Cl **24** *SC* **24.4.1** *P* **49** *L* **53** # 1

Dawe, Piers Avago Technologies

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

Saying '100BASE-X supports Low Power Idle mode when the Energy Efficient Ethernet is implemented' could be interpreted to mean that the EEE implementation within 100BASE-X can vary with time (i.e. in every case can be switched on and off). But it's optional.

SuggestedRemedy

Change 'when' to 'if'. If the EEE feature can be switched on and off, say 'if the Energy Efficient Ethernet is implemented and enabled.' or 'if the Energy Efficient Ethernet is implemented and Low Power Idle mode is enabled.'

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.4.1** *P* **36** *L* **53** # 2

Dawe, Piers Avago Technologies

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

Interpreting and generating EEE MII opcodes would be optional like the rest of EEE.

SuggestedRemedy

Change 'Interpret and generate MII opcodes to optionally enable or disable the Low power Idle mode.' to 'Optionally, interpret and generate MII opcodes to enable or disable the Low Power Idle mode.'

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.3** *P* **54** *L* **19** # 3

Dawe, Piers Avago Technologies

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

Don't say 'subclause'

SuggestedRemedy

Change to 'see', twice. Also, I think there should be no space in PMD_RXQUIET.request (rx_quiet); should be PMD_RXQUIET.request(rx_quiet)

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.3** *P* **54** *L* **53** # 4

Dawe, Piers Avago Technologies

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

Untidy table wasting space

SuggestedRemedy

Make the table full width

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.1.1** *P* **6** *L* **16** # 5

Dawe, Piers Avago Technologies

Comment Type **TR** *Comment Status* **X**

Page and line numbers in P802.3ayD2.3.
Want to mention the optional EEE functionality in 35.1.1 Summary of major concepts.

SuggestedRemedy

Per comment. State that this option is for use only with 1000BASE-KX.

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.2.1** *P* **65** *L* **14** # 6

Dawe, Piers Avago Technologies

Comment Type **TR** *Comment Status* **X**

Need to be clear that this is optional.

SuggestedRemedy

Change 'The mapping changes slightly when Low Power Idle signaling is in operation.' to 'If the optional Low Power Idle signaling feature is implemented, the mapping changes slightly when Low Power Idle signaling is in operation.'

Proposed Response *Response Status* **O**

Cl **36** *SC* **36.2.4.7** *P* **40** *L* **43** # 7

Dawe, Piers Avago Technologies

Comment Type **TR** *Comment Status* **X**

Page and line numbers in P802.3ayD2.3.
Need to make clear that the new codings in Table 36-3 are optional and of restricted application.

SuggestedRemedy

Add sentence: 'The ability to transmit or receive /LI/, /LI1/ and /LI1/ is an option, to support an option of 10GBASE-KX4 only.'

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.1.4** *P* **76** *L* **45** # 8

Dawe, Piers Avago Technologies

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

j) Ability to signal...

SuggestedRemedy

j) Optionally, ability to signal... ?

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.15a.1** *P* **99** *L* **49** # 9

Dawe, Piers Avago Technologies

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

Consistent spelling

SuggestedRemedy

To align with base document, change 'advertized' to 'advertised', 'advertizes' to 'advertises'. Two more in Clause 69.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.31** *P* **46** *L* **47** # 10

Dawe, Piers Avago Technologies

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

Multi-Word

SuggestedRemedy

Multi-word

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1** *P* **37** *L* **41** # 11

Dawe, Piers Avago Technologies

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

P802.3ba is providing a very welcome third column in Table 45-3, called 'Clause', with clickable entries giving the subclause for each register.

SuggestedRemedy

Please do the same.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.6** *P* **38** *L* **29** # 12

Dawe, Piers Avago Technologies

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

Missing subclause heading

SuggestedRemedy

Insert the heading for 45.2.1.6, which contains Table 45-7. Check for any other missing headings.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.6** *P* **39** *L* **9** # 13

Dawe, Piers Avago Technologies

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

Pre-existing entries all say '... PMA/PMD type'. As the table title is PMA/PMD control 2 register bit definitions and the entries are grouped as 'PMA/PMD type selection' this seems superfluous, but one should be consistent.

SuggestedRemedy

To remove the clutter, strike out 'PMA/PMD type selection' from all the pre-existing entries.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3** *P* **43** *L* **8** # 14

Dawe, Piers Avago Technologies

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

Table too narrow for the new contents

SuggestedRemedy

Resize column widths to contents

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **1** *L* **56** # 15

Dawe, Piers Avago Technologies

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

A bug has crept into the Frame template: page numbers are too low, won't print on some printers, and 2 lines lower than in published 802.3.

SuggestedRemedy

Remove (at least) one line-feed in each of left and right page footers

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **17** *L* **21** # 16

Dawe, Piers Avago Technologies

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

Jitter definitions are a can of worms, and things have moved on since TP-PMD. There are more up-to-date 8B/10B oriented definitions in FC-PI-4 but we for Clause 1, would have to check that we do have definitions which are acceptable for 8B/10B (e.g. Gigabit Ethernet), 64B/66B (10GE) and TP-PMD.

SuggestedRemedy

If you do decide to pull TP-PMD into 802.3, please contact me.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **18** *L* **26** # 17

Dawe, Piers Avago Technologies

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

re 'Baseline Wander' There is no quantitative definition of this in TP-PMD, nor in Section 4 of 802.3

SuggestedRemedy

Change to 'baseline wander'. Similarly emitter coupled logic, non return to zero.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.5** *P* **18** *L* **34** # 18

Dawe, Piers Avago Technologies

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

Containing the growing clause title length, and as the medium isn't baseband (it's just a wire, it doesn't know; it's the modulation scheme that's baseband)

SuggestedRemedy

Delete 'baseband' before medium.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.3** *P* **16** *L* **44** # 19
Dawe, Piers Avago Technologies

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

Does ISO/IEC 9314-10 exist? I understand the FCD was withdrawn in 2005.

SuggestedRemedy

If there is no ISO/IEC 9314-10, don't delete the ANSI reference

Proposed Response *Response Status* **O**

Cl **14** *SC* **14.1.1** *P* **20** *L* **19** # 20
Dawe, Piers Avago Technologies

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

I thought it had been decided not to maintain 'ISO/IEC 8802-3 LAN International Standard'. Anyway, a document referring to itself as 'International Standard' is posturing.

SuggestedRemedy

Change
'The relationship of this clause to the entire ISO/IEC 8802-3 LAN International Standard is shown in Figure 14-1.'
to
'Figure 14-1 shows the relationship of the 10BASE-T or 10BASE-Te PMA, MDI and medium (shown shaded) with other sublayers, to the ISO/IEC Open System Interconnection (OSI) reference model.'

Proposed Response *Response Status* **O**

Cl **14** *SC* **14.1.1** *P* **20** *L* **16** # 21
Dawe, Piers Avago Technologies

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

The layer diagram could be improved. If you change it...

SuggestedRemedy

Change the 7-point material to 8 point.
Change the ALL CAPS to normal upper and lower case.
Move 'Higher layers' down so that it doesn't make 'LAN CSMA/CD layers' look like more layers in the stack. Suggest putting 'OSI reference model layers' and 'LAN CSMA/CD layers' at the same level, underlined, to show they are headings for the stacks not layers in the stacks.

Proposed Response *Response Status* **O**

Cl **14** *SC* **14.3.1.2** *P* **23** *L* **3** # 22
Dawe, Piers Avago Technologies

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

Shouldn't use colour in 802.3

SuggestedRemedy

Change all the blue to black

Proposed Response *Response Status* **O**

Cl **14** *SC* **14.9** *P* **28** *L* **1** # 23
Dawe, Piers Avago Technologies

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

PICS is 14.10

SuggestedRemedy

Change 14.9 to 14.10, several times

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.2.7** *P* **32** *L* **10** # 24
Dawe, Piers Avago Technologies

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

re 'driving the value <1110> onto...' On the page before and in the table below you don't use < >

SuggestedRemedy

Change to 'driving the value 1110 onto...' Similarly on line 14, and in 35.2.2.7.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.6** *P* **37** *L* **27** # 25
Dawe, Piers Avago Technologies

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

Figure 24-4 has much dashed material but I did not see a statement of what it means.

SuggestedRemedy

Add a sentence here; maybe 'Functionality for Far-End Fault Indication and Low Power Idle is shown dashed.'

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.6** *P* **38** *L* **8** # 26
Dawe, Piers Avago Technologies

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

There is no function or process called 'CARRIER SENSE' but there is one called 'Carrier Sense'.

SuggestedRemedy

Change 'CARRIER SENSE' to 'Carrier Sense'. Similarly with all the boxes (except TX RX PCS PMA PMD). Similarly Fig 40-3, 40-4, 40-5, 40-14, 55-3, 55-4, 55-5, 55-17.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.4.1** *P* **49** *L* **53** # 27
Dawe, Piers Avago Technologies

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

New material should be underlined

SuggestedRemedy

Underline item c. Also in Table 35-2, 'Assert low power idle'.

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.1.7** *P* **103** *L* **13** # 28
Dawe, Piers Avago Technologies

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

'deswcribed': this isn't what the base document says!

SuggestedRemedy

described

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.1.1** *P* **190** *L* **16** # 29
Dawe, Piers Avago Technologies

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

Page and line number of P802.3ayD2.3
Bullet e says 'The RS generates continuous data or control characters on the transmit path and expects continuous data or control characters on the receive path.' If EEE, is it still continuous? Need a mention of the EEE option somewhere in this list, anyway.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.3.1.2** *P* **104** *L* **3** # 30
Dawe, Piers Avago Technologies

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

Can tidy up the table

SuggestedRemedy

Resize column widths to contents, making the table full width. Also Table 46-4.

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.3.2.2** *P* **106** *L* **52** # 31

Dawe, Piers Avago Technologies

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

Because there is now a 'basic frame' (as distinguished from an 'envelope frame') and this diagram should work for envelope frames too, it needs a better title. In P802.3ba we have used 'Frame reception without error'

SuggestedRemedy

Change 'Basic frame reception' to 'Frame reception without error'

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.3.2.2** *P* **106** *L* **38** # 32

Dawe, Piers Avago Technologies

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

Where RXC<3:0> is 0xF (all ones) no RXC line can be low. When it's 0x0, no RXC line can be high.

SuggestedRemedy

Remove the low lines at either end of the RXC<3:0> composite trace, remove the high line during 'frame data'.

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.3.1.2** *P* **104** *L* **20** # 33

Dawe, Piers Avago Technologies

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

I believe there is a small bug in one of these tables. It may be this: the PLS_DATA.indication parameter for Start is shown as 'No applicable parameter, first eight ZERO, ONE of a frame (a preamble octet). But we know what a preamble octet is.

SuggestedRemedy

Should the PLS_DATA.indication parameter for Start be 10101010 (binary)? Similarly in Table 46-4.

Proposed Response *Response Status* **O**

Cl **48** *SC* **48.2.3** *P* **232** *L* **35** # 34

Dawe, Piers Avago Technologies

Comment Type **TR** *Comment Status* **X**

Page and line numbers in P802.3ayD2.3.
Need to make clear that the new codings in Table 48-2 and Table 48-3 are optional.

SuggestedRemedy

Add sentence after 'is specified in Table 48–3.':
The ability to transmit or receive Low Power Idle is an option, to support an option of 1000BASE-KX only.'

Proposed Response *Response Status* **O**

Cl **49** *SC* **49.2.4.4** *P* **268** *L* **11** # 35

Dawe, Piers Avago Technologies

Comment Type **TR** *Comment Status* **X**

Page and line numbers in P802.3ayD2.3.
Need to make clear that the new codings in Table 49-1 are optional.

SuggestedRemedy

Add sentences after 'The control characters and their mappings to 10GBASE-R control codes and XGMII control codes are specified in Table 49–1. All XGMII and 10GBASE-R control code values that do not appear in the table shall not
be transmitted and shall be treated as an error if received.':
The ability to transmit or receive Low Power Idle is an option, to support an option of 10GBASE-KR only.' If this option is not supported or not enabled, Low Power Idle shall not be transmitted and shall be treated as an error if received.' Add PICS to support the shalls.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.4** *P* **132** *L* **133** # 36

Dawe, Piers Avago Technologies

Comment Type **ER** *Comment Status* **X**

6.5 point text! The minimum per style manual is 8 point.

SuggestedRemedy

Change all text in this figure and Fig 55-8 to 8 point. You can put the second and third boxes beside each other if you run out of height.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.6.1.2** *P* **146** *L* **1** # 37
Dawe, Piers Avago Technologies

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

Wrong table number, no subclause heading. Table is too long.

SuggestedRemedy

Insert '55.6.1.2 10GBASE-T Auto-Negotiation page use'.
Change 'Table 55-10' to 'Table 55-11'.
Resize column widths to contents.

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.4** *P* **151** *L* **9** # 38
Dawe, Piers Avago Technologies

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

manditory

SuggestedRemedy

mandatory Also 70.6.5, 71.6.6

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.10.2** *P* **152** *L* **19** # 39
Dawe, Piers Avago Technologies

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

usec, msec

SuggestedRemedy

us, ms (and use a mu not a u). At least four tables.

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.1** *P* **149** *L* **18** # 40
Dawe, Piers Avago Technologies

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

Table too narrow. Frame won't take the table notes into account when sizing columns

SuggestedRemedy

Make the table wider so that the table note takes just two lines. Also Table 71-1, 72-1.
Also make Table 72-1 wider

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.7.4.2** *P* **184** *L* **30** # 41
Dawe, Piers Avago Technologies

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

FS12 Status O

SuggestedRemedy

FS12 Status LPI:M ? Also CF43 and following

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.3.3** *P* **193** *L* **36** # 42
Dawe, Piers Avago Technologies

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

bit <0> ... bit <1>

SuggestedRemedy

bit 0 ... bit 1

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Intended for av

Cl **99** *SC* **99** *P* **1** *L* **2** # 43

Dawe, Piers Avago Technologies

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

Amendement

SuggestedRemedy

Amendment
Also at line 30, change 'a amendement' to 'an amendment'
At line 30, extra comma 'clause, Clause 78, which'
Broken link 'Clause 78'
Line 22, too many capitals:
Media Access Control parameters, Physical Layers and management parameters for Energy-Efficient Ethernet

Proposed Response *Response Status* **O**

Cl **99** *SC* **99** *P* **3** *L* **8** # 44

Dawe, Piers Avago Technologies

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

conciously

SuggestedRemedy

consciously
At line 10, consecuively s/b consecutively
Line 40, 802.3az-2008 is too optimistic

Proposed Response *Response Status* **O**

Cl **99** *SC* **99** *P* **5** *L* **5** # 45

Dawe, Piers Avago Technologies

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

.Section

SuggestedRemedy

Section
Line 12, Gb/s split over a line break. There's a Frame option to stop this.
Line 18, change 'of the IEEE Std 802.3 standard with' to 'of IEEE Std 802.3 with'
Line 24, change 'operation point-to-multipoint' to 'operation on point-to-multipoint'

Proposed Response *Response Status* **O**

Cl **99** *SC* **99** *P* **11** *L* **49** # 46

Dawe, Piers Avago Technologies

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

There is a newer version of this page

SuggestedRemedy

Ask P802.3av for it

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.4.11.5** *P* **60** *L* **19** # 47

Healey, Adam LSI Corporation

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

The wake time for the 100BASE-TX receiver is dependent on the time required to activate the far-end transmitter. Furthermore, the receiver should have some assurance of a compliant input signal upon which to base timing recovery and adaptive equalization. Neither of these aspects of transmitter behavior are currently defined in the draft.

SuggestedRemedy

Specify that the transmitter:
1. Shall deliver a signal that will assert signal detect within TBD1 us following transmitter activation
2. Shall deliver a fully compliant 100BASE-TX signal within within TBD2 (> TBD1) us following transmitter activation

Proposed Response *Response Status* **O**

Cl **28C** *SC* **28C.12** *P* **196** *L* **41** # 48

Healey, Adam LSI Corporation

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

I'm not sure where to anchor this comment, but Annex 28D should also be amended to outline extensions of Clause 28 for Energy Efficient Ethernet and I propose that Clause 28 extensions for EEE include:

1. Auto-Negotiation is mandatory for a EEE PHY (this is currently not the case for 100BASE-TX)
2. The exchange of additional next pages for EEE capability and mode negotiation extends the time required to complete Auto-Negotiation. To reduce this time, a EEE PHY may use the extended next page mechanism introduced by IEEE 802.3an-2006 (it is not currently an option for 100BASE-TX).

SuggestedRemedy

Add amendment to Annex 28D per comment.

Proposed Response *Response Status* **O**

Cl **36** *SC* **36.2.4.8** *P* **72** *L* **25** # 49

Healey, Adam LSI Corporation

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

Table 36-3, by itself, does not adequately describe the low power idle encoding process. Per the PCS transmit ordered_set state diagram (Figure 36-5), TX_EN = FALSE is encoded as /I/, regardless of TX_ER and TXD<7:0>.

SuggestedRemedy

Modify the PCS transmit ordered_set state diagram (Figure 36-5) and PCS transmit code-group state diagram (Figure 36–6) to clearly define /LI/ encoding, mark the modifications as optional, and define new state variables as appropriate.

Proposed Response *Response Status* **O**

Cl **36** *SC* **36.2.4.8** *P* **72** *L* **25** # 50

Healey, Adam LSI Corporation

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

Table 36-3, by itself, does not adequately describe the low power idle decoding process. Per the PCS receive state diagram (Figures 36–7a and 36-7b), /LI/ would be decoded as RX_DV = FALSE and RX_ER = FALSE (e.g. normal inter-frame).

SuggestedRemedy

Modify the PCS receive state diagram (Figures 36–7a and 36-7b) to clearly define /LI/ decoding, mark the modifications as optional, and define new state variables as appropriate.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.1.3** *P* **75** *L* **1** # 51

Healey, Adam LSI Corporation

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

Referring to Figure 40-3, since Energy Efficient Ethernet is an optional feature, clearly highlight optional functions and signals using dashed lines and add a note below the figure indicating that dashed lines denote optional features.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.2.2** *P* **78** *L* **1** # 52

Healey, Adam LSI Corporation

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

Referring to Figure 40-4, since Energy Efficient Ethernet is an optional feature, clearly highlight optional primitives using dashed lines and add a note below the figure indicating that dashed lines denote optional features.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.2.2** *P* **79** *L* **5** # 53

Healey, Adam LSI Corporation

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

Correct indentation for the definition of primitive values for this and all following EEE-related primitives.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.3** *P* **81** *L* **1** # 54

Healey, Adam LSI Corporation

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

Referring to Figure 40-5, since Energy Efficient Ethernet is an optional feature, clearly highlight optional functions and signals using dashed lines and add a note below the figure indicating that dashed lines denote optional features.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.3.1.3.4** *P* **82** *L* **8** # 55

Healey, Adam LSI Corporation

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

In the PHY Control state diagram, as proposed for Energy Efficient 1000BASE-T, it is possible that loc_rcvr_status = OK while SEND_Z is asserted. Unless the definition of Sdn[2] is modified, channel C may not send zero as desired.

SuggestedRemedy

Modify defintion of Sdn[2] to read:

Sdn[2] = Scn[2]^TXDn[2] if (tx_enablen-2=1)
Scn[1]^1 else if (loc_rcvr_status=OK) * (tx_mode!=SEND_Z)
Scn[2] else

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.3.4** *P* **83** *L* **2** # 56

Healey, Adam LSI Corporation

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

Referring to Figure 40-10a, since Energy Efficient Ethernet is an optional feature, clearly highlight optional states and transitions by encapsulating the LP_IDLE state and associated transitions in the dashed box labeled "optional implementation."

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.2** *P* **85** *L* **8** # 57

Healey, Adam LSI Corporation

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

Referring to Figure 40-14, since Energy Efficient Ethernet is an optional feature, clearly highlight optional functions and signals using dashed lines and add a note below the figure indicating that dashed lines denote optional features.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2.3a** *P* **96** *L* **51** # 58

Healey, Adam LSI Corporation

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

What does it mean to have the transmit PMA/PMD "receive" low power idle signaling? Is it supposed to interpret the code-groups (or data-groups or symb_vectors or...) received from the transmit PCS, or is it based on the assertion of some status flag by the PCS? Assuming there is no breakdown in the communication between the PCS and PMA, it seems it would be cleaner to associate this bit with the PCS.

SuggestedRemedy

Clarify the definition of this bit or relocate accordingly.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.15a** *P* **99** *L* **18** # 59

Healey, Adam LSI Corporation

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

EEE mode control register, 7.62, includes R/W bits that a management entity may use to request modes of operation from the link partner. However, no register is maintained that reflects whether or not the local device actually supports a given mode.

I understand that these control are only placeholders, but for example bit 7.62.4 is used to request 10GBASE-KR reduced energy refresh. There is no bit in the management register space that tells the management entity that the local device actually supports reduced energy refresh.

SuggestedRemedy

Define EEE capabilities register with contents corresponding the modes in 7.62. All bits in this register are RO, and will reflect the capabilities of the local device.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2.1b** *P* **96** *L* **38** # 60

Healey, Adam LSI Corporation

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

What does it mean for the Rx PMA/PMD to "receive" LP idle? The LP idle signal is decoded by the Rx PCS. Presumably, the PCS indicates to the PMA/PMD that the loss of signal it is about to experience is related to quiet-refresh cycling and not a loss of link. Furthermore, in 1000BASE-T, it is possible to receive and LP idle signal without quiet-refresh cycling. For these reasons, it seems cleaner to associate this bit with the Rx PCS.

SuggestedRemedy

Clarify the definition of this bit or relocate accordingly.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2.3a** *P* **97** *L* **3** # 61

Healey, Adam LSI Corporation

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

What does it mean for the Rx PMA/PMD to "receive" LP idle? The LP idle signal is decoded by the Rx PCS. Presumably, the PCS indicates to the PMA/PMD that the loss of signal it is about to experience is related to quiet-refresh cycling and not a loss of link. Furthermore, in 1000BASE-T, it is possible to receive and LP idle signal without quiet-refresh cycling. For these reasons, it seems cleaner to associate this bit with the Rx PCS.

SuggestedRemedy

Clarify the definition of this bit or relocate accordingly.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.15a.1** *P* **99** *L* **48** # 62

Healey, Adam LSI Corporation

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

Regarding the 1000BASE-T wakeup time advertisement...

Based on the premise that longer wake time corresponds to additional power savings (e.g. PHY layer circuitry may be put into a deeper sleep state) and there will exist applications that do not require a wake time as fast as 16 us, there is an advantage to increasing the upper bound on the advertised wake time.

Also, based on the premise that management may manipulate the advertised wake time to be larger than the minimum value supported by the PHY, this mechanism does not allow the local device to indicate that it supports a faster wake time than advertised. Consider a local device that has prioritized power savings and therefore advertises a slower wake time than the PHY can support but would be able to support the faster wake time if necessary. A link partner with an application that requires lower latency, and requests a faster wake time, may not be able to arbitrate a suitable wake time with the local device despite the fact the local device actually supports the desired wake time.

SuggestedRemedy

Proposal for modified 1000BASE-T wake time negotiation to be presented to the Task Force (tentative name healey_01_1108.pdf).

Proposed Response *Response Status* **O**

Cl **48** *SC* **48.2.4.2** *P* **110** *L* **18** # 63

Healey, Adam LSI Corporation

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

"Low Power Idle is indicated by inserting /D20.5/ randomly in one column of each row during ||I||."

A /D20.5/ code-group is randomly inserted into one LANE of each ||K|| or ||R|| COLUMN. ||I|| also includes the align column ||A||, and inserting /D20.5/ into an ||A|| will result in repeated deskew_error indications and eventually loss of alignment indication (align_status = FAIL).

SuggestedRemedy

Correct definition per comment.

Proposed Response *Response Status* **O**

Cl **48** *SC* **48.2.4.2** *P* **108** *L* **39** # 64

Healey, Adam LSI Corporation

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

The text in 48.2.4.2 and Table 48-2 do not adequately describe the low power idle encoding process. The normative transmit process is defined in 48.2.6.2.1 and the PCS transmit source state diagram (Figure 48-6). Per Figure 48-6, I believe Low Power Idle would be encoded as K30.7 (Invalid XGMII character) which contrary to the definition in this subclause.

SuggestedRemedy

Modify the PCS transmit source state diagram (Figure 48-6) to clearly define Low Power Idle encoding, mark the modifications as optional, and define new state variables as appropriate.

Proposed Response *Response Status* **O**

Cl **48** *SC* **48.2.4.2** *P* **108** *L* **39** # 65

Healey, Adam LSI Corporation

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

The text in 48.2.4.2 and Table 48-2 do not adequately describe the low power idle decoding process. The normative receive process is defined in 48.2.6.2.4 and the PCS receive state diagram (Figure 48-9). Per Figure 48-9, I believe Low Power Idle would be decoded as K30.7 (Invalid XGMII character) which contrary to the definition in this subclause.

SuggestedRemedy

Modify the PCS receive state diagram (Figure 48-9) to clearly define Low Power Idle decoding, mark the modifications as optional, and define new state variables as appropriate.

Proposed Response *Response Status* **O**

Cl **48** *SC* **48.2.4.2** *P* **110** *L* **18** # 66

Healey, Adam LSI Corporation

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

How does a user of the standard know if the implementation meets the requirement of randomness?

SuggestedRemedy

Rigorously define the desired progression of /D20.5/ code-group insertion for each successive column.

Proposed Response *Response Status* **O**

Cl **49** *SC* **49.2.4.7** *P* **111** *L* **45** # 67

Healey, Adam LSI Corporation

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

In Table 49-1, the possible 8B/10B codes for Low Power Idle include /D20.5/.

SuggestedRemedy

Add /D20.5/ to the list with reference to 48.2.4.2.

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.1** *P* **149** *L* **33** # 68
Healey, Adam LSI Corporation

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

It seems like "deactivates transmit" should be "deactivates transmit functions."

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.3a** *P* **149** *L* **47** # 69
Healey, Adam LSI Corporation

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

I believe the feature in question is actually "Energy Efficient Ethernet" and not "Low Power Idle."

SuggestedRemedy

Update text per comment.

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.10.5.2** *P* **155** *L* **6** # 70
Healey, Adam LSI Corporation

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

Clause 70 defines 1000BASE-KX PMD sub-layer but the LPI Transmit state diagram (Figure 70-1) includes PCS layer functions such as low power idle encoding. The definition of these functions is misplaced and should be properly described in Clause 36 (the subject of a different comment). The functions defined in this clause should be limited in scope to the PMD-level functions. PCS state information required to the implement PMD functions, and vice versa, should be communicated to the PMD using service interface primitives.

It is imperative to preserve the IEEE 802.3 layering model. In the future, it is likely that additional 1000BASE-X PMDs will be amended to support EEE. It is wasteful to repeat the definition of the PCS low power idle encoding for each PMD, and potentially disasterous if the definitions are inconsistent.

SuggestedRemedy

A proposal will be made to the Task Force illustrating the layer model and modifications required to adhere to the layer model (tentatively named healey_02_1108.pdf).

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.10.5.2** *P* **156** *L* **1** # 71
Healey, Adam LSI Corporation

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

Clause 70 defines 1000BASE-KX PMD sub-layer but the LPI Receive state diagram (Figure 70-2) includes PCS layer functions such as low power idle decoding. The definition of these functions is misplaced and should be properly described in Clause 36 (the subject of a different comment). The functions defined in this clause should be limited in scope to the PMD-level functions. PCS state information required to the implement PMD functions, and vice versa, should be communicated to the PMD using service interface primitives.

It is imperative to preserve the IEEE 802.3 layering model. In the future, it is likely that additional 1000BASE-X PMDs will be amended to support EEE. It is wasteful to repeat the definition of the PCS low power idle encoding for each PMD, and potentially disasterous if the definitions are inconsistent.

SuggestedRemedy

A proposal will be made to the Task Force illustrating the layer model and modifications required to adhere to the layer model (tentatively named healey_02_1108.pdf).

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.10.2** *P* **152** *L* **19** # 72
Healey, Adam LSI Corporation

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

T_WL does not appear to be used.

SuggestedRemedy

Delete the parameter definition.

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.10.2** *P* **152** *L* **9** # 73
Healey, Adam LSI Corporation

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

Define a minimum value for T_SL. Obviously, T_SL = 0 is not acceptable.

SuggestedRemedy

Specify the minimum value of T_SL. As a placeholder, suggest T_SL(min.) = 64 us for a greater than +/-10% tolerance. All timer values should be subject to further review.

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.10.2** *P* **152** *L* **16** # 74

Healey, Adam LSI Corporation

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

Define a minimum value for T_UL. Obviously, T_UL = 0 is not acceptable.

SuggestedRemedy

Specify the minimum value of T_UL. As a placeholder, suggest T_UL(min.) = 160 us for a greater than +/-10% tolerance. All timer values should be subject to further review.

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.10.3** *P* **152** *L* **32** # 75

Healey, Adam LSI Corporation

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

I do not understand the purpose of T_SR. The receiver SLEEP period ends when the transmitter ceases transmission.

SuggestedRemedy

Delete the parameter definition, delete associated state variables, and delete it as a transition condition from the RX_SLEEP state (Figure 70-2).

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.10.3** *P* **152** *L* **41** # 76

Healey, Adam LSI Corporation

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

T_UR does not appear to be used.

SuggestedRemedy

Delete the parameter definition.

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.4a** *P* **151** *L* **25** # 77

Healey, Adam LSI Corporation

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

Referring to Table 39-1, the term "signal_detect assertion threshold" is not used hence the reference is ambiguous. In addition, "signal_detect deassertion threshold" is not a term used in Table 39-1 and constitutes another ambiguous reference. Finally, Table 39-1 defines what one might interpret to be the thresholds in terms of the 1000BASE-CX minimum differential sensitivity which has no comparable value in 1000BASE-KX. Should the -CX value be used?

The cross-reference to Table 39-1 does not appear to be adding any useful information. Define the signal_detect assertion and de-assertion criteria for Energy Efficient Ethernet directly in 70.6.4a.

SuggestedRemedy

Remove cross reference to Table 39-1 and specify the assertion/de-assertion criteria in this subclause.

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.5** *P* **151** *L* **36** # 78

Healey, Adam LSI Corporation

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

The wake-up time for the 1000BASE-KX receiver is dependent on the time required to activate the far-end transmitter. Furthermore, the receiver should have some assurance of a compliant input signal upon which to base timing recovery and adaptive equalization (if included). Neither of these aspects of transmitter behavior are currently defined in the draft.

SuggestedRemedy

Specify that the transmitter:
1. Shall deliver a signal that will assert signal detect within TBD1 us following transmitter activation
2. Shall deliver a fully compliant 1000BASE-KX signal within within TBD2 (> TBD1) us following transmitter activation

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.5.1** *P* **86** *L* **44** # 79

Healey, Adam LSI Corporation

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

It should be stated that when the optional Energy Efficient Ethernet feature is not implemented, loc_lpi_req and rem_lpi_req are FALSE and, as a consequence, lpi_mode is OFF. This will prohibit transition into the optional LP_IDLE state in the PCS Receive state diagram, part a (Figure 40–10a), into the optional PHY Control state diagram, part b (Figure 40–15b), and obviate the need for the optional PCS Local LPI Request state diagram (Figure 40–9).

Similar conditions should be applied when the Energy Efficient Ethernet feature is disabled by management.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.5.2** *P* **87** *L* **25** # 80

Healey, Adam LSI Corporation

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

Expanding the range of lpi_quiet_timer to at least +/-10% would broaden implementation choice without adversely affecting quiet-refresh cycling behavior.

SuggestedRemedy

Change lpi_quiet_timer range to 20 to 24 ms.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.5.2** *P* **88** *L* **31** # 81

Healey, Adam LSI Corporation

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

Per the current Energy Efficient Ethernet PHY Control state diagram, it is possible that the MASTER will be required to decode rem_lpi_req from the SLAVE while the SLAVE is receiving zeros from the MASTER (e.g. the timing loop is broken).

This scenario would occur when the MASTER's lpi_update_timer expires and the MASTER transitions to WAIT_QUIET, transmitting zeros to the SLAVE while the SLAVE is still in the UPDATE state. Prior to the SLAVE detecting zeros from the MASTER, it chooses to exit low power idle. The MASTER will need to detect the SLAVE's rem_lpi_req = FALSE with the timing loop open.

Since the timing loop will be open for a very short period of time, this is likely not an issue. However a very simple change to lpi_update_timer can eliminate this corner case.

The change would make the duration of MASTER lpi_update_timer longer than the SLAVE lpi_update_timer. This ensures that the SLAVE always enters WAIT_QUIET before the MASTER, and hence maintains timing. In addition, it has negligible impact on the total refresh time since the SLAVE transition to WAIT_QUIET will force the MASTER to transition to WAIT_QUIET.

SuggestedRemedy

Define that the duration of lpi_update_timer for the SLAVE is 0.18 to 0.2 ms and duration of lpi_update_timer for the MASTER is 0.23 to 0.25 ms.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.5.1** *P* **87** *L* **15** # 82

Healey, Adam LSI Corporation

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

The criteria of the assertion and de-assertion of signal_detect and the corresponding maximum assertion and de-assertion must be define to ensure inter-operability.

SuggestedRemedy

Proposal to be presented to the Task Force (tentative name healey_01_1108.pdf).

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.5.1** *P* **86** *L* **40** # 83

Healey, Adam LSI Corporation

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

There may be ambiguity regarding the definition of scr_status with the addition of the signal_detect function for Energy Efficient Ethernet. To ensure correct interpretation of the operation of the state diagram, such ambiguity should be removed.

Per the current definition of scr_status, it may assume one of the following two values:
OK: The descrambler has achieved synchronization.
NOT_OK: The descrambler is not synchronized.

It seems to follow that once you have determined there is no input signal (e.g. signal_detect = FALSE), the scrambler cannot be synchronized.

SuggestedRemedy

Specify that, for Energy Efficient Ethernet, when signal_detect = FALSE, scr_status must be set to NOT_OK.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.2.4** *P* **86** *L* **24** # 84

Healey, Adam LSI Corporation

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

The abbreviated state names may bias the perception of the function of each state in a manner that was not intended. Additional text may be provided to 40.4.2.4 to guide a user of the standard and reduce the possibility of misunderstanding that could lead to interoperability issues.

A key issue in question is whether the adaptive filter coefficients should be updated during the WAKE_TRAINING state. The intended behavior was to have the filter coefficients adapted during the UPDATE state per the current text in Draft 1.0.

"If both PHYs continue to request low power operation, then both PHYs remain in the UPDATE state and continue to transmit for time defined by lpi_update_timer. This time is intended to allow the remote PHY to refresh its receiver state (e.g. timing recovery, adaptive filter coefficients) and thereby track long term variation in the timing of the link or the underlying channel characteristics."

It was not intended that adaptive filter coefficient would be updated during WAKE_TRAINING, and attempting to do so could makes the implementation subject to undesirable corner cases. However, this is not clearly stated.

It is proposed that the current text be updated to make the intention clear.

SuggestedRemedy

Clearly state that adaptive filter coefficients should be updated in the UPDATE and SEND IDLE OR DATA states and not in the WAKE_TRAINING or WAKE_SLAVE states.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.2.4** *P* **86** *L* **16** # 85

Healey, Adam LSI Corporation

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

Grammar: "sequences" should be "sequence"

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.2.4** *P* **86** *L* **20** # 86

Healey, Adam LSI Corporation

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

Incorrect state diagram variable name: "tx_wake_timer" should be "lpi_waketx_timer"

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.2.4** *P* **86** *L* **32** # 87

Healey, Adam LSI Corporation

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

Grammar: "the both" should be "both"

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.13a** *P* **97** *L* **42** # 88

Healey, Adam LSI Corporation

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

EEE advertisement register, 7.60, includes R/W bits that a management entity may use to constrain the modes advertised to the link partner. However, no register is maintained that reflects the actual capabilities of the local device.

Further to the point, 45.2.6.13a.1 (and other subclauses), state that "If the device supports EEE operation for 10GBASE-KR..." How does the management entity know the device supports EEE operation for 10GBASE-KR?

SuggestedRemedy

Define EEE capabilities register with contents identical to 7.60 (with the exception of the Next page bit). All bits in this register are RO, and will reflect the capabilities of the local device.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.14a** *P* **99** *L* **23** # 89

Healey, Adam LSI Corporation

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

Referring to Table 45-145, bit 15, not bit 10, is the Next page bit. However, it is not clear that this should be defined here. The scope of this register should be constrained to the unformatted code field.

SuggestedRemedy

Change Table 45-145, 7.60.10 to Reserved, Ignore on read.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.15a** *P* **99** *L* **23** # 90

Healey, Adam LSI Corporation

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

Referring to Table 45-146, bit 15, not bit 10, is the Next page bit. However, it is not clear that this should be defined here. The scope of this register should be constrained to the unformatted code field.

SuggestedRemedy

Change Table 45-146, 7.62.10 to Reserved, Ignore on read.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2.1a** *P* **96** *L* **35** # 91

Healey, Adam LSI Corporation

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

What does it mean to have the transmit PMA/PMD "receive" low power idle signaling? Is it supposed to interpret the code-groups (or data-groups or symb_vectors or...) received from the transmit PCS, or is it based on the assertion of some status flag by the PCS? Assuming there is no breakdown in the communication between the PCS and PMA, it seems it would be cleaner to associate this bit with the PCS.

SuggestedRemedy

Clarify the definition of this bit or relocate accordingly.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2.1a** *P* **96** *L* **39** # 92

Healey, Adam LSI Corporation

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

"The receive link status bit shall be implemented with latching high behavior."

This is the "Tx LP idle received" bit.

SuggestedRemedy

Change bit name per comment.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2.1b** *P* **96** *L* **46** # 93

Healey, Adam LSI Corporation

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

"The receive link status bit shall be implemented with latching high behavior."

This is the "Rx LP idle received" bit.

SuggestedRemedy

Change bit name per comment.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.2.9a** *P* **33** *L* **4** # 94

CHOU, JOSEPH REALTEK SEMICON

Comment Type **TR** *Comment Status* **X**

Need to modify the Figure 22-9a and the third paragraph of this subclause to comply to baseline proposal by extending several clocks after the assertion of LP IDLE command of MII.

SuggestedRemedy

Add the following statements in subclause as follows and modify Fig 22-9a accordingly.
"The MAC device may halt RX_CLK at any time more than 9 clock cycles after the start of the low power
idle state as shown in Figure 22-9a if the RX_CLK_stoppable bit is asserted"

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.3** *P* **54** *L* **9** # 95

CHOU, JOSEPH REALTEK SEMICON

Comment Type **TR** *Comment Status* **X**

Need to describe clearly where rx_lpi comes from and how it interact with PMD sublayer.

SuggestedRemedy

The signal rx_lpi comes from PCS sublayer and is defined as the primitive PMA_RXLPI.request (rx_lpi).
It is generated by PCS is intended to pass to PMD sublayer to control the duration of Signal_Detect assertion and deassertion time. Modify Table 25-1 (by adding this primitive), subclause 25.4.11.3, and 25.4.11.4 to clarify the functions.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2.3a** *P* **96** *L* **52** # 96

Koenen, David Hewlett Packard

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

Should bit 1.1.4 indicat the the transmit PFA/PMD is currently transmitting low power idles signal instead of receiving them?

SuggestedRemedy

Change "receiving" to "transmitting" in this paragraph.

Proposed Response *Response Status* **O**

Cl **45** *SC* **Table 45-145** *P* **98** *L* **18** # 97

Koenen, David Hewlett Packard

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

Missing support for 1000Base-KX. Please add to table.

SuggestedRemedy

Change definition of bit 7.60.4 to read:

1000BASE-KX | 1 = EEE is supported for 1000BASE-KX | R/W
| 0 = EEE is not supported for 1000BASE-KX |

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.13a** *P* **98** *L* **40** # 98

Koenen, David Hewlett Packard

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

Missing section on definition for 1000BASE-KX, please add.

SuggestedRemedy

Add a section under 45.2.7.13a for

"1000BASE-KX EEE Supported (7.60.4)"

If the device supports EEE operation for 1000BASE-KX as defined in 70.3a, and EEE operation is desired, this bit shall be set to 1.

Proposed Response *Response Status* **O**

Cl **45** *SC* **Table 45-146** *P* **99** *L* **31** # 99

Koenen, David Hewlett Packard

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

Support for 1000BASE-KX in the EEE mode control register.

SuggestedRemedy

For bit 7.62.2 Change to:

1000BASE-KX | 1 = Reduced energy refresh for 1000BASE-KX LPI | R/W
| 0 = Normal engergy refresh for 1000BASE-KX LPI |

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.15a** *P* **100** *L* **12** # 100

Koenen, David Hewlett Packard

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

Need to add description for 1000BASE-KX reduced energy bit

SuggestedRemedy

Add the following section in 45.2.7.15a:

1000BASE-KX reduced energy (7.62.2)

If the device supports reduced energy refresh cycle for 1000BASE-KX LPI as define in 70.3.x, this bit shall be set to 1. If this bit is set for both the local device and the link partner then both shall operate LPI using the reduced energy method.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.15a** *P* **100** *L* # 101

Koenen, David Hewlett Packard

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

Several paragraphs have duplicate "the the" in the last sentence.

SuggestedRemedy

Fix.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.2** *P* **188** *L* **35** # 102

Koenen, David Hewlett Packard

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

Missing 1000BASE-KX PHY in objectives.

SuggestedRemedy

Add 1000BASE-KX to a sub-bullet under a.)

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.3** *P* **189** *L* **1** # 103
Koenen, David Hewlett Packard

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

Capitalize Low Power mode.

SuggestedRemedy

Change from low to Low.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.3** *P* **189** *L* **39** # 104
Koenen, David Hewlett Packard

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

Make case for signal names in paragraph 78.1.3 consistance with definitions in 78.2.2.

SuggestedRemedy

Make signal name case consistant for:
LP_SLEEP & LP_WAKE

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.3** *P* **191** *L* **46** # 105
Koenen, David Hewlett Packard

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

Paragraph should include backplane PHYs: KX, KX4, KR for Auto-Negotiation.

SuggestedRemedy

Include sentence for backplane PHY's Autonegotiation method. Allow editor to include as they see fit.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.3** *P* **102** *L* **1** # 106
Koenen, David Hewlett Packard

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

Many typos and grammatical errors in top paragraph, looks rushed.

SuggestedRemedy

Fix grammatical errors as editor sees fit to do so.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.4.2.2** *P* **193** *L* **47** # 107
Hajduczenia, Marek ZTE Corporation

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

"Receive Tw_sys, 2 octets, is the time, in microseconds, that the system is requesting that the link partner wait before it starts to transmit data following Low Power Idle." poor English ...

SuggestedRemedy

Change to "Receive Tw_sys (2 octets wide) is the time (expressed in microseconds) that the system is requesting the link partner to wait before it starts transmitting data following the Low Power Idle."

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.6.10.2** *P* **152** *L* **7** # 108
Hajduczenia, Marek ZTE Corporation

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

On page 152 there are two tables without numbers and without indication whether they modify any existing table or are completely new tables

SuggestedRemedy

Either add titles and reference them in the text, or point to table which they replace / modify.

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.6.11.4.1** *P* **179** *L* **31** # 109

Hajduczenia, Marek ZTE Corporation

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

Missing space between definitions of "tx_ts_timer_done" and "wake_alert" blocks. Please insert it

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.2.2** *P* **191** *L* **19** # 110

Hajduczenia, Marek ZTE Corporation

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

This subclause is said to define certain codewords and signals. It would be nice to provide a reader with references to locations where they are defined / described.

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.4.2.1** *P* **193** *L* **40** # 111

Hajduczenia, Marek ZTE Corporation

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

"Transmit Tw_sys, 2 octets, is the time, in microseconds, that the system is capable of waiting before it starts to transmit data following Low Power Idle." poor English ...

SuggestedRemedy

Change to "Transmit Tw_sys (2 octets wide) is the time (expressed in microseconds) that the system is capable of waiting before it starts transmitting data following the Low Power Idle."

Proposed Response *Response Status* **O**

Cl **71** *SC* **71.3a** *P* **160** *L* **4** # 112

Hajduczenia, Marek ZTE Corporation

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

Unresolved references "48.2.x", "71.6.x", "71.6.x", "70.6.x". Need to be resolved to a specific location in the draft or any other specification.

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **00** # 113

Hajduczenia, Marek ZTE Corporation

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

File 3av_0811_hajduczenia_1.pdf contains a series of minor editorial changes, style alignments, etc. Putting them into separate comments is pointless. Please consider the etorial changes proposed therein.

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **11** *L* **7** # 114

Hajduczenia, Marek ZTE Corporation

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

802.3av extended the list of special symbols and operators. You might want to include the latest version. I am not sure whether it is already published, though please contact Glen Kramer for a copy.

SuggestedRemedy

Update the list of special symbols and operators as per changes introduced in P802.3av.

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.3a** *P* **171** *L* **50** # 115

Hajduczenia, Marek ZTE Corporation

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

I think it is not very common to use "a" and "b" in the subclause numbers.
There are other locations in the draft where a similar comment would apply.

SuggestedRemedy

Please avoid using "a" and "b" in subclause numbers. Either create one major subclause and then create two lower level ones or change "72.3a PCS requirements for Low Power Idle" to "72.4 PCS requirements for Low Power Idle" and "72.3b PMA requirements for Low Power Idle" to "72.5 PMA requirements for Low Power Idle", renumbering the remaining subclauses appropriately.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **0** # 116

Hajduczenia, Marek ZTE Corporation

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

Term "Low Power Idle" is used heavily in this document, making it an ideal target for inclusion in the list of abbreviations (1.5)

SuggestedRemedy

Add "LPI<tab>Low Power Idle" to Subclause 1.5. Create 1.5 as necessary.

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.6.4** *P* **173** *L* **1** # 117

Hajduczenia, Marek ZTE Corporation

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

Table 72–3 cuts into a block of text. Beat on Frame and avoid doing that.
Either divide the section into two paragraphs or enable orphan control and make sure the table is not aligned to the top of the page.

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.6.4a** *P* **173** *L* **32** # 118

Hajduczenia, Marek ZTE Corporation

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

Simplyfing "is used as an indicator of signal presence." to "is used to indicate signal presence.".
Also applicable on:
page 151, line 20
page 161, line 31

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.6.11.4.1** *P* **178** *L* **1** # 119

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

(1) I have not found any precedence for the use of term "enumerated variable". There are some use cases in 802.3-2008 though in the management section and all possible values are enumerated and described. Is the list of possible values complete or any other values can be asserted ?
(2) what is a "variant" variable ? This terms is somehow alien to me in the context of 802.3

SuggestedRemedy

(1) clarify the use of "enumerated variables"
(2) define what a "variant variable" is ...

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.6.11.4.1** *P* **179** *L* **12** # 120

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

"A variant variable that contains the state of the transmitters current coefficient values and other values." this sentence is way off the edge. Please clarify it, define "other values" are

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.6.11.4.3** *P* **180** *L* **9** # 121

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

"This counter counts the number of training frames during the training frames sent." - this sentence is either incomplete or I am missing something.

SuggestedRemedy

Either complete the sentence or clarify it.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **0** # 122

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Figures in this draft contain "<=" characters instead of proper "Assignment operator", which can be found in the Symbols' table.
Affected figures 71-1, 71-2, 72-1, 72-2, 70-1, 70-2 (problem spots marked in the 3az_0811_hajduczenia_1.pdf)

SuggestedRemedy

Please check all the newly added / modified figures and replace "<=" characters with the proper "Assignment operator", which can be found in the Symbols' table.

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.7.4.4** *P* **187** *L* **29** # 123

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

(1) Empty element CF48 in the PICS table in 72.7.4.4.
(2) missing references and descriptions for elements CF43 - CF47

SuggestedRemedy

(1) Either remove or fill in with appropriate text, if needed.
(2) correct the missing references and fill in the text descriptions, as necessary

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.1** *P* **188** *L* **22** # 124

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

"10 Megabit" should be probably "10 Mb/s". The same in line 45 on the same page.

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.1** *P* **188** *L* **23** # 125

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

"legacy" - avoid using this term. It make readers feel that the refereenced technology is outdated.

SuggestedRemedy

IMHO strike it out. It is not necessary. Can be replaced with reference to specific clause which defined 100BASE-T PHY. Search globally and eliminate any "leagy" keywords (there are in total 4 occurences in the draft, all added to the existing specifications).

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **0** # 126

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Consistency in definitions:
"low Power Mode"
"Low Power mode"
"Low Power Mode"
Pick one and stick to it consistently ...

SuggestedRemedy

IMHO pick "Low Power Mode", add it to list of abbreviations and use "LPM" consistently to avoid repeating this term everywhere (LPM is free in 1.5 in 802.3-2008)

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **0** # 127

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Consistency in definitions
"quiet mode"
"Quiet mode"
Pick one and stick to it consistently ...

SuggestedRemedy

IMHO, "Quiet Mode" since it is something specific to EEE and should be emphasized.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **0** # 128

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

When refering to an Idle codeword, it should be named "Idle" and not "IDLE". "Idle" is what is used currently in 802.3

SuggestedRemedy

Global search & destroy: "IDLE" > "Idle" when referring to an idle character / symbol.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.3** *P* **189** *L* **50** # 129

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

What is the difference between "Low Power Mode" and "Low Power operation" ? If none, why create two terms to refer to the same thign ?

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.3** *P* **190** *L* **22** # 130

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Figure 78-2 has very large gaps between accompanying text and the figure. Eliminate them. Additionally, the text in the figure could be larger. It is hard to read on a print-out.

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.5** *P* **194** *L* **45** # 131

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

By "defacement" do You mean "The act of damaging the appearance or surface of something" ?? I suspect it is a typo. Does not seem to make any sense in this case.

SuggestedRemedy

Change into something appropriate in this case (various, different etc.)

Proposed Response *Response Status* **O**

Cl **71** *SC* **71.6.5** *P* **160** *L* **50** # 132

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

"71.6.5 PMD lane-by-lane signal detect function during normal operations" vs "72.6.4 PMD signal detect function during normal operation"

SuggestedRemedy

Change title of 71.6.5 to read "PMD lane-by-lane signal detect function during normal operation". Need to define also what "normal operation" is ...

Proposed Response *Response Status* **O**

Cl **71** *SC* **71.6.5a** *P* **161** *L* **37** # 133

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

"assertion threshold as defined in TBD" ... this TBD needs to be replaced with correct reference to the location where Signal_Detect assertion threshold is defined.
The same is true for page 161, line 43.
The same is true for page 173, line 37 & 43.

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **71** *SC* **71.6.12.2** *P* **162** *L* **23** # 134

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

On page 162 and 163 there are two tables without numbers and without indication whether they modify any existing table or are completely new tables

SuggestedRemedy

Either add titles and reference them in the text, or point to table which they replace / modify.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **0** # 135

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Plethora of unresolved references throughout the draft. Scrutinize the draft and update all references with xx characters in them.
Here is the list of missing references:
page 149, line 48, 53
page 150, line 1
page 154, line 48, 54
page 160, line 4, 5, 11, 14
page 163, line 7
page 165, line 20, 23
page 176, line 30
page 187, line 18, 20, 22, 24, 27

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **0** # 136

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

There are several locations, where cross-references are not live e.g. page 149, line 49.

SuggestedRemedy

As per comment. Make all cross-references in this draft live.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **0** # 137

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

There are several locations in the draft e.g. page 172, line 6, where "state machines" are referenced. Per 802.3 guidelines, there are no "state machines" but "state diagrams".

SuggestedRemedy

Global hunt & destroy: all references to "state machine" must be replaced with "state diagram".

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **0** # 138

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

In the draft, there are several references to "<units>", e.g. page 173, line 37. What does this mean and why is it here ?

SuggestedRemedy

Either replace with appropriate units or remove altogether if it is only some editorial marker.

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.6.11.1** *P* **176** *L* **30** # 139

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

"Auto-negotiation as described in 73.x.x.x." - some reference is missing. This missing reference is repeated several time throughout the draft. Make sure You capture them all ...

SuggestedRemedy

Update the missing reference.

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.6.11.2** *P* **177** *L* **0** # 140

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

On page 177, there are two tables without numbers and without indication whether they modify any existing table or are completely new tables

SuggestedRemedy

Either add titles and reference them in the text, or point to table which they replace / modify.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **0** # 141

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

"nsec" as a unit is not used anywehere else in the draft. "ns" is.
"usec" as a unit is not used anywehere else in the draft. "us" is.
"msec" as a unit is not used anywehere else in the draft. "ms" is.

SuggestedRemedy

Global search & destroy: replace all occurences of offending abbreviations as suggested in the comment field.

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.6.11.4** *P* **178** *L* **1** # 142

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Consider usign the format of variable defintion adopted by 802.3av in D2.1, Clause 77/76. It is much more readable and presents the size of teh variable as well as potential default values.

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.6.11.4.1** *P* **178** *L* **1** # 143

Hajduczenia, Marek ZTE Corporation

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

Definitions of the variables need (probably) more careful consideration. They are given value only during the autonegotiation process. What happens if the negotation process fails ? EEE will not work ? If it will start anyway, then variables need default values.

SuggestedRemedy

Add default values to variables if under link negotation failure EEE mechanism can still operate.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.3** *P* **190** *L* **25** # 144

Hajduczenia, Marek ZTE Corporation

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

There is some naming inconsistency. When both link partners enter the mode, it is "synchronous". I would expect the opposite situation to be called "asynchronous" and not "asymmetric"

SuggestedRemedy

Change "asymmetric" in line 27 to read "asynchronous".

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.4** *P* **190** *L* **33** # 145

Hajduczenia, Marek ZTE Corporation

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

"EEE defines Low power operational modes for the following six 802.3 protocols, use Table 78–1 for the associated clauses." change to "EEE defines the Low Power Mode of operation for the following six 802.3 PHYs. Table 78–1 lists the clauses associated with each PHY."

Table 78-1 does not list protocols but PHYs. Change caption of table 78-1 to read "Relation between EEE and IEEE PHYs"

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.4.1** *P* **193** *L* **11** # 146

Hajduczenia, Marek ZTE Corporation

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

(1) "shall support the EEE Type, Length, Value (TLV) defined in 78.1.2." - there are no TLVs defined in 78.1.2 as far as I can say.
(2) "the corresponding MIB objects defined in TBD" ... - TBD in a reference. Cannot resolve it in any way ...

SuggestedRemedy

(1) Update the reference to point to the appropriate location (78.4.2 ???).
(2) reslove this missing reference to some subclause

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.4.2** *P* **193** *L* **18** # 147

Hajduczenia, Marek ZTE Corporation

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

The whole first paragraph is repeated from 78.4.1. Seems unnecessary, strike the first paragraph in 78.4.2

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.5** *P* **195** *L* **1** # 148

Hajduczenia, Marek ZTE Corporation

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

Table 78-2 is full of TBDs

SuggestedRemedy

Change the TBDs with at least temporary values You have been working on. Leaving TBDs sends a wrong message. You can always change these values later on if that is the TF's consensus.

Proposed Response *Response Status* **O**

Cl **71** *SC* **71.5** *P* **160** *L* **36** # 149

Hajduczenia, Marek ZTE Corporation

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

Comparing tables 71-2 and 72-2, it is hard to say why they have different format (one is centered, the other one left aligned) and why the added entry is named differently in both cases, if after all, it is the same. Either name it "LPI enable" or "Low Power Idle" - IMHO "LPI enable" is OK but need to add an abbreviation in section 1.5

SuggestedRemedy

As per comment.
Align the style of all tables in the draft into a consistent form.

Proposed Response *Response Status* **O**

Cl **71** *SC* **71.6.5** *P* **161** *L* **5** # 150

Hajduczenia, Marek ZTE Corporation

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

It is really inconsistent to use "LPI" in some places and "LP Idle" in others.

SuggestedRemedy

Replace "LP Idle" with "LPI". Add "LPI<tab>Low Power Idle" to 1.5. Make sure only the first use in the Clause of LPI is expanded i.e. has the form "Low Power Idle (LPI)". The remaining uses should be already based on the abbreviation. Scrub the whole draft

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.7.4.2** *P* **184** *L* **30** # 151

Hajduczenia, Marek ZTE Corporation

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

TBD in FS12 in 72.7.4.2 PICS. Needs an update

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.1** *P* **114** *L* **13** # 152

Tidstrom, Rick Broadcom

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

References the Energy Efficient Clause as Clause 72.

Clause 72 is titled "Physical Medium Dependent Sublayer and Baseband Medium, Type 10GBASE-KR".

SuggestedRemedy

Change from Clause 72 to Clause 78.

Clause 78 is titled "Energy Efficient Ethernet (EEE)".

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.1.1** *P* **114** *L* **36** # 153

Tidstrom, Rick Broadcom

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

References the Energy Efficient Clause as Clause 72.

Clause 72 is titled "Physical Medium Dependent Sublayer and Baseband Medium, Type 10GBASE-KR".

SuggestedRemedy

Change from Clause 72 to Clause 78.

Clause 78 is titled "Energy Efficient Ethernet (EEE)".

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.1.3** *P* **114** *L* **43** # 154

Tidstrom, Rick Broadcom

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

References the Energy Efficient Clause as Clause 72.

Clause 72 is titled "Physical Medium Dependent Sublayer and Baseband Medium, Type 10GBASE-KR".

SuggestedRemedy

Change from Clause 72 to Clause 78.

Clause 78 is titled "Energy Efficient Ethernet (EEE)".

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.1.3.3** *P* **116** *L* **24** # 155

Tidstrom, Rick Broadcom

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

The following sentence is vague with regards to how many LP_IDLE codewords are required for a transition to Low Power Idle:

"In the transmit direction the transition to the LPI transmit state is initiated by the reception of LP_IDLE codewords on the XGMII interface."

SuggestedRemedy

Change the sentence to define the number of LP_IDLE codewords required for a transition to LPI.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.1.3.3** *P* **117** *L* **4** # 156

Tidstrom, Rick Broadcom

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

The senetence below indicates that the EEE Receive state machine is in the PCS.

"The EEE Receive state machine is contained in the PCS Receive function and is specified in Figure 55-TBD."

SuggestedRemedy

The EEE Receive state machine as currently defined is in the PMA sublayer.

Possible remedies:

1. Change PCS to PMA.
2. Redefine the state machine to be in the PCS.
3. The state machine location is vender determined.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **128** *L* **16** # 157

Tidstrom, Rick Broadcom

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

In the Edititor's notes, the following question is asked:

"Do we need a test mode, and what should be tested?"

SuggestedRemedy

Currently, there are three test mode bits, and 8-modes defined. If test modes are required for EEE, then another test mode bit will need to be added.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.4** *P* **132** *L* **1** # 158

Tidstrom, Rick Broadcom

Comment Type **TR** *Comment Status* **X**

The state machines in the current draft have a hole with regards to the synchronization of a link partners. The state machines will not be updated upon resolution of this draft.

SuggestedRemedy

The details for resolution of this issue to be submitted in a presentation for the November Plenary meeting.

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.2.2.9a** *P* **69** *L* **32** # 159

Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Missing reference in "as shown in .... if"

SuggestedRemedy

Provide the missing reference

Proposed Response *Response Status* **O**

Cl **36** *SC* **36** *P* **72** *L* **1** # 160
Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Extra bracket at the end of title in clause 36.

SuggestedRemedy

Remove it

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.3.4** *P* **84** *L* **1** # 161
Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Figure 40-10a has several problems as marked in 3az_0811_hajduczenia_3.pdf
Make sure
(1) lines do not cross (hard to guess which goes where) - see Figure 76–20 in 802.3av D2.1 for an example of how to solve it in a clear manner
(2) lines are not broken in the middle
(3) arrows do not meet as it happens on the left side of the figure (marked with a red box)
Similar problems also exist in Figure 40-15a on page 89

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.6.2** *P* **91** *L* **1** # 162
Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Figure 40-16a has some problems:
(1) arrows should not meet as marked in 3az_0811_hajduczenia_3.pdf (red box)
(2) NOTEs are too close to each other and become hard to read when printed - add some space

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.5.1.1** *P* **91** *L* **50** # 163
Hajduczenia, Marek ZTE Corporation

Comment Type **TR** *Comment Status* **X**

Table 40-4 is empty

SuggestedRemedy

Any contents will be inserted after this recirculation ? This comment is to make sure You do not miss it ...

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.12** *P* **93** *L* **1** # 164
Hajduczenia, Marek ZTE Corporation

Comment Type **TR** *Comment Status* **X**

This comment is to make sure You do not forget to fill in PICS for clause 40

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.15a.2** *P* **100** *L* **1** # 165
Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Missign references in 45.2.7.15a.2, 45.2.7.15a.3, 45.2.7.15a.4 and 45.2.7.15a.5 - define them and provide explicitly.

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **45** *SC* **45** *P* **101** *L* **1** # 166
Hajduczenia, Marek ZTE Corporation

Comment Type **TR** *Comment Status* **X**

This comment is to make sure You do not forget to fill in PICS for clause 45

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **00** *L* **0** # 167
Hajduczenia, Marek ZTE Corporation

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

Term clutter
I already saw "low power idle mode", "low power state", "low power idle state", "low power mode" etc. Do all of these refer to the same thing ? If so, why have several names for the same thing ? Scrub the draft accordingly

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.3.1.2** *P* **103** *L* **40** # 168
Hajduczenia, Marek ZTE Corporation

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

Text says "In the absence of errors or low power idle," but should probably say "In the absence of errors and low power idle,", since TXC
signals are de-asserted by the RS for each octet of the preamble only when there is no transmission going on
Similar comment on page 105, line 26.

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.3.1.5a** *P* **104** *L* **41** # 169
Hajduczenia, Marek ZTE Corporation

Comment Type **ER** *Comment Status* **X**

Reference missing; also on page 107, line 12

SuggestedRemedy

Please update

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.4.11.1** *P* **55** *L* **50** # 170
Hajduczenia, Marek ZTE Corporation

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

I am not sure I understand "25.4.11.1 Change to 7.1.2 “Encoder”"

SuggestedRemedy

What do You want to do in here ? Please clarify. The same is applicable to page 57, line 26

Proposed Response *Response Status* **O**

Cl **30** *SC* **30** *P* **63** *L* **1** # 171
Hajduczenia, Marek ZTE Corporation

Comment Type **TR** *Comment Status* **X**

Clause 30 is missing - it would be good to have at least a rough look at it before the next recirculation of the draft.

SuggestedRemedy

As per comment

Proposed Response *Response Status* **O**

Cl **35** *SC* **35** *P* **65** *L* **1** # 172

Hajduczenia, Marek ZTE Corporation

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

In clause 35, there are again references to subclauses using "a" and "b" in the number. Avoid it. Insert a new subclause if needed and call for renumbering of the remaining subclauses.

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.2.2.7** *P* **68** *L* **42** # 173

Hajduczenia, Marek ZTE Corporation

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

In Table 35–2, row 4 should be marked as insertion (underlined). It is not currently

SuggestedRemedy

As per comment.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.1.3** *P* **114** *L* **43** # 174

Taich, Dimitry Teranetics

Comment Type **ER** *Comment Status* **X**

1The text reads:
"10GBASE-T PHYs optionally provide support for Low Power Idle (LPI) as part of Energy Efficient Ethernet (see Clause 72). This extension allows PHYs to enter a low-power idle state of operation when the MAC requests low power operation."

Since 10GBASE-T supports assymetrical LPI operational mode PHY can enter LPI state also when Link Partner has entered LPI and sent "Sleep" signal.

SuggestedRemedy

Update text to include possibility to enter LPI mode also when Link Partner has entered LPI mode

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.5.2** *P* *L* # 175

Taich, Dimitry Teranetics

Comment Type **TR** *Comment Status* **X**

We need to define additional test modes to verify:
1. Alert pattern implementation
2. LPI cycle implementation - for all possible Tr values
3. Transmit path frequency stability in LPI mode

SuggestedRemedy

See "10GBASE-T LPI Test modes" Teranetics' presentation

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.2.2.21** *P* **124** *L* **32** # 176

Taich, Dimitry Teranetics

Comment Type **TR** *Comment Status* **X**

Editorial comment reads:
"The process by which PCS scrambler synchronization is maintained during quiet signaling has not been specified. Simple solutions would be to freeze the scramblers during quiet. [scramblers are not used for the alert sequence]."

I suspect that freezing scramblers during Quiet Time and enabling them for Refresh/Data is unnecessary transition process sophistication and can raise yet another sync concern. Typical scramblers implementation takes virtually no power, why don't we leave them running all the time, during Quiet periods as well?

SuggestedRemedy

Editor to put specific note in the text that PCS scrambler should be running constantly and not be affected by LPI mode states/transitions

Proposed Response *Response Status* **O**

Cl **55** *SC* **124** *P* *L* # 177

Taich, Dimitry Teranetics

Comment Type **TR** *Comment Status* **X**

THP state is not defined at the beggining of the WAKE signal Transmission.

SuggestedRemedy

At the start of each WAKE signal the THP feedback delay line shall be initialized with zeros

Proposed Response *Response Status* **O**

Cl **55** *SC* *P* *L* # 178

Taich, Dimitry Teranetics

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

EEE is clause 78. There are multiple places in clause 53 when EEE is referenced as clause 72.

SuggestedRemedy

Update references to EEE according to the comment

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.1.3.3** *P* **116** *L* **52** # 179

Taich, Dimitry Teranetics

Comment Type **ER** *Comment Status* **X**

Text reads:
"The MAC is responsible for controlling transitions to and from the LPI state via XGMII signaling."

MAC is only responsible for transitions to and from LPI state of the Transmit path. Receive path operational mode depends on the Link Partner Operational Mode (Normal or LPI).

SuggestedRemedy

Update text accordingly

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.4.1.5** *P* **50** *L* **33** # 180

GUPTA, SUJAY Infosys Technologies

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

This primitive is generated by the Receive Process of PCS, when Low Power Idle mode is implemented, to
indicate that the transmitter is in Low Power Transmit state and the line is in Quiet state. See Clause 24.2.4.2 and Figure 24–8.

SuggestedRemedy

>> Should it not be the Transmit Process ,
>>the clause reference is not traceable and it makes better to refer to figure 24-4 and not 24-11 or 24-8

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.3** *P* **189** *L* **36** # 181

GUPTA, SUJAY Infosys Technologies

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

In the transmit direction entrance to Low Power mode of operation is triggered by the reception of LP_IDLE
codewords on the MAC interface.

SuggestedRemedy

It would be more clear to mention at as " .. reception of LP_IDLE
codewords on the MII interface."

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.2.4.3** *P* **194** *L* **3** # 182

GUPTA, SUJAY Infosys Technologies

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

In each direction, the Resolved Transmit Tw_sys is the lesser of the local Transmit Tw_sys and the received
(from the link partner) Receive Tw_sys.

>> Assuming Recvd Tw_sys implies the partner may drop packets if an attempt is made to send data before the expiry of Recvd Tw_sys.
The statement here, of choosing lesser of the two, could make the peer drop packets.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.2.2.5** *P* **41** *L* **32** # 183

GUPTA, SUJAY Infosys Technologies

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

SLEEP state. The start of a Low Power Idle stream is indicated by a series of SLEEP code-groups
with fixed amount of time denoted

SuggestedRemedy

SLEEP state. The start of a Low Power Idle stream is indicated by a series of SLEEP code-groups
for fixed amount of time denoted

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.2.2.5** *P* **41** *L* **48** # 184

GUPTA, SUJAY Infosys Technologies

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

Upon successfully receiving SLEEP code-groups, the 100BASE-X PCS will enter Low Power Receive state
if the Energy Efficient Ethernet option is implemented.

SuggestedRemedy

Upon successfully receiving SLEEP code-groups, the 100BASE-X PCS will enter Low Power Receive state
>>(if the Energy Efficient Ethernet option is implemented.)<< this part is understood in the larger context may be omitted at frequent places.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.2.3.4** *P* **43** *L* **10** # 185

GUPTA, SUJAY Infosys Technologies

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

24.2.3.4 Timers

SuggestedRemedy

in this section all the timers description begins with ;
"In the low power receive state", this makes some defintions not so clear.
without the state diagram right next.
They could be better started off as "In the low power receive state, when it is in the Quite state... etc.."

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.2.2.5** *P* **41** *L* **41** # 186

GUPTA, SUJAY Infosys Technologies

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

c) WAKE state. At the end of the Low Power Idle state, the stream is terminated by a series of IDLE
code-groups with default or negotiated amount of time denoted by Tw.

SuggestedRemedy

c) WAKE state. At the end of the Low Power Idle state, the stream is terminated by a series of IDLE
code-groups for the default or negotiated amount of time denoted by Tw.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.3** *P* **192** *L* **4** # 187

GUPTA, SUJAY Infosys Technologies

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

Each PHY advertises most energy-efficient combination (combination with lowest Tr/Tq ratio value) supported
and negotiates to lowest common value to ensure robust and quality link.
>> A least negotiated value would guarentee maximum power savings, is there any relation with "robust" and "quality link". If robust and link quality are meant here to be technical terms.

SuggestedRemedy

Suggest to remove it.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.3** *P* *L* **25** # 188

GUPTA, SUJAY Infosys Technologies

Comment Type **TR** *Comment Status* **X**

What is the idea behind introducing the concept (of asynchronous, symmetric)? If it is relevant it would be under the scope of Control Plane, which will trigger and stop LPI.

SuggestedRemedy

Perhaps can be added as an Optional Control Plane behavior in a separate Appendix section. Further a symmetric behaviour could be better described as a scheme where both partners enter LPI (may not be at the same time) and contrary for asymmetric (If there is no relation that with both going into LPI simultaneously would cause a different behaviour other than the what is specifed in the draft elsewhere)

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.5.2** *P* **87** *L* **22** # 189

Grimwood, Michael Broadcom Corporation

Comment Type **TR** *Comment Status* **X**

Currently, signal detect assertion and signal detect deassertion times are not specified. Timers and values needed.

SuggestedRemedy

Define signal_detect_assertion_time and a requirement that it be no longer than 0.5 µs.

Define signal_detect_deassertion_time and a requirement that it be no longer than 1.0 µs.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.5.2** *P* **88** *L* **6** # 190

Grimwood, Michael Broadcom Corporation

Comment Type **TR** *Comment Status* **X**

In order to accommodate the new requirement for signal_detect_deassertion_time (comment submitted separately), the lpi_waketx_timer value needs to be modified such that (lpi_wakemz_timer - lpi_waketx_timer) >= signal_detect deassertion time. So for the minimum value of lpi_wakemz_timer (2 µs), the signal detect deassertion time must be <= 1.0 µs.

SuggestedRemedy

Change:

This timer shall have a period between 1.2 µs and 1.4 µs.

To:

This timer shall have a period between 0.8 µs and 1.0 µs.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.6.1** *P* **90** *L* **20** # 191

Grimwood, Michael Broadcom Corporation

Comment Type **TR** *Comment Status* **X**

The state diagram in figure 40-15b has an exit condition from the wake_silent state that depends on scr_status. scr_status is ambiguous and therefore this condition can lead to interoperability issues. Also, allowing the wake_silent state in LPI mode to be executed under some conditions and bypassed under others unnecessarily introduces additional combinations of state transition sequences that also can contribute to interoperability issues.

SuggestedRemedy

A presentation will be submitted proposing a remedy.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.5.2** *P* **87** *L* **51** # 192

Grimwood, Michael Broadcom Corporation

Comment Type **TR** *Comment Status* **X**

lpi_wake_time is specified to be less than or equal to 16 µs. However, under best-case implementation assumptions and propagation delays, it is still possible that wake can take up to 3.8 µs since this is the sum of the minimum lpi_wakemz_timer and lpi_waitwt_timer values. Therefore, the parameter range and associated allowable autonegotiation values should be constrained such that wake time is greater than or equal to 3.8 µs and less than or equal to 16 µs. Because the wake time is negotiated in 1 µs increments, the allowable range for lpi_wake_time should be 4 µs to 16 µs.

SuggestedRemedy

Change:

Duration: This timer is a negotiated parameter [add reference] not to exceed 16 µs.

To:

Duration: This timer is a negotiated parameter [add reference] with a value greater than or equal to 4 µs and less than or equal to 16 µs.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.13a** *P* **98** *L* **10** # 193

Grimwood, Michael Broadcom Corporation

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

In Table 45-145 EEE advertisement register, bit 7.60.10 is specified as "Next page Always set to 1...". Since this is always set to 1, do we need to send this indication? Recommend changing the bit to reserved for potential future use.

SuggestedRemedy

Change:

7.60.15:11 Reserved Ignore on read

To:

7.60.15:7 Reserved Ignore on read

Delete the following two rows in the table:

7.60.10 Next page Always set to 1, indicating that another page follows

7.60.9:7 Reserved Ignore on read

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.15a** *P* **99** *L* **23** # 194

Grimwood, Michael Broadcom Corporation

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

In Table 45-146 EEE mode control register, bit 7.62.10 is specified as "Next page Always set to 0...". Since this is always set to 0, do we need to send this indication? Recommend changing the bit to reserved for potential future use.

SuggestedRemedy

Change:

7.62.15:11 Reserved Ignore on read

To:

7.62.15:10 Reserved Ignore on read

Delete the following:

7.62.10 Next page Always set to 0, indicating that no page follows

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.52** *P* **128** *L* **8** # 195

Grimwood, Michael Broadcom Corporation

Comment Type **TR** *Comment Status* **X**

As pointed out in the editor's comment number 4): "If both PHYs enter LPI at the same time, how do they resolve who was the first to enter LPI in order to ensure appropriate synchronization of refresh periods? This seems to require additional signaling."

This is a critical issue to resolve. Also we need to not only resolve the "first to enter" issue, but also ensure a mechanism exists to synchronize and align refresh periods for each of the respective link partners.

SuggestedRemedy

The details for resolution of this issue to be submitted in a presentation for the November Plenary meeting.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.6.3** *P* **146** *L* **39** # 196

Grimwood, Michael Broadcom Corporation

Comment Type **TR** *Comment Status* **X**

The 100BASE-TX and 1000BASE-T EEE specifications include an overall maximum PHY wake time (30 us for 100BASE-TX and negotiated up to 16 us for 1000BASE-T). There is no equivalent specification for 10GBASE-T EEE.

Instead, for 10G, there is an lpi_wake_time negotiated in the range of 1 to 9 frames. However, this is not the actual wake time (Tw_phy as defined in Clause 78) as it is only a portion of the overall wake time. The Tw_PHY time and associated requirement needs to be explicit to ensure implementations meet this overall PHY wake time requirement and also to make Tw_PHY explicit for system-level implementations.

SuggestedRemedy

Add a requirement for Tw_PHY for 10GBASE-T. The details and values for this requirement to be submitted in a presentation for the November Plenary meeting.

Proposed Response *Response Status* **O**

Cl **55** *SC* **3.2.2.21** *P* **124** *L* **19** # 197

Graba, Jim Broadcom

Comment Type **TR** *Comment Status* **X**

The first normal idle codeword in the first wake frame after an alert is likely to contain errors and should not be used as a criterion for any wake frame error detection.

SuggestedRemedy

Reword so as not to include the first idle code word after an alert in any wake frame error detection.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.1** *P* **36** *L* **10** # 198

Barrass, Hugh Cisco

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

There is no enable for LPI.

SuggestedRemedy

Replace

"When this capability is implemented and enabled"

with

"When this capability is implemented and utilized"

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.1** *P* **36** *L* **12** # 199

Barrass, Hugh Cisco

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

This seems to indicate that 100BASE-TX is the only supported PHY - it needs to be made clearer.

SuggestedRemedy

Change

This capability is currently only supported in 100BASE-TX.

to

The only 100BASE-X PHY that supports this capability is 100BASE-TX.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.2** *P* **36** *L* **33** # 200

Barrass, Hugh Cisco

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

The use of the words "option and "mode" is misleading.

SuggestedRemedy

Change

Support the option of Energy Efficient Ethernet with the function of Low Power Idle mode as described in Clause 78 for the embodiment of 100BASE-TX.

to

Support Energy Efficient Ethernet with the optional function of Low Power Idle as described in Clause 78 for the embodiment of 100BASE-TX.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.4.1** *P* **36** *L* **53** # 201

Barrass, Hugh Cisco

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

The use of the words "optionally" and "mode" is misleading.

SuggestedRemedy

Change

Interpret and generate MII opcodes to optionally enable or disable the Low power Idle mode.

to

Interpret and generate MII opcodes to signal Low Power Idle.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.2.3.4** *P* **43** *L* **27** # 202

Barrass, Hugh Cisco

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

There doesn't seem to be any point in negotiating the value of the lpi_rx_tw_timer. The transmitter must wait for at least 30us before it can send data, so there's no benefit to negotiating a smaller value (and it's very small anyway). Negotiating a longer wakeup time would not allow any extra power savings as the transmitter has already started sending IDLE or /P/P/.

SuggestedRemedy

Change

This timer is set to a default value 30us and can be negotiated during Auto-negotiation or with LLDP.

to

The value of this timer is fixed to 24us.

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.4.11** *P* **55** *L* **41** # 203

Barrass, Hugh Cisco

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

There is no enable for the LPI function.

SuggestedRemedy

Change

implemented and enabled

to

implemented

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.4.11.3** *P* **59** *L* **14** # 204
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
Change "enabled" to "implemented"

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.4.11.4** *P* **59** *L* **22** # 205
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
Change "enabled" to "implemented"

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.2.2.9a** *P* **69** *L* **33** # 206
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
The editor's note indicates that a control bit is needed to indicate "clock stoppable"

SuggestedRemedy
Add a control bit in Clause 45 PCS registers (separate comment)

Change

While the PHY device is indicating low power idle the PHY device may halt the RX_CLK as shown in .... if the RX_CLK_stoppable bit is asserted [Editor's note add reference].

With

While the PHY device is indicating low power idle the PHY device may halt the RX_CLK as shown in [figure 35-9a] if and only if the RX_CLK_stoppable bit is asserted [45.2.3.1.3a].

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.2.2.4** *P* **65** *L* **48** # 207
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
Replace

When LPI mode is enabled (see [Editor's note add reference]), the PHY shall interpret...

with

The PHY shall interpret...

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.1.3** *P* **74** *L* **18** # 208
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
Change

When this capability is enabled, the assertion of low power...

to

The assertion of low power...

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.5.2** *P* **87** *L* **51** # 209
Barrass, Hugh Cisco

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

The programmable wake timer seems to be too complex for a very small benefit.

The timer should be fixed to the smallest value that is generally acceptable.

SuggestedRemedy

Change

Duration: This timer is a negotiated parameter [add reference] not to exceed 16 us.

to

Duration: This timer shall have a period of 16 us.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.5.2** *P* **88** *L* **14** # 210
Barrass, Hugh Cisco

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

The programmable wake timer is unnecessary (addressed in a separate comment)

If the programmable wake timer is fixed to 16uS then the duration of lpi_wakemz_timer can also be fixed.

SuggestedRemedy

Change

Duration: The period of lpi_wakemz_timer is related to the resolved value of lpi_wake_timer and shall have the nominal period shown in Table 40–3

to

Duration: This timer shall have a period of 5 us.

Also, delete Table 40-3

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.5.1** *P* **91** *L* **40** # 211
Barrass, Hugh Cisco

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

This clause should reference the new autonegotiation requirements for EEE.

SuggestedRemedy

Add the following:

Insert below bullet item b):

c) To negotiate Energy Efficient Ethernet capabilities as specified in 28C.12.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.5.1.1** *P* **91** *L* **50** # 212
Barrass, Hugh Cisco

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

New registers defined in 45.2.1.2 need to be added to the table

SuggestedRemedy

Add the register descriptions into the table.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.5.1.2** *P* **92** *L* **12** # 213
Barrass, Hugh Cisco

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

New registers defined in 45.2.7 need to be added to the table

SuggestedRemedy

Add the register descriptions into the table.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3** *P* **97** *L* **10** # 214

Barrass, Hugh Cisco

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

A bit is required for "clock stoppable" as used in Clause 22 etc.

SuggestedRemedy

Add the following:

Change Table 45-83 to add "clock stoppable" bit

(change 3.0.10:7 Reserved to 3.0.9:7 Reserved)

Add subclause 45.2.3.1.3a

45.2.3.1.3a Clock Stoppable (3.0.10)

A PHY that supports low power idle signaling may stop the derived xMII receive clock while it is signaling low power idle in the receive direction. If bit 3.0.10 is set to 1 then the PHY may stop the receive MII clock while it is signaling low power idle otherwise it shall keep the clock active. If the PHY does not support low power idle signaing or is not able to stop the receive clock then this bit has no effect (see 22.2.2.9a, 35.2.2.9a, 46.3.2.4a).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45** *P* **96** *L* **12** # 215

Barrass, Hugh Cisco

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

Table designation is wrong

SuggestedRemedy

Change 45-1 to 45-5

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.15a** *P* **99** *L* **46** # 216

Barrass, Hugh Cisco

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

The editor's note suggests that this register is a placeholder awaiting a definition for reduced energy settings in the PHY clauses. There is no such definition, therefore delete this and the link partner register.

SuggestedRemedy

Delete clause 45.2.7.15a and 45.2.7.15b (mis-numbered as 45.2.7.15a.6)

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.15b** *P* **100** *L* **31** # 217

Barrass, Hugh Cisco

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

sub-clause is mis-numbered

SuggestedRemedy

Change 45.2.7.15a.6 to 45.2.7.15b

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.3.2.4a** *P* **106** *L* **12** # 218

Barrass, Hugh Cisco

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

The editor's note indicates that a control bit is needed to indicate "clock stoppable"

SuggestedRemedy

Add a control bit in Clause 45 PCS registers (separate comment)

Change

While the PHY device is indicating low power idle the PHY device may halt the RX_CLK as shown in .... if the RX_CLK_stoppable bit is asserted [Editor's note add reference].

With

While the PHY device is indicating low power idle the PHY device may halt the RX_CLK as shown in [figure 46-8a] if and only if the RX_CLK_stoppable bit is asserted [45.2.3.1.3a].

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.3.1.2** *P* **103** *L* **52** # 219

Barrass, Hugh Cisco

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

There is no enable for LPI.

SuggestedRemedy

Replace

When LPI mode is enabled (see [Editor's note add reference]), the PHY shall interpret...

with

The PHY shall interpret...

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.2.1** *P* **118** *L* **43** # 220

Barrass, Hugh Cisco

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

The editor's note asks a question.

The answer is that the resolution of the negotiable timer parameters will be defined in Annex 28C, no definition of the negotiation is required in this section.

SuggestedRemedy

Delete the editor's note.

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.1** *P* **149** *L* **30** # 221

Barrass, Hugh Cisco

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

There is no enable for LPI.

SuggestedRemedy

Replace

When this capability is enabled, the assertion of low power...

with

The assertion of low power...

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.3a** *P* **149** *L* **54** # 222
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
replace

...if the Low Power Idle feature is enabled and the PCS transmit function receives...

with

...if the PCS transmit function receives...

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.5** *P* **150** *L* **27** # 223
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
Delete the row from Table 70-2

Proposed Response *Response Status* **O**

Cl **70** *SC* **70.5** *P* **150** *L* **40** # 224
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There are separate status bits for Tx & Rx.

SuggestedRemedy
Modify Table 70-3 to match 45.2.1.2 (Table 45-5).

Proposed Response *Response Status* **O**

Cl **71** *SC* **71.1** *P* **159** *L* **10** # 225
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
Replace

When this capability is enabled, the assertion of low power...

with

The assertion of low power...

Proposed Response *Response Status* **O**

Cl **71** *SC* **71.3a** *P* **160** *L* **10** # 226
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
Replace

If the Low Power Idle feature is enabled and the PCS...

with

The PCS...

Two instances - lines 10 and 13

Proposed Response *Response Status* **O**

Cl **71** *SC* **71.5** *P* **160** *L* **36** # 227
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
Delete the row from Table 71-2

Proposed Response *Response Status* **O**

Cl **71** *SC* **71.5** *P* **161** *L* **8** # 228
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There are separate status bits for Tx & Rx.

SuggestedRemedy
Modify Table 71-3 to match 45.2.1.2 (Table 45-5).

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.1** *P* **171** *L* **36** # 229
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
Replace

When this capability is enabled, the assertion of low power...

with

The assertion of low power...

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.3a** *P* **171** *L* **5** # 230
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
Replace

If the Low Power Idle feature is enabled and the PCS...

with

The PCS...

Two instances - lines 5 and 8

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.5** *P* **172** *L* **35** # 231
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There is no enable for LPI.

SuggestedRemedy
Delete the row from Table 72-2

Proposed Response *Response Status* **O**

Cl **72** *SC* **72.5** *P* **173** *L* **8** # 232
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
There are separate status bits for Tx & Rx.

SuggestedRemedy
Modify Table 71-3 to match 45.2.1.2 (Table 45-5).

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.3** *P* **189** *L* **40** # 233
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
Typo - 10BASE-T, should be 100BASE-TX

SuggestedRemedy
Change 10BASE-T to 100BASE-TX.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.4** *P* **190** *L* **41** # 234
Barrass, Hugh Cisco

Comment Type **E** *Comment Status* **X**
100BASE-T - should be TX

SuggestedRemedy
Change 100BASE-T to 100BASE-TX

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.5** *P* **190** *L* **45** # 235
Barrass, Hugh Cisco

Comment Type **E** *Comment Status* **X**
Missing clause number

SuggestedRemedy
Insert clause number 70

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.3** *P* **192** *L* **1** # 236
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
The first 2 paragraphs are incorrect.

SuggestedRemedy
Replace first 2 paragraphs of this page with

During the link establishment process, both link partners indicate their EEE capabilities. If EEE is supported by both link partners for the negotiated PHY type then the EEE function may be used independently in either direction.

The autonegotiation process uses next page messages or extended next page messages as defined in 28C.12, 28C.13 and 73A.4.

Proposed Response *Response Status* **O**

Cl **14** *SC* **14.3.1.2.1** *P* **23** *L* **43** # 237
Barrass, Hugh Cisco

Comment Type **E** *Comment Status* **X**
"for10BASE-Te" missing space

SuggestedRemedy
Insert space after "for"

Proposed Response *Response Status* **O**

Cl **14** *SC* **14.4.2.1** *P* **27** *L* **3** # 238
Barrass, Hugh Cisco

Comment Type **E** *Comment Status* **X**
The editor's note appears to be out of date - there are changes in the clause.

SuggestedRemedy
Delete the editor's note.

Proposed Response *Response Status* **O**

Cl **14** *SC* **14.8** *P* **27** *L* **22** # 239
Barrass, Hugh Cisco

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

The editor's note appears to be out of date - there are changes in the clause.

SuggestedRemedy

Delete the editor's note.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.2.6.a** *P* **31** *L* **23** # 240
Barrass, Hugh Cisco

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

The commenter wishes to thank the editor for rectifying the error.

The editor's note is no longer necessary.

SuggestedRemedy

Delete the editor's note.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.2.7** *P* **31** *L* **13** # 241
Barrass, Hugh Cisco

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

The use of "may" implies that the indication is optional. It needs to be clear that the indication is mandatory when the LPI signaling is received.

SuggestedRemedy

Replace

"While RX_DV is de-asserted, the PHY may indicate that it is receiving..."

With

"While RX_DV is de-asserted, a PHY that supports low power idle operation shall indicate that it is receiving"

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.2.9a** *P* **33** *L* **4** # 242
Barrass, Hugh Cisco

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

The editor's note indicates that a control bit is needed to indicate "clock stoppable"

SuggestedRemedy

Add a control bit in Clause 45 PCS registers (separate comment)

Change

While the PHY device is indicating low power idle the PHY device may halt the RX_CLK as shown in .... if the RX_CLK_stoppable bit is asserted [Editor's note add reference].

With

While the PHY device is indicating low power idle the PHY device may halt the RX_CLK as shown in [figure 22-9a] if and only if the RX_CLK_stoppable bit is asserted [45.2.3.1.3a].

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* *L* # 243
Bennett, Michael LBNL

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

at the risk of getting the 8-ball, I think we should be consistent about capitalization of Low Power Idle. For example:

page 30:
line 13 Low Power Idle
line 38 low power idle

page 36:
line 10 low power idle
line 33 Low Power Idle
line 53 Low power Idle

SuggestedRemedy

Use "Low Power Idle" in sentences. Use "low power idle" in labels in figures and tables.

Proposed Response *Response Status* **O**

Cl **14** *SC* **3.1.2.1** *P* **232** *L* **43** # 244
Bennett, Michael LBNL

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

there needs to be a space between the words "for" and 10BASE-Te

SuggestedRemedy

insert a space

Proposed Response *Response Status* **O**

Cl **25** *SC* **3** *P* **54** *L* **16** # 245
Bennett, Michael LBNL

Comment Type **ER** *Comment Status* **X**

The cable plant specifications for untwisted shielded pair (UTP) of TP-PMD 11.1 are actually in 25.4.6.

SuggestedRemedy

change the reference to 25.4.6

Proposed Response *Response Status* **O**

Cl **45** *SC* **2.7.13a** *P* **98** *L* **5** # 246
Bennett, Michael LBNL

Comment Type **TR** *Comment Status* **X**

there is no EEE advertisement bit definition to 1000BASE-KX in Table 45-145

SuggestedRemedy

define a bit for 1000BASE-KX EEE

Proposed Response *Response Status* **O**

Cl **46** *SC* **1.7** *P* **103** *L* **25** # 247
Bennett, Michael LBNL

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

It looks like an editor's note follows the primative PLS_DATA_VALID.indication on the same line

SuggestedRemedy

move the note to it's own line

Proposed Response *Response Status* **O**

Cl **72** *SC* **6.4a** *P* **173** *L* **37** # 248
Bennett, Michael LBNL

Comment Type **ER** *Comment Status* **X**

the Signal_Detect units are already included so <units> should be removed. The same is true for line 41

SuggestedRemedy

remove <units> from lines 37 and 41

Proposed Response *Response Status* **O**

Cl **78** *SC* **1.2** *P* **188** *L* **35** # 249
Bennett, Michael LBNL

Comment Type **ER** *Comment Status* **X**

The PHY ojective for 1000BASE-KX is missing

SuggestedRemedy

Insert 1000BASE-KX below objective 3) 10GBASE-T and renumber remaining objectives as shown:

4) 1000BASE-KX
5) 10GBASE-KR
6) 10GBASE-KX4

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.5** *P* **195** *L* **10** # 250
Bennett, Michael LBNL

Comment Type **ER** *Comment Status* **X**

In the protocol column of Table 78-2, 10GBASE-KX should be 1000BASE-KX

SuggestedRemedy

replace 10GBASE-KX with 1000BASE-KX

Proposed Response *Response Status* **O**

Cl **78** *SC* **1.3** *P* **190** *L* **29** # 251
Bennett, Michael LBNL

Comment Type **ER** *Comment Status* **X**

We should be consistent in the use of terms such as Low Power mode (see line 25), Low Power Idle mode and EEE mode. Since the method we use to reduce energy use is called Low Power Idle, that is the term we should use.

SuggestedRemedy

replace EEE mode with Low Power Idle mode

Proposed Response *Response Status* **O**

Cl **78** *SC* **5** *P* **195** *L* **4** # 252
Bennett, Michael LBNL

Comment Type **ER** *Comment Status* **X**

there are no units associated with Tw_phy

SuggestedRemedy

add "nsec" after Tw_phy

Proposed Response *Response Status* **O**

Cl **78** *SC* **3** *P* **192** *L* **1** # 253
Bennett, Michael LBNL

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

Depends should be Depending

SuggestedRemedy

Replace Depends with Depending

Proposed Response *Response Status* **O**

Cl **78** *SC* **3** *P* **192** *L* **7** # 254
Bennett, Michael LBNL

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

"advertisement.See Annexes 28A and 73A on additional details" needs a space after the peroid and "on" should be "for"

SuggestedRemedy

replace "advertisement.See Annexes 28A and 73A on additional details" with

"advertisement. See Annexes 28A and 73A for additional details"

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.6.1** *P* **146** *L* # 255
Tellado, Jose Teranetics

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

Comment regarding last row of table 55-10: No need for reset PMA training. This was for inital PAM2 aquisition. The current draft claims the PAM2 PRBS33 will be continuously operating since start-up. This generates full power repeating sequence which could have EMI issues

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **126** *L* **35** # 256
Tellado, Jose Teranetics

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

Comment concerning Editor note: This is an implementation detail of the rx. Alert signal is easy to detect with very low latency. Filter/timing updates per lane are happening every 128x4 frames. Making the update a couple of frames later (<<512) will have no effect

Regarding coruption of subsequent LDPC codeword:
This is implementation detail also. We will have several Wake LDPC codewords and will be transitioning rx from LPI to normal data mode. First LDPC Frame will likely be corrupted anyway and has no unique information. See presentation

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.2.2.21** *P* **124** *L* # 257
Tellado, Jose Teranetics

Comment Type **TR** *Comment Status* **X**

If link partner in LPI then offset by~1/2 LPI super-frame, othewise Master starts refresh cycle~1/2 frame after Quiet and Slv 1 frame after. This prevents case where both enter simultanously without knowing what LP is doing.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.2.2.21** *P* **124** *L* # 258
Tellado, Jose Teranetics

Comment Type **TR** *Comment Status* **X**

Comment about editor note: Make Tq+Tr = 128. This way LPI cycle period is independent of Tr and a power of 2. Less implementation headaches. Keeps multple modems in a switch allgined (otherwise random based on LP)

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.1** *P* **126** *L* # 259
Tellado, Jose Teranetics

Comment Type **TR** *Comment Status* **X**

-53dBm is too low. It's 58dB below the PBO=0 tx level and below tx PSD mask.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **126** *L* **19** # 260
Tellado, Jose Teranetics

Comment Type **TR** *Comment Status* **X**

Comment concerning Editor note: Set TBD=0. No need for extra symbols.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* **3** *L* **4** # 261
Diab, Wael Broadcom

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

The abstract still has a TBD for Backplane Ethernet.

SuggestedRemedy

Suggest language similar to what is already there for TP Ethernet

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* **3** *L* **5** # 262

Diab, Wael Broadcom

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

The LLDP scheme is not covered in the abstract or keywords.

SuggestedRemedy

Suggest adding some language to cover LLDP in the For example: "A new LLDP TLVs is defined for negotiation system level energy efficiency parameters" and "TLV, LLDP" to the keyword list

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* **7** *L* **13** # 263

Diab, Wael Broadcom

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

Font on the TF Chair and Editor seems to be smaller and different than WG officer names.

SuggestedRemedy

Please adjust font to match list above

Proposed Response *Response Status* **O**

Cl **01** *SC* **5** *P* **18** *L* **1** # 264

Diab, Wael Broadcom

Comment Type **ER** *Comment Status* **X**

There are several abreviations that seem to be missing for example LPI

SuggestedRemedy

Please add the abbreviations

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* *L* # 265

Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **X**

There are several instances throughout the document where parameters are defined in multiple places, values are given in multiple places or different terminology is used for the same thing.

This can be more difficult to maintain and if there are subtle differences then it creates a potential conflict. Here are some examples:
- Table 78-2 summarizes key parameters and they are listed as TBD. However, a subset of these values are defined in the various PMD clauses that are being modified
- Section 78.1.3 overviews the LPI procedure. This text or portions of it are repeated in other places with inconsistent terminology. For instance, C78 used the terminology synchronous, while C55 uses the terminology symmteric.

SuggestedRemedy

Please consolidate to normative requirements in one place and consistant terminology. If readability is desired, a suggestion would be to make use of cross references.

Proposed Response *Response Status* **O**

Cl **22** *SC* **Figure 22-20a** *P* **34** *L* **12** # 266

Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **X**

As drawn, the figure seems to violate the layering conventions we use, specifically the system behaviour signals. I believe that the intent is for the system's management to be able to access LP_IDLE.request and the LP_IDLE.indicate not that there signals which are going around the MAC.

SuggestedRemedy

Please delete the system transmit and receive behaviour arrows. The management access can be explained in the text.

Proposed Response *Response Status* **O**

Cl **48** *SC* **2.4.2** *P* **110** *L* **18** # 267
Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **X**

It is unclear how frequently the /D20.5/ has to be inserted for all the XGMII colums to respond LPI. Conversly, it is also unlceat how long of an absence of the /D20.5/ character for the XGMII to respond as Idle.

SuggestedRemedy

Please specify the duration / rate that the /D20.5/ character has to appear

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* *L* # 268
Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **X**

Has the TF decided how to handle TPPMD? There seems to be several references in the editor's notes that there is a possibility to pull in TPPMD. There is significant technical content in editor's notes related to this.

SuggestedRemedy

Suggest that a a decision is made on this prior to WG preview so that document can be cleaned up one way or the other.

Proposed Response *Response Status* **O**

Cl **01** *SC* **4** *P* **17** *L* **1** # 269
Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **X**

There are several definitions that seem to be missing for example LPI, LPI mode wake signal, refresh signal, 10BASE-TE etc.

SuggestedRemedy

Please add the definitions

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* *L* # 270
Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **X**

For management, we will also need to work on the contents of the C30 Annexes like 30A.

SuggestedRemedy

Please add the Annexes prior to WG ballot

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.4** *P* **193** *L* **1** # 271
Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **X**

Once 802.3bc is completed, we will need to move the new TLVs into that section of the draft C77 (and any associated Annexes).

SuggestedRemedy

Please use this comment as a placeholder to do that prior to WG ballot. I will be happy to work with the editrors as needed.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.1** *P* **36** *L* **13** # 272
Booth, Brad AMCC

Comment Type **ER** *Comment Status* **X** *LATE*

Currently should not be stated. EEE only supports 100BASE-TX.

SuggestedRemedy

Remove currently from sentence.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.1** *P* **36** *L* **8** # 273
Booth, Brad AMCC

Comment Type **ER** *Comment Status* **X** *LATE*

Sentence construct is confusing as may implies that it is optional.

SuggestedRemedy

Delete the word optionally from the sentence.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.2** *P* **36** *L* **33** # 274
Booth, Brad AMCC

Comment Type **ER** *Comment Status* **X** *LATE*

Item g needs to be better stated to avoid confusion.

SuggestedRemedy

Change to read:
g) Optionally support Energy Efficient Ethernet as described in Clause 78.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.4.1** *P* **36** *L* **53** # 275
Booth, Brad AMCC

Comment Type **ER** *Comment Status* **X** *LATE*

Placement of optionally in e) is confusing. Needs clarification.

SuggestedRemedy

Change to read:
e) Optionally, interpret (generate) MII opcodes to enter or exit low power idle state.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.4.2** *P* **37** *L* **14** # 276
Booth, Brad AMCC

Comment Type **ER** *Comment Status* **X** *LATE*

The PCS should avoid the statement about power reduction.

SuggestedRemedy

Change to read:
e) Optionally, receive and process low power idle state control signals from the PCS; and

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.2.2** *P* **37** *L* **39** # 277
Booth, Brad AMCC

Comment Type **ER** *Comment Status* **X** *LATE*

Use of the term option is confusing.

SuggestedRemedy

Change to read:
The Receive process may support the low power idle state by...

Apply the change also to the Transmit:
The Transmit process may support the low power idle state by...

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.1** *P* **36** *L* **10** # 278
Booth, Brad AMCC

Comment Type **T** *Comment Status* **X** *LATE*

Eliminate the use of will.

SuggestedRemedy

Change will enter to enters.

Proposed Response *Response Status* **O**

Cl **14** *SC* **14** *P* **20** *L* **6** # 279
Booth, Brad AMCC

Comment Type **TR** *Comment Status* **X** *LATE*

I have some concern about using a lower case letter with a port type. Does the port type naming convention require upper case?

SuggestedRemedy

Change the port type from 10BASE-Te to 10BASE-TE.

Proposed Response *Response Status* **O**

Cl **14** *SC* **14.3.1.2** *P* **22** *L* **41** # 280
Booth, Brad AMCC

Comment Type **TR** *Comment Status* **X** *LATE*

Cabling should be referred to as Class D, not class D. And the referenced specification for Class D cabling is ISO/IEC 11801.

SuggestedRemedy

Change class to Class and reference 11801.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.2.9a** *P* **33** *L* **4** # 281
Booth, Brad AMCC

Comment Type **TR** *Comment Status* **X** *LATE*

Second paragraph is missing two references. RX_CLK_stoppable bit is undefined. Third paragraph is not required.

SuggestedRemedy

Change to read:
... as shown in Figure 22-9a if the...

Define RX_CLK_stoppable bit and add reference to 22.2.2.9a.

Delete third paragraph.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.7.1** *P* **34** *L* **1** # 282
Booth, Brad AMCC

Comment Type **TR** *Comment Status* **X** *LATE*

Figure 22-20a conflicts with Figure 22-3.

SuggestedRemedy

PLS_DATA.request arrow is in the wrong direction. TX_CLK and RX_CLK are missing. RX_DV mapping to PLS_DATA_VALID.indicate mapping is not shown. COL and CRS are not shown, and while not used in full duplex, they should be shown in the mapping. The LP_IDLE's should come from Station Management.

Proposed Response *Response Status* **O**

Cl **99** *SC* **99** *P* **5** *L* **5** # 283
Booth, Brad AMCC

Comment Type **E** *Comment Status* **X** *LATE*

Period in front of Section Four.

SuggestedRemedy

Please remove period.

Proposed Response *Response Status* **O**

Cl **14** *SC* **14.1** *P* **20** *L* **17** # 284
Booth, Brad AMCC

Comment Type **ER** *Comment Status* **X** *LATE*

It is misleading to refer to the 10BASE-Te as being the Energy-Efficient PHY type as this does not use the protocol described in Clause 78.

SuggestedRemedy

Remove reference to Energy-Efficient relative to 10BASE-Te and stipulate that this port type has reduced voltage range requirements.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.1** *P* **30** *L* **14** # 285
Booth, Brad AMCC

Comment Type **ER** *Comment Status* **X** *LATE*

Why is it Low Power Idle here but low power idle elsewhere in the clause.

SuggestedRemedy

The lowercase version, low power idle, should be used.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.1.1** *P* **36** *L* **10** # 286
Booth, Brad AMCC

Comment Type **ER** *Comment Status* **X** *LATE*

Terms seem to be mixed up again.

SuggestedRemedy

There are various forms of low power mode, low power idle mode, Low power Idle mode, low power idle state, etc. Use the term low power idle state.

For example, ... the PHY will enter the low power idle state during periods...

Proposed Response *Response Status* **O**

Cl **48** *SC* **48.2.4.2** *P* **110** *L* **18** # 291
McClellan, Brett Solarflare

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

I'm concerned about the choice to break up XAUI coded idle columns with the /D20.5/ character to indicate LPI. From my limited knowledge of the XGXS PCS receiver it appears to me that breaking the ||A|| columns will prevent the PCS from finding or maintaining column alignment and breaking the ||R|| column may prevent the PCS from performing clock rate compensation, thus causing fault conditions which would be indicated by local fault at the XGMII and requiring additional recovery time.

SuggestedRemedy

I would like to hear comment from vendors of the XGXS PCS on whether this change is of any concern. Or, if this has already been reviewed within the task force perhaps the editor can direct me to a presentation justifying the change.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.2.2.21** *P* **129** *L* **51** # 292
McClellan, Brett Solarflare

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

Sentence is awkward: The SLEEP signal is signaled using 9 full LDPC frames

SuggestedRemedy

The SLEEP signal uses 9 full LDPC frames

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2.1** *P* **131** *L* **21** # 293
Lundy, Sean Aquantia

Comment Type **ER** *Comment Status* **X** *LATE*

lpi_quiet_period should be replaced with lpi_quiet_time

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2.1** *P* **131** *L* **31** # 294
Lundy, Sean Aquantia

Comment Type **ER** *Comment Status* **X** *LATE*

lpi_wake_period is not defined

SuggestedRemedy

Change to lpi_wake_time

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.4.2.2.1** *P* **143** *L* **24** # 295
Lundy, Sean Aquantia

Comment Type **ER** *Comment Status* **X** *LATE*

PHY Frame should be LDPC Frame. This occurs on line 24 and line 25.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.2.2.3.1** *P* **119** *L* **10** # 296
Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

Sentence is not grammatically correct

SuggestedRemedy

Remove 'and' from '..and the transmit function...'

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.1.4** *P* **118** *L* # 297
Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

Figure 55-4 contains two descriptions 'dashed rectangles are used to indicate signals...'

SuggestedRemedy

Delete one description

Proposed Response *Response Status* **O**

Cl **55** *SC* **Many** *P* *L* # 298
Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

Sleep and SLEEP are used throughout the document. Similar capitalization for other LPI states.

See for example 55.3.2.2.21 and 55.3.5

SuggestedRemedy

Standardise on one. Suggest Sleep.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **126** *L* **23** # 299
Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

Active pair is not defined.

SuggestedRemedy

State that the active pair defines only which pair will be used for the next refresh.

[Some earlier alert proposals also used active pair to determine where the alert would appear but this is no longer the case].

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **126** *L* **30** # 300
Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

I am concerned that receivers may synchronize training to a refresh signal which is replaced by the alert sequence. In the present proposal alert is pam-2, but not precoded, and therefore cannot be used to update coefficients in the same manner as the pam-2 precoded refresh signal. Therefore the alert could corrupt coefficients / timing. This is particularly a concern if the alert replaces a refresh signal. The alert is followed immediately by PAM-16 so there is little opportunity to recover the coefficients.

[however, alert corrupts only 1 pair]

SuggestedRemedy

See presentation.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **126** *L* **30** # 301

Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

What happens if an alert occurs at the same time as a refresh on another pair? None of the proposals make clear whether this refresh is transmitted or not.

If the refresh is not transmitted, this could cause problems with adaptive filters, which are expecting valid PAM-2 precoded data at that time.

SuggestedRemedy

See presentation

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **126** *L* **40** # 302

Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

This paragraph is vague.

Imprecise synchronization could limit power savings opportunity, make testing more difficult and cause interoperability problems.

See also items 4) and 5) on page 128

SuggestedRemedy

Use the synchronization scheme proposed in presentation submitted to the November meeting.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **128** *L* **12** # 303

Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

Editor's note recommends that we require LPI capable PHYs to support the long LFSR PAM-2 training sequence.

This seems sensible, as it reduces the number of options in the standard.

SuggestedRemedy

Make it a requirement that LPI capable PHYs support the long LFSR PAM-2 training sequence.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **129** *L* **42** # 304

Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

tx_lpi_state_active should be defined more rigorously.

When does the LPI state start and end ?

SuggestedRemedy

Define that the LPI state begins immediately after the sleep finishes and lasts until the alert is sent (on the tx side) / detected (on the rx side).

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2.1** *P* **131** *L* **632** # 305

Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

The timer names do not match those used in other clauses (e.g. Clause 40).

Though this is unavoidable to some extent, it can be improved.

SuggestedRemedy

Replace lpi_tx_phy_wake_timer with lpi_wake_timer

There may be other similar changes.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.4** *P* **133** *L* # 306

Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

The state diagrams are old.

They should be updated.

SuggestedRemedy

See presentation at November meeting

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.4** *P* **135** *L* # 307

Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

The dashed box linestyle does in the proposed Figure 55-15 does not match that in the proposed Figure 55-17 on page 137.

Several figures are missing text specifying that the transitions/states in the dashed boxes are for EEE capable PHYs only

SuggestedRemedy

Use the linestyle on page 137 throughout the text for eee states.

Add text to the figures.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.4** *P* **140** *L* # 308

Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

Proposed Figure 55-9

This state machine should not be in the PCS. Move it to the PMA.

The wake state is not required.

SuggestedRemedy

See presentation.

Move the state machine into the PMA Rx, remove the wake state.

Proposed Response *Response Status* **O**

Cl **55** *SC* *P* *L* # 309

Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

General.

Check capitalization of auto-negotiation

SuggestedRemedy

Use a consistent capitalization.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **139** *L* # 310

Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

Proposed Figure 55-19

With the current state machine the sleep signal could be sent for 9 or 10 frames [since up to 1 complete frame could be transmitted in state TX_NORMAL].

The last sleep frame may not be detected by the PCS if it powers down the PMA as soon as it detects sleep.

If the end of the sleep signal is used to time refreshes then this ambiguity needs to be eliminated. There is still an ambiguity if the start of the sleep signal is used to time refreshes.

SuggestedRemedy

Use the synchronization mechanism described in the submitted presentation.

If the synchronizatioin mechanism depends on timing based on the sleep signal then this problem needs to be solved another way.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.1.3.1** *P* **116** *L* **11** # 311

Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

The PMA supports both a low power idle transmit state and a low power idle receive state. The current statement suggests there is only one PMA low power idle state.

SuggestedRemedy

Change the text to '...the PMA supports a low power idle transmit state and a low power idle receive state.'

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **126** *L* **24** # 312

Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

The clause does not define what quiet means for a non-active pair.

SuggestedRemedy

State that pairs that are not transmitting the refresh signal must meet the tx power requirements of clause 55.3.5.1, except if the alert signal is being transmitted.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2** *P* **126** *L* **37** # 313

Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

The editor's note states that the non-THP encoded signal could corrupt following symbols.

If we require that the delay line of the THP is initialized appropriately then this problem goes away. [this initialization is required during link training so the capability already exists].

SuggestedRemedy

Require that the delay line of the THP is initialized during the alert signal.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2.2** *P* **129** *L* **52** # 314

Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

The definition suggests that the request goes away once the PHY transitions to LPI state.

SuggestedRemedy

Rewrite :

'Set to True when the MAC is requesting that the PHY operate in the LPI transmit state.'

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2.1** *P* **131** *L* **21** # 315

Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

The lpi_tx_refresh_timer is defined as using a period equal to lpi_quiet_period LDPC frames. This is incorrect.

SuggestedRemedy

State that the lpi_tx_refresh_timer uses a period equal to lpi_refresh_period LDPC frames.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.4** *P* **133** *L* # 316

Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

The symbols in the state diagrams are not correct (see page 11 of the draft). This applies to pages pages 136, 139, 140,141.

SuggestedRemedy

Ensure that the state diagrams use the symbol set described on page 11.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.4** *P* **135** *L* # 317

Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

The transitions from the TX_INIT block cross inappropriately.

SuggestedRemedy

Redraw the transition lines so that they do not cross.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.4** *P* **138** *L* # 318

Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

The transition out of RX_W should not be 'R_TYPE(rx_coded)=C', since in this case the state machine can exit back to data mode with an error condition.

SuggestedRemedy

The transition should be R_TYPE(rx_coded) = I

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.4** *P* **132** *L* **14** # 319

Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

The editor's comment looks for a better way to detect C but not L or I.

SuggestedRemedy

Describe it as a member of C and not /I/ and not /L/

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.3.5.2.2** *P* **129** *L* **51** # 320

Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

The text refers to low power idle mode; everywhere else it is described as a state.
Furthermore the text does not state whether this is a transmit or a receive lpi state.

Same for rx_lpi_req

SuggestedRemedy

Change mode to state. Clarify that the state is the low power idle transmit state for tx_lpi_reg.
Clarify that the state is the low power idle receive state for rx_lpi_reg.

Proposed Response *Response Status* **O**

Cl **55** *SC* **55.6.3** *P* **146** *L* **39** # 321

Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

According to this text, lpi_wake_time is chosen from 1 to 9 PHY frames.

I think we need to look closely at this requirement, to ensure that in the worst conditions PHYs are able to return to an error free PAM-16 data mode after the wake frames, without compromising PHY and system power savings.

The exact requirements for this parameter are dependent on Tq/Tr/ frequency drift limits.

SuggestedRemedy

Increase the number of frames allowed for the wake time.
Exact number TBD, needs more discussion.

A presentation will be submitted for the November meeting.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.2.3** *P* **191** *L* **37** # 322
Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

Tw_Phy as defined does not match the description in Clause 55.

The first idles transmitted on the MDI do not indicate that real data is capable of being transmitted. My understanding was that the first idles are the wake signal, during which time it is guaranteed that idles are transmitted by the MAC and no data may be sent.

Also, in clause 55, the wake time is defined as the time the wake signal is sent.

Why does the definition here include the MDI interface?

SuggestedRemedy

Define Tw_PHY as the time between IDLE appearing on the XGMII interface and when the the first codewords on the XGMII are guaranteed to be received by the remote PHY, assuming error-free operation.

Clarify definition of wake time / phy wake time.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.4.2.1** *P* **193** *L* **40** # 323
Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

The minimum system wake time also needs to be bounded.

e.g. for 10GBASE-t the minimum wake has to allow for sleep, alert, phy wake at a minimum before data will be passed. [this is at least 9+4+1=14 LDPC frames with the current draft]

SuggestedRemedy

Add a description of the minimum wake time for each PHY type.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.4.2.4** *P* **194** *L* **29** # 324
Parnaby, Gavin Solarflare Communica

Comment Type **T** *Comment Status* **X** *Late email*

The sentence regarding refresh duty cycle changes is very vague.

What is 'reasonably sure'?

In 10GBASE-T the timing of this parameter change is critical.

SuggestedRemedy

Clarify when the parameter change takes place on the link; is it only after a link retrain?

If there is another case, it may be problematic to time the change on both sides of the link.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.5** *P* **194** *L* **45** # 325
Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

'The maximal PHY recovery time is defacement for different protocols' seems to be a typo.

SuggestedRemedy

change to 'A maximum PHY recovery time is defined for each physical protocol'

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.4** *P* **190** *L* **33** # 326
Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

There are 7 protocols listed in the table. The text says 6 protocols.

SuggestedRemedy

Change text to '...the following seven...'

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.2.1** *P* **191** *L* **6** # 327
Parnaby, Gavin Solarflare Communica

Comment Type **E** *Comment Status* **X** *Late email*

The subclause defines an LPI state. For PHYs that support asymmetric lpi, there are lpi transmit and receive states.

SuggestedRemedy

Add LowPowerTx_st and LowPowerRx_st to the description, for PHYs that support asymmetric LPI states.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.2.3.4** *P* **43** *L* **22** # 328
Dove, Daniel ProCurve Networking

Comment Type **ER** *Comment Status* **X** *LATE*

Spelling - continuos

SuggestedRemedy

Spelling - change continuos to continuous.

Proposed Response *Response Status* **O**

Cl **24** *SC* **24.2.3.4** *P* **43** *L* **43** # 329
Dove, Daniel ProCurve Networking

Comment Type **ER** *Comment Status* **X** *LATE*

Grammar: "is waked up"

SuggestedRemedy

Change to "is woken up"

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.4.11.1** *P* **57** *L* **16** # 330
Dove, Daniel ProCurve Networking

Comment Type **ER** *Comment Status* **X** *LATE*

Figure 25-1 has a spelling error in the PLUS_V state. "Positove"

SuggestedRemedy

Change to "Positive"

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.6.1** *P* **88** *L* **44** # 331
Dove, Daniel ProCurve Networking

Comment Type **ER** *Comment Status* **X** *LATE*

Spelling

SuggestedRemedy

Change "PHY Contrl" to "PHY Control"

Proposed Response *Response Status* **O**

Cl **48** *SC* **48.2.4.2** *P* **110** *L* **12** # 332
Dove, Daniel ProCurve Networking

Comment Type **ER** *Comment Status* **X** *LATE*

There is and Angstrom symbol in the text

SuggestedRemedy

Replace with proper symbol which I believe is an "@".

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.3.2.4a** *P* **107** *L* **20** # 333
Dove, Daniel ProCurve Networking

Comment Type **T** *Comment Status* **X** *LATE*

Figure 46-8a shows wake time being 4 bit times long

SuggestedRemedy

Insert squiggly "some time later" symbols into the figure to indicate that the time duration of wake time is variable.

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.3.1.5a** *P* **105** *L* **6** # 334

Dove, Daniel ProCurve Networking

Comment Type **T** *Comment Status* **X** *LATE*

Figure 46-7a shows wake time being 4 bit times long

SuggestedRemedy

Insert squiggly "some time later" symbols into the figure to indicate that the time duration of wake time is variable.

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.4.11.5** *P* **60** *L* **19** # 335

Dove, Daniel ProCurve Networking

Comment Type **TR** *Comment Status* **X** *LATE*

Table values for Assert Time and Deassert Time are set to 5uS. These periods of time are inconsistent with the Assert Threshold of 1000mV pk/pk and the Deassert Threshold of 200mV.

Those thresholds apply for 350uS because the 100BASE-T encoding of IDLE guarantees a "fat pulse" (pulse duration of 10 bits) will arrive at the receiver in this timeframe.

If we are to reduce the Assert/Deassert times, we cannot guantee the "fat pulse" arrival any more, and need to change the thresholds.

SuggestedRemedy

Since we want to keep the 5uS timers, my recommendation is to analyze the amplitude requirements and change the Assert/Deassert thresholds

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.2.2.6a** *P* **67** *L* **12** # 336

Dove, Daniel ProCurve Networking

Comment Type **TR** *Comment Status* **X** *LATE*

Incorrect code shown in TXD[7:0]

SuggestedRemedy

Change from "0001" to "01"

Proposed Response *Response Status* **O**

Cl **48** *SC* **48.2.4.2** *P* **110** *L* **18** # 337

Dove, Daniel ProCurve Networking

Comment Type **TR** *Comment Status* **X** *LATE*

The words column and row are transposed

SuggestedRemedy

Replace with "randomly in one row of each column during |||I||.

Proposed Response *Response Status* **O**