adopted proposal. See slide 13 of Curran_3dg_01a_01202025.pdf from the January meeting in Phoenix.

I am not able to copy the correct equation reliably into this spreadsheet. Please consult the presentation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.4** *P* **92** *L* **18** # 89

Graber, Steffen Pepperl+Fuchs SE

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

As the "Refresh monitor block" is incorporated in the PMA Receive function, no separate Refresh monitor block is required.

SuggestedRemedy

Remove "Refresh Monitor, " in line 11 on page 92 and also the associated Editor's note in line 18.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **100** *L* **1** # 42

Curran, Philip ADI

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

The PMA state diagrams are currently in 190.4.9.3 which is a sub-clause of "190.4.9 State variables". This hierarchy does not seem to make sense.

SuggestedRemedy

Modify PMA state diagram hierarchy to match that of the PCS as follows:

190.4.9 Detailed functions and state diagrams
190.4.9.1 State diagrams parameters
190.4.9.1.1 Variables
190.4.9.1.2 Timers
190.4.9.2 State diagrams

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Consider whether to separate out parameters of individual state diagrams for clarity

Cl **190** *SC* **190.7.1.4** *P* **107** *L* **20** # 118

Zimmerman, George APL Group, ADI, Cisco, Marvell, Onsemi, Sony

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

The TCL shown in the figure is only for shielded link segments.

SuggestedRemedy

Change title of Figure 190-25 to "100BASE-T1L shielded link segment TCL"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.7.2.1** *P* **108** *L* **14** # 94

Graber, Steffen Pepperl+Fuchs SE

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

The IL20MHz is in dB, thus the "dB" unit needs to be removed in the following lines.

SuggestedRemedy

Change to: "IL20MHz < 16", "16 <= IL20MHz < 18", "18 <= IL20MHz < 21", "21 <= IL20MHz < 23" and "IL20MHz >= 23" (remove "dB"). Do the same on page 109, line 15ff and add "in dB" at the end of line 13 (after "20 MHz").

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
There is no harm in the extra clarity that IL20MHz is compared to values in dB on page 108.

On page 109, line 13, add "in dB" after "at 20 MHz"

Cl **00** *SC* **0** *P* **57/58** *L* **47/9,10** # 65

Curran, Philip ADI

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

The sentence "For values shown as binary, the lefmost bit is the first bit transmitted" may be misleading since the TXD<3:0> values shown subsequently in other subclauses with the MSB (TXD<3>) as the leftmost bit, while accoring to clause 22, TXD<0> is transmitted first. Since, other than that, binary values are not used in Clause 190, that sentence would better be removed.

SuggestedRemedy

Remove line 47 in page 57: "For values shown as binary, the lefmost bit is the first transmitted bit". Also remove the last sentence in page 58 lines 9-10 "Binary values are shown with the fist transmitted bit (the LSB) on the left".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove line 47 in page 57: "For values shown as binary, the lefmost bit is the first transmitted bit".

Consider whether paragraph on page 58 lines 5 through 11 is needed - this notation appears unused in our clause

Cl **78** *SC* **78.1.4** *P* **35** *L* **6** # 109

Zimmerman, George APL Group, ADI, Cisco, Marvell, Onsemi, Sony

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

need entries in clause 78 for 100BASE-T1L

SuggestedRemedy

Add the following at P35 L6, after 78.1.4 header:
Insert the following new row after the 100BASE-T1 row in Table 78–1 (unchanged rows not shown)
(insert table 78-1 -Clauses associated with each PHY or interface type to draft, with header row (as below), and one row shown:

PHY or interface type	Clause
100BASE-T1L	190

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **78** *SC* **78.2** *P* **35** *L* **7** # 110

Zimmerman, George — APL Group, ADI, Cisco, Marvell, Onsemi, Sony

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

need to add placeholders for additional needed parameters for EEE in table 78-2.

SuggestedRemedy

Add 78.2 LPI mode timing parameters description to the draft, with editing instruction (and editorial license to fill out the headers, min & max values, as indicated below):
Insert the following new row in Table 78-2, after the row for 10BASE-T1L (unchanged rows not shown):

PHY or interface type	T_s	T_q	T_r
100BASE-T1L	19.2	211.2	19.2

(implementation note, not to be included in the draft - full headers not shown in the comment, min & max times are equal, so the comment doesn't repeat them, but editorial license to populate and format the row per IEEE Std 802.3-2022)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Suggested remedy with editorial license.

Cl **78** *SC* **78.2** *P* **35** *L* **8** # 111

Zimmerman, George — APL Group, ADI, Cisco, Marvell, Onsemi, Sony

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

need to add placeholder for needed content in Table 78-4

SuggestedRemedy

Add
78.5 Communication link access latency
to the draft, with editing instruction ,
"Insert the following new row in Table 78-4 after row for 10BASE-T1L (unchanged rows not shown):"
add Table 78-4 - Summary of LPI timing parameters for supported PHYs or interfaces to the draft, with header row, and one row for 100BASE-T1L (in PHY or interface type column), and the remaining columns blank.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Suggested remedy - reviewers should consider whether the values are actually available and try to fill in the table rather than add a blank table to fill in later.

Cl **190** *SC* **190.1.3.3** *P* **42** *L* **1** # 7

Curran, Philip — ADI

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

The paragraph beginning "When the PHY LPI refresh status received …" is incorrect. No indication of low SNR is transmitted when the PHY is in the LPI transmit mode. In that scenario the PHY exits the LPI transmit mode and signals low SNR via the auxiliary bit.

SuggestedRemedy

Propose to simply delete the paragraph. Outlining the handling of low SNR seems too detailed for the overview.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.2.2.16** *P* **52** *L* **54** # 78

Graber, Steffen — Pepperl+Fuchs SE

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

Needs to be clarified/corrected, which function generates the primitive and which functions receive it.

SuggestedRemedy

Change from: "The parameter PMA_PCS_TX_LPI_STATUS.request conveys to the PCS Transmit and PMA Receive functions information regarding whether the transmit function is in the LPI transmit mode." to: "The parameter PMA_PCS_TX_LPI_STATUS.request conveys to the PMA Transmit and PMA Receive functions information regarding whether the PCS transmit function is in the LPI transmit mode."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3** *P* **54** *L* **8** # 79

Graber, Steffen — Pepperl+Fuchs SE

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

In figure 190-4 and also figure 190-17 the (dashed) arrow lines indicating eee_low_snr from PMA Receive function to PCS Transmit and PCS Receive function (across the PMA/PCS interface) is missing.

SuggestedRemedy

Add indication from PMA Receive function to PCS Transmit and PCS Receive functions in figures 190-4 and 190-17.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2.12** *P* **72** *L* **33** # 86

Graber, Steffen — Pepperl+Fuchs SE

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

32 partial frame counts is 32 * 2.4 µs = 76.8 µs, 44 partial frame counts is 105.6 µs.

SuggestedRemedy

Change "76.8s" to "76.8 µs" and "105.6s" to "105.6 µs".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.6** *P* **80** *L* **14** # 28

Curran, Philip — ADI

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

Figure 190-11 does not match the adopted proposal.

SuggestedRemedy

Modify in accordance with adopted proposal. See slide 21 of Curran_3dg_01_05132025.pdf from the May meeting in New Orleans.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.6** *P* **80** *L* **36** # 29

Curran, Philip — ADI

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

Table 190-9 does not match the adopted proposal.

SuggestedRemedy

Modify in accordance with adopted proposal. See slide 22 of Curran_3dg_01_05132025.pdf from the May meeting in New Orleans.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.6.2** *P* **81** *L* **41** # 31

Curran, Philip — ADI

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

The sentence describing quiet period signaling does not match the adopted proposal.

SuggestedRemedy

Change the sentence:

"During quiet periods, the PCS transmitter passes zero data encoded symbols to the PMA via the PMA_UNITDATA.request primitive."

to the following:

"During the quiet period the PCS transmitter shall pass zeros to the PMA via the PMA_UNITDATA.request primitive."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **99** *L* **15** # 41

Curran, Philip — ADI

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

The variable lpi_refresh_detect is not defined.

SuggestedRemedy

Add the following after line 15:

"The following variable is required when EEE is enabled for the link:

lpi_refresh_detect
Set TRUE when the receiver has reliably detected refresh signaling. It is set FALSE otherwise."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **Keywor** *SC* **Keywords** *P* **3** *L* **5** # 66

Graber, Steffen Pepperl+Fuchs SE

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

Please remove one of the two commas after "Ethernet" and also keywords "Physical Layer Collision Avoidance" and "PLCA" should be removed, as these are not used within this standard.

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4** *P* **20** *L* **35** # 67

Graber, Steffen Pepperl+Fuchs SE

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

"a octet" should read as "an octet".

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.16.1aa** *P* **26** *L* **37** # 68

Graber, Steffen Pepperl+Fuchs SE

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

Bit 1.18.8 has been changed to bit 1.18.9 (as 802.3da has already reserved bit 1.18.8).

SuggestedRemedy

Change Bit 1.18.8 to 1.18.9 in headline and following paragraph (in total 3 replacements). Modify also editing instruction to reflect changed by IEEE802.3da project.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.236b** *P* **28** *L* **39** # 69

Graber, Steffen Pepperl+Fuchs SE

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

", LH = Latching high" is not needed anymore.

SuggestedRemedy

Remove ", LH = Latching high".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.236b.1** *P* **28** *L* **44** # 2

Curran, Philip ADI

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

There is an additional "a" in "… supports a an increased ...".

SuggestedRemedy

Remove the additional "a".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.236b.3** *P* **29** *L* **3** # 3

Curran, Philip ADI

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

The description of how to interpret 1.2301.2 covers the case where it is read as zero first followed by the case where it is read as one.

Table 45-198b lists the allowed values in the opposite order.

SuggestedRemedy

Swap the first and second sentences in the paragraph.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3** *P* **30** *L* **19** # 71

Graber, Steffen Pepperl+Fuchs SE

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

"100BASE-T1L Advertisement" register is now named "100BASE-T1L training" register. "100BASE-T1L Link partner advertisement" register is now "100BASE-T1L link partner training" resister.

SuggestedRemedy

Change from "100BASE-T1L Advertisement" to "100BASE-T1L training". Change from "100BASE-T1L Link partner advertisement" to "100BASE-T1L link partner training".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.75b** *P* **31** *L* **33** # 72

Graber, Steffen Pepperl+Fuchs SE

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

"RS-FEC ability" bit should not be latching high, only read-only.

SuggestedRemedy

Change "RO/LH" to "RO" and remove "LH = Latching high, " from text line below table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.75c** *P* **32** *L* **20** # 5

Curran, Philip ADI

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

The EEE advertisement and RS-FEC advertisement bits are shown at bit positions 1 and 0 whereas they should be at bit positions 15 and 14.

SuggestedRemedy

Update Table 45-297c as follows:

Move EEE advertisement from 3.2297.1 to 3.2297.15

Move RS-FEC advertisement from 3.2297.0 to 3.2297.14

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.75d** *P* **32** *L* **40** # 6

Curran, Philip ADI

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

The following sentence is missing a space at "trainingregister:

"All the bits in the 100BASE-T1L link partner trainingregister are read only ...".

SuggestedRemedy

Change "trainingregister" to "training register".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.75d** *P* **32** *L* **41** # 73

Graber, Steffen Pepperl+Fuchs SE

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

"100BASE-T1L link partner trainingregister" should read as "100BASE-T1L link partner training register". Additionally in line 45 the "l" in "link partner" is missing.

SuggestedRemedy

Change "100BASE-T1L link partner trainingregister" to "100BASE-T1L link partner training register" and add missing "l" in "link partner" in line 45.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.75d** *P* **33** *L* **8** # 74

Graber, Steffen Pepperl+Fuchs SE

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

Bits 0 and 1 are also reserved.

SuggestedRemedy

Change "3.2298.13:2" to "3.2298.13:0".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.2.2** *P* **44** *L* **39** # 8

Curran, Philip ADI

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

The primitive PMA_REMRXSTATUS has been renamed PMA_REMFLRRXSTATUS and the parameter rem_rcvr_status has been renamed rem_flr_rcvr_status.

SuggestedRemedy

Change PMA_REMRXSTATUS to PMA_REMFLRRXSTATUS and change rem_rcvr_status to rem_flr_rcvr_status.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.2.2** *P* **44** *L* **39** # 75

Graber, Steffen Pepperl+Fuchs SE

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

"PMA_REMRXSTATUS.request" should be "PMA_REMFLRRXSTATUS.request".

SuggestedRemedy

Change "PMA_REMRXSTATUS.request" to "PMA_REMFLRRXSTATUS.request". Change also heading of clause 190.2.2.9 accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.236b.1** *P* **44** *L* **44** # 70

Graber, Steffen Pepperl+Fuchs SE

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

In "supports a an increased" the "a" is too much.

SuggestedRemedy

Change to: "supports an increased".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.2.2** *P* **45** *L* **18** # 9

Curran, Philip ADI

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

Dot missing in "PMA_REMPHYIDLErequest".

SuggestedRemedy

Insert dot.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.2.2** *P* **45** *L* **18** # 76

Graber, Steffen Pepperl+Fuchs SE

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

"PMA_REMPHYIDLErequest" should be "PMA_REMPHYIDLE.request".

SuggestedRemedy

Change "PMA_REMPHYIDLErequest" to "PMA_REMPHYIDLE.request".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.2.2** *P* **45** *L* **41** # 10

Curran, Philip ADI

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

The word 'PHY' is misplaced in Figure 190-3. It should be centered on the horizontal double sided arrow.

SuggestedRemedy

Update figure.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.2.2.9** *P* **49** *L* **26** # 11

Curran, Philip ADI

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

The heading uses the name PMA_REMRXSTATUS which has been changed to PMA_REMFLRRXSTATUS.

SuggestedRemedy

Change the heading text to PMA_REMFLRRXSTATUS.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.2.2.9.1** *P* **49** *L* **38** # 77

Graber, Steffen — Pepperl+Fuchs SE

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

"rem_rcvr_status" should be "rem_flr_rcvr_status".

SuggestedRemedy

Change "rem_rcvr_status" to "rem_flr_rcvr_status".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **49** *L* **38** # 47

Curran, Philip — ADI

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

The text is still referring to the old rem_rcvr_status parameter name

SuggestedRemedy

Change the text to "The rem_flr_rcvr_status parameter ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **54** *L* **30** # 48

Curran, Philip — ADI

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

rem_rcvr_status has been renamed rem_flr_rcvr_status, eee_low_snr is missing

SuggestedRemedy

Rename rem_rcvr_status to rem_flr_rcvr_status, add eee_low_snr (arrows going to both receive and transmit)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3** *P* **54** *L* **30** # 81

Graber, Steffen — Pepperl+Fuchs SE

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

"rem_rcvr_status" has been changed to "rem_flr_rcvr_status".

SuggestedRemedy

Change "rem_rcvr_status" to "rem_flr_rcvr_status". Do the same in figure 190-17.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **55** *L* **6** # 50

Curran, Philip — ADI

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

Reference to Figure 190-11 is incorrect. I believe it should be Figure 190-12

SuggestedRemedy

Change text to "... Figure 190-12", also make it an active cross reference.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2** *P* **55** *L* **6** # 82

Graber, Steffen — Pepperl+Fuchs SE

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

The Transmit State Diagram should be referenced.

SuggestedRemedy

Change "Figure 190-11" to "Figure 190-12".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **55** *L* **29** # 51

Curran, Philip — ADI

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

Reference to 190.5.3.6, although not already specified, looks incorrect. It will likely be 190.5.4.x (x TBD).

SuggestedRemedy

Change text to "... specified in 190.5.4.x"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **58** *L* **36** # 52

Curran, Philip — ADI

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

Table 190-1 header shows tx_enable and tx_error which are not defined.

SuggestedRemedy

Rename "tx_enable" and "tx_error" column headers in Table 190-1 to "TX_EN" and "TX_ER" respectively.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2.4** *P* **60** *L* **15** # 14

Curran, Philip ADI

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

Table 190-2 uses the symbol /Q/ which should be /R/.

SuggestedRemedy

Change /Q/ to /R/ in Table 190-2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2.4** *P* **60** *L* **16** # 15

Curran, Philip ADI

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

The even transfer category is specified as "IDLIDL".

SuggestedRemedy

Change "IDLIDL" to "IDL".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2.4** *P* **60** *L* **16** # 84

Graber, Steffen Pepperl+Fuchs SE

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

"IDL" is doubled.

SuggestedRemedy

Change "IDLIDL" to "IDL".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2.4** *P* **60** *L* **49** # 17

Curran, Philip ADI

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

The symbol for Assert Remote Fault is incorrectly name /RI/.

SuggestedRemedy

Change /RI/ to /R/.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2.4** *P* **62** *L* **37** # 18

Curran, Philip ADI

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

The indentation of "if TS_prev:" is incorrect. It should align with the "else:" that follows at line 39.

SuggestedRemedy

Fix indentation by adding spaces before the if.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2.11** *P* **69** *L* **8** # 19

Curran, Philip ADI

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

It would be better to use a fixed width font for the 6-tuples so that the symbols line up correctly.

SuggestedRemedy

Change font in Table 190-5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2.12** *P* **71** *L* **41** # 85

Graber, Steffen Pepperl+Fuchs SE

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

"." after "Table 190–10" is missing.

SuggestedRemedy

Add dot at the end of the sentence. Also add a dot at the end of the sentence on page 72, line 12.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **71** *L* **42** # 54

Curran, Philip ADI

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

Reference to Table 190-10 is incorrect, it should be Table 190-9

SuggestedRemedy

Change text to "Table 190-9"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **72** *L* **4** # 55

Curran, Philip ADI

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

Reference to 190.3.7 is incorrect, it should be 190.3.6

SuggestedRemedy

Change text to "as decribed in 190.3.6"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.3** *P* **72** *L* **42** # 87

Graber, Steffen Pepperl+Fuchs SE

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

The Receive state diagram is split into Figure 190-14 and Figure 190-15.

SuggestedRemedy

Change "Figure 190-14" to "Figure 190-14 and Figure 190-15".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2.12** *P* **72** *L* **33, 36** # 20

Curran, Philip ADI

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

The wake time values are 76.8 us and 105.6 us. Currently the values are incorrectly specified to be in seconds.

SuggestedRemedy

Change 76.8 s to 76.8 us and change 105.6 s to 105.6 us.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.4.2** *P* **75** *L* **21** # 21

Curran, Philip ADI

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

The abbreviation PFC should be introduced in the text rather than in the figure.

SuggestedRemedy

Change "… among the partial frame count, ..." to "… among the partial frame count (PFC), ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.4.2** *P* **75** *L* **24** # 22

Curran, Philip ADI

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

The figure incorrectly uses the abbreviation PCS rather than PFC.

SuggestedRemedy

Change "Partial Frame Count (PCS)" to "Partial Frame Count (PFC)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.4.2** *P* **76** *L* **18** # 95

Graber, Steffen Pepperl+Fuchs SE

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

Closing bracket at the end of the line should be a normal bracket.

SuggestedRemedy

Change "]" to ")" at the end of the line. Do this also in lines 23 and 30.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.4.2.4** *P* **77** *L* **29** # 23

Curran, Philip ADI

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

The advertisement register bits are specified incorrectly.

SuggestedRemedy

Change "100BASE-T1L advertisement register bits 3.2282.0 and 3.2282.1" to "100BASE-T1L training register bits 3.2297.14 and 3.2297.15".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **77** *L* **40** # 56

Curran, Philip ADI

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

"The CRC16 polynomial (x + 1)(x15 + x + 1) " should use superscripts for the exponents

SuggestedRemedy

NOTE: Scripts may not show up correctly in Excel online. Change the text to "The CRC16 polynomial (x + 1)(x15 + x + 1)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.4.3** *P* **78** *L* **26** # 25

Curran, Philip ADI

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

It would be better to use a fixed width font for the 6-tuples so that the symbols line up correctly.

SuggestedRemedy

Change font in Table 190-8.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.5** *P* **79** *L* **34** # 27

Curran, Philip ADI

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

Clause 190 will handle handle all test modes in 190.5.

SuggestedRemedy

Remove heading 190.3.5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.6** *P* **79** *L* **46** # 96

Graber, Steffen Pepperl+Fuchs SE

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

Should be singular.

SuggestedRemedy

Change "use" to "uses".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.6** *P* **80** *L* **31** # 97

Graber, Steffen Pepperl+Fuchs SE

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

Table 190-9 is referenced on page 79, line 47.

SuggestedRemedy

Remove editorial note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.6.1** *P* **81** *L* # 99

Graber, Steffen Pepperl+Fuchs SE

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

"tx_refresh_active=true" should be "tx_refresh_active = true" to align with the following lines (2 spaces added).

SuggestedRemedy

Change "tx_refresh_active=true" to "tx_refresh_active = true". Do the same in table 190-11.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.6.1** *P* **81** *L* **12** # 98

Graber, Steffen Pepperl+Fuchs SE

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

"of" is missing.

SuggestedRemedy

Change "… beginning any …" to "… beginning of any …". Do the same in line 13.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.6.1** *P* **81** *L* **13** # 30

Curran, Philip ADI

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

Missing "of" in "… at the beginning any multiple ...".

SuggestedRemedy

Change to "… at the beginning of any multiple …".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **81** *L* **48** # 57

Curran, Philip ADI

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

I think the sentence "...setting all of the bits of each transmit octet, Txbn<0:7>, which is shown in figure 190-5 to zero" would be clearer with a comma before "to zero"

SuggestedRemedy

Change the text to "..., which is shown in Figure 190-5, to zero"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **82** *L* **46, 49** # 58

Curran, Philip ADI

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

IDL_R is defined as "The set of characters that may occur between packets", and PKT_R as "The set of characters that may occur within a packet". Strictly that is not correct. /Tp/ occurs between packets, and /Sp/, /Su/ and /Tu/ can occur within a packet.

SuggestedRemedy

Remove line 46 in page 82 "The set of characters that may occur between packets".
In page 82, line 49, remove text "The set of characters that may occur within a packet"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.1.2** *P* **83** *L* **41** # 100

Graber, Steffen Pepperl+Fuchs SE

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

In "tx_mii<2N - 1><0:5>" the lower boundary in the first array dimension is missing.

SuggestedRemedy

Change "tx_mii<2N - 1><0:5>" to "tx_mii<0:(2N - 1)><0:5>".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **83** *L* **41** # 59

Curran, Philip ADI

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

tx_mii<2N - 1><0:5> should be tx_mii<0:(2N - 1)><0:5>

SuggestedRemedy

Change the variable name to "tx_mii<0:(2N - 1)><0:5>"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.1.2** *P* **83** *L* **31, 39** # 32

Curran, Philip ADI

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

The definition of rx_char and tx_coded refer to "(8N)B/(8N+1)B". Elsewhere the + symbol is preceded by and followed by spaces.

SuggestedRemedy

Change to "(8N)B/(8N + 1)B".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.1.2** *P* **84** *L* **3** # 101

Graber, Steffen Pepperl+Fuchs SE

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

RX_LPI and RX_ALERT states are shown in Figure 190-15.

SuggestedRemedy

Change Figure 190-14 to Figure 190-15. Do the same for the reference on page 86, line 28.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.1.2** *P* **84** *L* **12** # 102

Graber, Steffen — Pepperl+Fuchs SE

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

The SNR of the remote PHY is meant.

SuggestedRemedy

Change "to SNR" to "the SNR".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.1.2** *P* **84** *L* **12** # 34

Curran, Philip — ADI

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

Typo at "whether to SNR".

SuggestedRemedy

Change to "whether the SNR".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.1.2** *P* **84** *L* **17** # 35

Curran, Philip — ADI

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

The ".request" is missing in the name of the primitive with base name "PMA_PCS_RX_LPI_STATUS".

SuggestedRemedy

Add ".request".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.1.2** *P* **84** *L* **43** # 36

Curran, Philip — ADI

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

Alert signaling is not listed in the text "sleep, quiet-refresh, or wake signaling".

SuggestedRemedy

Change to "sleep, quiet-refresh, alert, or wake signaling".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **85** *L* **8** # 60

Curran, Philip — ADI

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

The reference to 190.3.2.11 is incorrect

SuggestedRemedy

Change text to "described in 190.3.2.12"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.1.2** *P* **85** *L* **22** # 103

Graber, Steffen — Pepperl+Fuchs SE

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

"rf_valid" variable name is used in state machines.

SuggestedRemedy

Change "rf_valide" to "rf_valid".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.1.2** *P* **85** *L* **22** # 37

Curran, Philip — ADI

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

Typo in the variable name "rf_valide".

SuggestedRemedy

Change to "rf_valid".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.1.5** *P* **86** *L* **15** # 38

Curran, Philip ADI

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

The draft indcates that the counters rfer_cnt and rfrx_cnt are required when EEE is enabled for the link. This is incorrect. These counters are required when RS-FEC is enabled for the link.

SuggestedRemedy

Insert the following before line 15 (before the definition of rfer_cnt):

"The following counters are required when RS-FEC is enabled for the link."

A knock-on effect is that at line 10 the word "counters" needs to change to "counter".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.2** *P* **87** *L* **39** # 39

Curran, Philip ADI

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

Exit condition from TX_WAKE to TX_MII is incorrectly shown as "tx_lpi_active".

SuggestedRemedy

Change condition to "!tx_lpi_active".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.2** *P* **89** *L* **1** # 104

Graber, Steffen Pepperl+Fuchs SE

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

The Receive state diagram is split into Figure 190-14 and Figure 190-15.

SuggestedRemedy

Change "Figure 190-14" to "Figure 190-14 and Figure 190-15".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.2** *P* **89** *L* **22** # 105

Graber, Steffen Pepperl+Fuchs SE

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

"PKT R" should be "PKT_R". "x_char" (see line 27) should be "rx_char".

SuggestedRemedy

Change "PKT R" to "PKT_R" (line 22). Change "x_char" to "rx_char" (line 27).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.7.2** *P* **91** *L* **28** # 106

Graber, Steffen Pepperl+Fuchs SE

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

"rxrx_cnt" should be "rfrx_cnt".

SuggestedRemedy

Change "rxrx_cnt" to "rfrx_cnt". Apply the same change to line 31.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.4** *P* **92** *L* **16** # 88

Graber, Steffen Pepperl+Fuchs SE

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

The PMA Reference diagram is figure 190-17.

SuggestedRemedy

Change reference from figure 190-14 to 190-17.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **92** *L* **16 (17?** # 61

Curran, Philip ADI

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

The reference to Figure 190-14 is incorrect

SuggestedRemedy

Change text to "Figure 190-17"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **93** *L* **1** # 62

Curran, Philip ADI

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

rem_rcvr_status has been renamed rem_flr_rcvr_status, eee_low_snr is missing

SuggestedRemedy

Rename rem_rcvr_status to rem_flr_rcvr_status, add eee_low_snr in Figure 190-17

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **95** *L* **52** # 63

Curran, Philip ADI

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

rem_rcvr_status has been renamed rem_flr_rcvr_status

SuggestedRemedy

Change text to "When the Leader
PHY has trained its receiver and has detected rem_flr_rcvr_status = OK"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.4.8.2** *P* **97** *L* **20** # 40

Curran, Philip ADI

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

Missing opening parenthesis at "wt)" in equation 190-8.

SuggestedRemedy

Change to "w(t)".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.4.8.2** *P* **97** *L* **20** # 91

Graber, Steffen Pepperl+Fuchs SE

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

Should read as "+ w(t)".

SuggestedRemedy

Change "+ wt)" to "+ w(t)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.4.9.1** *P* **98** *L* **36** # 92

Graber, Steffen Pepperl+Fuchs SE

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

"rem_rcvr_status" has been renamed to "rem_flr_rcvr_status". "PMA_REMRXSTATUS" has been renamed to "PMA_REMFLRRXSTATUS".

SuggestedRemedy

Change "rem_rcvr_status" to "rem_flr_rcvr_status". Change "PMA_REMRXSTATUS.request" to "PMA_REMFLRRXSTATUS.request".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **101** *L* **17** # 43

Curran, Philip ADI

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

Typo at "FLASE" in SEND_IDLE_NOT_READY state actions.

SuggestedRemedy

Change to "FALSE".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **22** *SC* **22.2.2.4** *P* **22** *L* **31** # 107

Zimmerman, George APL Group, ADI, Cisco, Marvell, Onsemi, Sony

Comment Type **E** *Comment Status* **D** *Link Fault*

The link fault state diagram in clause 46 appears to be necessary specifically to manage the sequence ordered sets. The use in clause 22 is different and doesn't use sequence ordered sets, so I don't believe a signaling state diagram is needed.

SuggestedRemedy

Delete editor's note at P22 L31

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.7.1.4** *P* **107** *L* **22** # 119

Zimmerman, George — APL Group, ADI, Cisco, Marvell, Onsemi, Sony

Comment Type **T** *Comment Status* **D** *Link Segment*

Balance on unshielded link segments is unspecified. There is considerable interest in deploying 100BASE-T1L on category 6 cabling.

SuggestedRemedy

Insert new paragraph, equation, and figure below Figure 190-25 as follows:
The TCL requirement for unshielded link segments is specified to align with the use of Category 6 cabling components. Each 100BASE-T1L unshielded link segment shall meet the values determined using Equation (190-4) at all frequencies from 1 MHz to 60 MHz.

(Equation 190-4) TCL >= 50-15log10(f) dB 1 <= f <= 60
Where f is the frequency in MHz; 1 <= f <= 60

Equation (190-4) is plotted in Figure 190-26, which is provided for information only.

(include plot as Figure 190-26 100BASE-T1L unshielded link segment TCL)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
TFTD.

Cl **30** *SC* **30** *P* **30** *L* **2** # 108

Zimmerman, George — APL Group, ADI, Cisco, Marvell, Onsemi, Sony

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

Content is needed for clause 30. Speciifically add 100BASE-T1L to: 30.3.2.1.2 aPhyType, 30.3.2.1.3 aPhyTypeList, 30.5.1.1.2 aMAUType, description in 30.5.1.1.4 aMediaAvailable and 30.6.1.1.5 aAutoNegLocalTechnologyAbility

SuggestedRemedy

Add the following to the draft:
30.3.2.1.2 aPHYType
Insert the following new entries in the APPROPRIATE SYNTAX section of 30.3.2.1.2 after the entry for 100BASE-T1:
100BASE-T1L Clause 190 100 Mb/s PAM3

30.3.2.1.3 aPhyTypeList
Insert the following new entries in the APPROPRIATE SYNTAX section of 30.3.2.1.3 after the entry for 100BASE-T1:
100BASE-T1L Clause 190 100 Mb/s PAM3

30.5.1.1.2 aMAUType
Insert the following new entries in the APPROPRIATE SYNTAX section of 30.4.1.1.2 after the entry for 100BASE-T1:
100BASE-T1L Single balanced pair PHY as specified in Clause 190

30.5.1.1.4 aMediaAvailable
Change the fourth sentence of the third paragraph of the BEHAVIOUR DEFINED AS section of 30.5.1.1.4 as shown:
For 10BASE-T1L</UL>, 100BASE-T1L,</UL> and 100BASE-T1, a link_status of OK maps to the enumeration “available”.
(where </UL> indicates where underline begins and ends)

30.6.1.1.5 aAutoNegLocalTechnologyAbility
Insert the following new entries in APPROPRIATE SYNTAX section of 30.6.1.1.5 after the entry for “10BASE-TFD”:
100BASE-T1L 100BASE-T1L as specified in Clause 190

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.6** *P* **103** *L* **44** # 116

Zimmerman, George — APL Group, ADI, Cisco, Marvell, Onsemi, Sony

Comment Type **T** *Comment Status* **D** *New Content*

Text needed for 190.6. Text from clause 146 and 802.3da D2p3 can be adapted.

SuggestedRemedy

Add the following text to 190.6, at P103 L45:
100BASE-T1L uses the management interface as specified in Clause 45. The Clause 45 MDIO register
interface and registers are optional. When the MDIO interface is not implemented, provision of an
equivalent mechanism for the functions specified in connection to the register bits is required.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.6.2** *P* **104** *L* **14** # 117

Zimmerman, George — APL Group, ADI, Cisco, Marvell, Onsemi, Sony

Comment Type **T** *Comment Status* **D** *New Content*

Text needed for LEADER-FOLLOW configuration. Text from clause 146 can be adapted.

SuggestedRemedy

Add the following text to 190.6.2, replacing the editor's note:
LEADER-FOLLOWER assignment for each link configuration is necessary for establishing the timing control of each PHY. In 100BASE-T1L, one PHY should be configured as LEADER and one PHY should be configured as FOLLOWER to operate. In the case where both PHYs are configured to be LEADER or both to be FOLLOWER, operation is undefined.

The LEADER-FOLLOWER configuration between the PHYs is established using the method being described in 98.2.1.2.5 and Table 98–4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.9** *P* **109** *L* **48** # 120

Zimmerman, George — APL Group, ADI, Cisco, Marvell, Onsemi, Sony

Comment Type **T** *Comment Status* **D** *New Content*

Need text for Environmental specifications. Text should be similar to 802.3da and Clause 146

SuggestedRemedy

Insert text in 190.9:(P109 L48)
190.9.1 General safety
Equipment subject to this clause shall conform to the general safety requirements in J.2. An example of an application-specific standard potentially applicable to this clause is IEC 61010-1. All equipment subject to this clause may be additionally required to conform to any applicable local, state, or national standards
190.9.2 Network safety
All cabling and equipment subject to this clause is expected to be mechanically and electrically secure in a professional manner. All 100BASE-T1L cabling is expected to be routed according to any applicable local, state, or national standards considering all relevant safety requirements.
190.9.2.1 Environmental safety
This subclause sets forth a number of recommendations and guidelines related to safety concerns; this list is neither complete nor does it address all possible safety issues. The designer is urged to consult the relevant local, national, and international safety regulations to ensure compliance with the appropriate requirements. Systems described in this subclause are subject to various environmental hazards during their installation and use. In particular, equipment used in automotive and industrial environments can expect to meet the
potential environmental stresses with respect to their mounting location defined for the application. Stresses expected in these environments may include but are not limited to those found in the listed specifications.

The following specifications define potential environmental stresses in an industrial environment:
— Environmental loads: IEC 60529 and ISO 4892
— Mechanical loads: IEC 60068-2-6 and IEC 60068-2-31
— Climatic loads: IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-30, IEC 60068-2-38, IEC 60068-2-52, and IEC 60068-2-78

Additional environment(s) require careful analysis prior to implementation to determine appropriate environmental safety requirements.

190.9.2.2 Electromagnetic compatibility
A system integrating the 100BASE-T1L PHY is expected to comply with all applicable local and national codes for electromagnetic compatibility.

190.9.3 Telephony voltages
The use of building wiring brings with it the possibility of wiring errors that might connect telephony voltages to a DTE. Other than voice signals, the primary voltages that can be encountered are the “battery” and ringing voltages. Although there is no universal standard,

the following maximums generally apply: Battery voltage to a telephone line is generally 56 V dc, applied to the line through a balanced 400 Ω source impedance. Ringing voltage is a composite signal consisting of an ac component and a dc component. The ac component is up to 175 Vp at 20 Hz to 60 Hz with a 100 Ω source resistance. The dc component is 56 V dc with 300 Ω to 600 Ω source resistance. Large reactive transients can occur at the start and end of each ring interval. Care should be taken to avoid such connections as they can damage equipment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Suggested remedy with editorial license. See zimmerman_3dg_02_06252026.pdf for clean text.

Cl **190** *SC* **190.3** *P* **53** *L* **52** # 12

Curran, Philip ADI

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

There is no PCS Data Transmission Enable function. This is handled by the PCS (8N)B/(8N+1)B Transmit state diagram.

SuggestedRemedy

Change text to following:

"The PCS sublayer comprises one PCS Reset function and two simultaneous and asynchronous operating functions. The PCS operating functions are PCS Transmit, and PCS Receive. Both operating functions are started immediately after the successful completion of the PCS Reset function."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3** *P* **54** *L* **8** # 80

Graber, Steffen Pepperl+Fuchs SE

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

PCS Data Transmission Enable function has been integrated in PCS Transmit function.

SuggestedRemedy

Remove block "PCS Data Transmission Enable" from figure 190-4 and connect TX_ER and TX_EN directly with the PCS Transmit function block.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3** *P* **54** *L* **13** # 13

Curran, Philip ADI

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

There is no PCS Data Transmission Enable function. This is handled by the PCS (8N)B/(8N+1)B Transmit state diagram.

SuggestedRemedy

Remove PCS Data Transmission Enable block from Figure 190-4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.2.4** *P* **58** *L* **36** # 83

Graber, Steffen Pepperl+Fuchs SE

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

The PCS Data Transmission Enable State diagram has been removed. Thus variables tx_enable and tx_error are no more generated.

SuggestedRemedy

In Table 190-1 change "tx_enable" to "TX_EN" and "tx_error" to "TX_ER".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **96** *L* **9** # 46

Curran, Philip ADI

Comment Type **T** *Comment Status* **D** *PHY Control*

In relation to the previous 2 comments, it seems that there may be a misapprehension that moving to the LINK_FAIL state immediately causes AN to restart. In fact there is no way for a PHY to cause AN to restart while the link is coming up. The PHY must just wait for the link_fail_inhibit_timer to expire.

I think we should change the text "... PHY Control returns to the LINK_FAIL state and Auto-Negotation restarts" to make this clear.

SuggestedRemedy

Change to following:

"… PHY Control returns to the LINK_FAIL state and waits for the link_fail_inhibit_timer to expire and Auto-Negotation to restart."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Consider after resolution of comments 44 & 45.

Cl **190** *SC* **190.4.9.3** *P* **101** *L* **19** # 93

Graber, Steffen — Pepperl+Fuchs SE

Comment Type **E** *Comment Status* **D** *PHY Control*

Last interim, it has been suggested to add an exit condition to "LINK_FAIL" from both "SEND_IDLE _NOT_READY" and "PAM3_TUNING" state. During the following discussion, the outcome has been, that this should not be implemented, as there is a risk, that for a short time the local receiver status could become unstable, when switching from PAM2 to PAM3 modulation. Adding the two exit conditions would result in a risk, that the link startup sequence fails. As Auto-Negotiation is mandatory, in case the PHY control state machine would get stuck in one of these states, the AN state machine would restart the PHY and thus reset the PHY control state machine.

SuggestedRemedy

Please remove exit condition to "LINK_FAIL" from "SEND_IDLE _NOT_READY" state and "PAM3_TUNING" state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Consider with comments 44 and 45

Cl **00** *SC* **0** *P* **101** *L* **20** # 44

Curran, Philip — ADI

Comment Type **T** *Comment Status* **D** *PHY Control*

The transition from SEND_IDLE_NOT_READY to LINK_FAIL looks like a bad idea. This is the state where the transmit signal switches from PAM2 to PAM3. It is conveivable that there could be a short period after the transition where SNR drops.

There is also no advantage in moving to LINK_FAIL versus remaining in SEND_IDLE_NOT_READY. In either case the PHY will end up waiting for the link_fail_inhibit_timer to expire in the event that something has gone wrong.

SuggestedRemedy

Remove transition from SEND_IDLE_NOT_READY to LINK_FAIL.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **101** *L* **26** # 45

Curran, Philip — ADI

Comment Type **T** *Comment Status* **D** *PHY Control*

The transition from PAM3_TUNING to LINK_FAIL looks like a bad idea. This is the state where the receive signal switches from PAM2 to PAM3. It is conveivable that there could be a short period after the transition where SNR drops. The whole point of the PAM3_TUNING state is to allow for this possibility.

There is also no advantage in moving to LINK_FAIL versus remaining in PAM3_TUNING. In either case the PHY will end up waiting for the link_fail_inhibit_timer to expire in the event that something has gone wrong.

SuggestedRemedy

Remove transition from PAM3_TUNING to LINK_FAIL.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **104** *SC* **104** *P* **37** *L* **4** # 114

Zimmerman, George APL Group, ADI, Cisco, Marvell, Onsemi, Sony

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

Need clause 104 content. Suggest that a new PoDL Type be defined to go with 100BASE-T1L, as the coupling frequencies and MDI return loss will likely be different than for 100BASE-T1 or 10BASE-T1L. Suggest that ripple voltage measurement requirements for Types A & C (100BASE-T1) should be sufficient for 100BASE-T1L.

SuggestedRemedy

Add (with editorial license to align with clause 104 and editing instruction style):
104.1.3 PoDL system types
Insert the following after the last sentence of the second paragraph of 104.1.3 (as part of the same paragraph):
A Type G PSE and Type G PD are compatible with 100BASE-T1L PHYs.

104.4 Power Sourcing Equipment (PSE)
104.4.1 PSE types
Change 104.4.1 as shown:
For PoDL systems there are multiple types of PSEs—Type A, Type B, Type C, Type D, Type E, </SO>and </SO>Type F</UL>, and Type G</UL> consistent with 104.1.3.

104.4.7 PSE output requirements
104.4.7.3 Power feeding ripple and transients
Change the first sentence of the third paragraph of 104.4.7.3 as shown:
When measuring the ripple voltages for a Type A</SO> or</SO></UL>, </UL>Type C</UL>, or Type G</UL> PSE as specified by Table 104–7 item (4b), the voltage observed at the MDI/PI with the differential probe where f1 = 31.8 kHz ± 1% is post-processed with transfer function H_2(f) specified in Equation (104–3) where f_2 = 1 MHz ± 1%.
Change third sentence of the 2nd paragraph of 104.4.7.3 as shown:
When measuring the ripple voltage for a Type A</SO> or</SO></UL>, </UL> Type C</UL>, or Type G</UL> PSE as specified by Table 104-7 item (4a), f_1 = 31.8 kHz ± 1%.

104.5 Powered Device (PD)
104.5.1 PD types
Change 104.5.1 as shown:
For PoDL systems there are six types of PDs—Type A, Type B, Type C, Type D, Type E, </SO>and </SO></UL>, </UL>Type F</UL>, and Type G</UL> consistent with 104.1.3.

104.5.7 PD power
104.5.7.4 PD ripple and transients
Insert the following new last sentence to the second paragraph of 104.5.7.4:
The ripple and transient specifications for a Type G PD shall be met for all operating voltages in the range of V_PD sourced through a dc bias coupling network with MDI return loss as specified by Clause 190 and over the range of P_PD.

Change the third sentence of the third paragraph of 104.5.7.4 as shown:
When measuring the ripple voltage for a Type A </SO>or </SO></UL>, </UL>Type C</UL>, or Type G</UL> PD as specified by Table 104–11 item (3a), f_1 = 31.8 kHz ± 1%.

Change the first sentence of the fourth paragraph of 104.5.7.4 as shown:
When measuring the ripple voltages for a Type A</SO> or</SO></UL>, </UL> Type C</UL>, or Type G</UL> PD as specified by Table 104–11 item (3b), the voltage observed at the MDI/PI with the differential probe where f1 = 31.8 kHz ± 1% shall be post-processed with transfer function H_2(f) specified in Equation (104–3) where f_2 = 1 MHz ± 1%.

(editor to note f_1, f_2, H_2, V_PD, P_PD the "_" indicates the subscripting, and +/- symbols may be corrupted by the comment tool) check text of 104 for accuracy as the only intent is to add Type G)

104.7 Serial communication classification protocol (SCCP)
104.7.2 Serial communication classification protocols
104.7.2.4 Read_Scratchpad function command [0xAA]
(Add Table 104-13 - CLASS_TYPE_INFO register table to the draft, with editing instruction)
Change first row of Table 104-13 as shown (unchanged rows not shown):

Bits	Name	Description					R/W
b[15:12]	Type	15	14	13	12		RO
		1	1	1	0	= Type A	
		1	1	0	1	= Type B	
		1	0	1	1	= Type C	
		0	1	1	1	= Type D	
		1	1	0	0	= Type E	
		0	0	1	1	= Type F	
</UL>		0	0	1	0	= Type G</UL>	

104.9 Protocol implementation conformance statement (PICS) proforma for Clause 104, Power over Data Lines (PoDL) of Single-Pair Ethernet
104.9.3 Major capabilities/options
Change table to add rows for Type G PSE and Type G PD functionality, after rows for Type F PSE and PD functionality, respectively (unchanged rows not shown) as shown:

Item	Feature	Subclause	Value/Comment	Status	Support
*PSETG	Implements PSE Type G functionality	104.1.3	Provides support for requirements of Type G Power Sourcing Equipment	O	Yes[] No[]
....					
*PDTG	Implements PD Type G functionality	104.1.3	Provides support for requirements of Type G Powered Device Equipment	O	Yes[] No[]

104.9.4.3 Powered Device (PD)
Insert new PICS row PD20a after PD20 (Type A or Type C PD ripple and transients) as shown (unchanged rows not shown):

Item	Feature	Subclause	Value/Comment	Status	Support
PD20a	Type G PD ripple and transients	104.1.3	In accordance with specifications shown in Table 104–11 for all operating voltages in the range of V_PD sourced through a dc bias coupling network with MDI return loss as specified by Clause 190, and over the range of P_PD Power Sourcing Equipment	PDTG:M	Yes[] N/A[]

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Adopt proposal, with editorial license. See

zimmerman_3dg_01_062525.pdf for clear text reflecting suggested remedy.

Cl **104** *SC* **104.6.2** *P* **37** *L* **5** # 115

Zimmerman, George APL Group, ADI, Cisco, Marvell, Onsemi, Sony

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

Fault tolerance requirement requires consideration and is unclear at this time.

SuggestedRemedy

Add 104.6.2 Fault tolerance to the draft with Editor's note (to be removed prior to initial Working Group Ballot):
Fault tolerance requirement for 100BASE-T1L needs to be proposed, 10BASE-T1L differed from other BASE-T1 PHYs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
TFTD. Should discuss whether there is consensus to follow 10BASE-T1L or an alternative proposal. Better to avoid adding an editorial note if we have consensus.

Cl **45** *SC* **45.2.1.236a.1** *P* **27** *L* **40** # 1

Curran, Philip ADI

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

The note in 45.2.1.236a.3 indicates that the PMA may take many seconds to recover after exiting from reset or low-power mode. However, the note in 45.2.1.236a.1 does not indicate this.

SuggestedRemedy

Add following to note in 45.2.1.236a.1 :

"The data path of the 100BASE-T1L PMA, depending on implementation, may take many seconds to run at optimum error ratio after exiting from reset."

Change note in 45.2.1.236a.3 to end in the following:

"... after exiting from low-power mode."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **31** *L* **5** # 64

Curran, Philip ADI

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

The paragraph "The control and management interface shall be restored to operation within 0.5 s from setting of bit 3.2295.15" should be changed to 10 ms. The "contorl and management interface" is used in many places in this clause, although it is not defined, and the Clause title is "Management Data Input/Ouput (MDIO) interface". It may be considered to rephase the paragraph.

SuggestedRemedy

Change the text to "The control and management interface shall be restored to operation within 10 ms from setting of bit 3.2295.15".
Alternatively could rephrase it to "The reset process should complete within 10 ms from setting of bit 3.2295.15" or "The MDIO interface shall be restored to operation within 10 ms from setting of bit 3.2295.15"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change text to "The MDIO interface or its equivalent for accessing control and status bits shall be restored to operation within 10 ms from setting of bit 3.2295.15"

Cl **45** *SC* **45.2.3.75c** *P* **32** *L* **9** # 4

Curran, Philip ADI

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

The following sentence does not make sense here:

"The default value for each bit of the 100BASE-T1L training register should be chosen so that the initial state of the device upon power up or reset is a normal operational state without management intervention."

Every combination of values corresponds to a normal operational state.

Furthermore, the draft should specify how to handle bits that correspond to abilities that are not supported.

SuggestedRemedy

Replace this sentence with the following:

"Only bits representing supported abilities can be set. Default values should reflect the supported abilities and the desired operational state in the application. "

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.3.4.2.4** *P* **77** *L* **31** # 24

Curran, Philip ADI

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

The link partner advertisement register bits are specified incorrectly.

SuggestedRemedy

Change sentence as follows:

"The 100BASE-T1L link partner training register bits 3.2298.14 and 3.2298.15 reflect the PHY capability bits communicated by the link partner through the received InfoField (see 190.3.4.2.4). "

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **190** *SC* **190.4.4.1** *P* **95** *L* **21** # 90

Graber, Steffen Pepperl+Fuchs SE

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

The "receive fault" bit has been removed.

SuggestedRemedy

Remove sentence "Mapping of MDIO status variables to PMA status variables is shown in Table 190–13." and table 190-13.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.