

CI 00 SC 0 P L # 270  
Diab, Wael Broadcom

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT.

CI 00 SC 0 P L # 265  
Diab, Wael Broadcom

Comment Type TR Comment Status D

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 symmetric.

*SuggestedRemedy*

Please consolidate to normative requirements in one place and consistent terminology. If readability is desired, a suggestion would be to make use of cross references.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Harmonization of terms will be carried out by the editorial team.

Clause 78 will contain a summary of key parameters for different PMDs but the normative text will be left to the specific PMDs

CI 00 SC 0 P L # 268  
Diab, Wael Broadcom

Comment Type TR Comment Status D

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 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 W

PROPOSED ACCEPT IN PRINCIPLE.

While we originally considered pulling TPPMD into 802.3, we were unable to find the resources to take on this task.

Editors notes indicating that we will pull in TPPMD will be removed.

CI 00 SC 0 P L # 243  
Bennett, Michael LBNL

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Capitalized and use "Low Power Idle" when it refers to a standard defined state. Leave it in lower case when it is just normal English.

Cl 00 SC 0 P00 L0 # 137  
 Hajduczenia, Marek ZTE Corporation

Comment Type ER Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Editor will perform global hunt and remove state machine and replace with either "state" or "state diagram" where appropriate.

Cl 00 SC 0 P00 L0 # 136  
 Hajduczenia, Marek ZTE Corporation

Comment Type ER Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

We will do this, but it will be a continuing exercise as the draft changes so the commenter is requested to maintain a vigilant eye on any non-live cross references that remain. Editor needs help in linking crossreferences to times not in the draft but in the larger 802.3 document.

Cl 00 SC 0 P00 L0 # 127  
 Hajduczenia, Marek ZTE Corporation

Comment Type ER Comment Status D *lp terminology*

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Stick with:  
 Quiet Mode

Cl 00 SC 0 P00 L0 # 126  
 Hajduczenia, Marek ZTE Corporation

Comment Type ER Comment Status D *lp terminology*

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Terminology will be rationalized

Cl 00 SC 0 P 00 L 0 # 167  
 Hajduczenia, Marek ZTE Corporation  
 Comment Type T Comment Status D Ip terminology  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Editors will rationalize terminology

Cl 00 SC 0 P 00 L 0 # 138  
 Hajduczenia, Marek ZTE Corporation  
 Comment Type ER Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 It was a editorial marker. If no one objects to the time values, that's what we'll use.

Cl 00 SC 0 P 00 L 0 # 122  
 Hajduczenia, Marek ZTE Corporation  
 Comment Type ER Comment Status D  
 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 W  
 PROPOSED ACCEPT.  
 Editor will use symbol instead of "<=".

Cl 00 SC 0 P 00 L 0 # 135  
 Hajduczenia, Marek ZTE Corporation  
 Comment Type ER Comment Status D  
 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 W  
 PROPOSED ACCEPT.  
 .x will be replace with actual references.

Cl 00 SC 0 P 00 L 0 # 141  
 Hajduczenia, Marek ZTE Corporation  
 Comment Type ER Comment Status D  
 "nsec" as a unit is not used anywhere else in the draft. "ns" is.  
 "usec" as a unit is not used anywhere else in the draft. "us" is.  
 "msec" as a unit is not used anywhere 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 W  
 PROPOSED ACCEPT.

Cl 00 SC 0 P 00 L 0 # 128  
 Hajduczenia, Marek ZTE Corporation

Comment Type ER Comment Status D  
 When referring 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 W  
 PROPOSED REJECT.

Needs to be checked. I see IDLE when referring to an idle character/symbol

Cl 00 SC 0 P 00 L 0 # 116  
 Hajduczenia, Marek ZTE Corporation

Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 00 SC 0 P 00 L 00 # 113  
 Hajduczenia, Marek ZTE Corporation

Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Will mark up detailed changes in a separte sheet.

Cl 00 SC 0 P 1 L 56 # 15  
 Dawe, Piers Avago Technologies

Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 00 SC 0 P 11 L 7 # 114  
 Hajduczenia, Marek ZTE Corporation

Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

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

Comment Type T Comment Status D  
 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

CI 01 SC 1.4 P17 L21 # 16  
 Dawe, Piers Avago Technologies

Comment Type T Comment Status A  
 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.

Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 We will not pull TP-PMD into 802.3

CI 01 SC 1.4 P18 L26 # 17  
 Dawe, Piers Avago Technologies

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

CI 01 SC 1.5 P18 L34 # 18  
 Dawe, Piers Avago Technologies

Comment Type T Comment Status D  
 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 W  
 PROPOSED REJECT.  
 Page/line reference seems to be incorrect. Will reconsider after resolving page/line number reference

CI 01 SC 4 P17 L1 # 269  
 Diab, Wael Broadcom

Comment Type TR Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

CI 01 SC 5 P18 L1 # 264  
 Diab, Wael Broadcom

Comment Type ER Comment Status D  
 There are several abbreviations that seem to be missing for example LPI

SuggestedRemedy  
 Please add the abbreviations

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 14 SC 14 P20 L6 # 279  
 Booth, Brad AMCC

Comment Type TR Comment Status D 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 W  
 PROPOSED REJECT.

There is not a port type naming convention defined. During an earlier meeting, this issue was discussed and the preference at that time was for using a lower case for 10BASE-Te.

Cl 14 SC 14.1 P20 L 17 # 284  
Booth, Brad AMCC

Comment Type ER Comment Status D 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 W

PROPOSED REJECT.

10BASE-T already implements the low power idle concept being proposed in Clause 78. 10BASE-Te uses the same signaling method as 10BASE-T and makes it energy efficient by lowering transmit voltage range.

Cl 14 SC 14.1.1 P20 L 16 # 21  
Dawe, Piers Avago Technologies

Comment Type E Comment Status D

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 W

PROPOSED REJECT.

Out of scope.

Cl 14 SC 14.1.1 P20 L 19 # 20  
Dawe, Piers Avago Technologies

Comment Type E Comment Status D

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 W

PROPOSED REJECT.

The same language is used to define the relationship of all the clauses defining a particular PHY type to the overall standard.

Cl 14 SC 14.3.1.2 P22 L 41 # 280  
Booth, Brad AMCC

Comment Type TR Comment Status D 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 W

PROPOSED ACCEPT.

Cl 14 SC 14.3.1.2 P23 L 3 # 22  
Dawe, Piers Avago Technologies

Comment Type E Comment Status D

Shouldn't use colour in 802.3

*SuggestedRemedy*

Change all the blue to black

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 14 SC 14.3.1.2.1 P 23 L 43 # 237  
 Barrass, Hugh Cisco  
 Comment Type E Comment Status D  
 "for10BASE-Te" missing space  
 SuggestedRemedy  
 Insert space after "for"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 14 SC 14.4.2.1 P 27 L 3 # 238  
 Barrass, Hugh Cisco  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 14 SC 14.8 P 27 L 22 # 239  
 Barrass, Hugh Cisco  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 14 SC 14.9 P 28 L 1 # 23  
 Dawe, Piers Avago Technologies  
 Comment Type E Comment Status D  
 PICS is 14.10  
 SuggestedRemedy  
 Change 14.9 to 14.10, several times  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 14 SC 3.1.2.1 P 232 L 43 # 244  
 Bennett, Michael LBNL  
 Comment Type E Comment Status D  
 there needs to be a space between the words "for" and 10BASE-Te  
 SuggestedRemedy  
 insert a space  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Duplicate of comment #237.

Cl 22 SC 22.2.1 P 30 L 14 # 285  
 Booth, Brad AMCC  
 Comment Type ER Comment Status D 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 W  
 PROPOSED ACCEPT.

Cl 22 SC 22.2.2.6.a P 31 L 23 # 240  
 Barrass, Hugh Cisco  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 22 SC 22.2.2.7 P31 L 13 # 241  
Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

Cl 22 SC 22.2.2.7 P32 L 10 # 24  
Dawe, Piers Avago Technologies

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

Cl 22 SC 22.2.2.9a P33 L 4 # 94  
CHOU, JOSEPH REALTEK SEMICON

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

See text from #242.

Modify the figure to show (at least) 9 cycle delay.

Cl 22 SC 22.2.2.9a P33 L 4 # 242  
Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Merge the resolution of this comment and #94 to produce:

While the PHY device is indicating low power idle it may halt the 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 and only if the RX\_CLK\_stoppable bit is asserted [45.2.3.1.3a].

CI 22 SC 22.2.2.9a P 33 L 4 # 281  
 Booth, Brad AMCC

Comment Type TR Comment Status D 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 W

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #242. The third paragraph matches the style of the base document for all of the figures in this subclause.

CI 22 SC 22.7.1 P 34 L 1 # 282  
 Booth, Brad AMCC

Comment Type TR Comment Status D 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 W

PROPOSED ACCEPT IN PRINCIPLE.

The diagram needs redrawing, with the following:

1. PLS\_DATA.request arrow is in the wrong direction in Figure 22-3 in 802.3-2008 - make the change as part of this amendment as a service to humanity.
2. Add in TX\_CLK and RX\_CLK.
3. Add a note that RX\_DV, COL & CRS mapping is unchanged and not shown.
4. The LP\_IDLE's should come from Station Management.

CI 22 SC Figure 22-20a P 34 L 12 # 266  
 Diab, Wael Broadcom

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

See #282

The station management will be shown as the origin of these signals.

CI 24 SC 24.1.1 P 36 L 10 # 278  
 Booth, Brad AMCC

Comment Type T Comment Status D LATE

Eliminate the use of will.

SuggestedRemedy

Change will enter to enters.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 24 SC 24.1.1 P 36 L 10 # 286  
 Booth, Brad AMCC

Comment Type ER Comment Status D 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Pending on the consensus of the terminology used in EEE draft.

Cl 24 SC 24.1.1 P 36 L 10 # 198  
 Barrass, Hugh Cisco  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 24 SC 24.1.1 P 36 L 12 # 199  
 Barrass, Hugh Cisco  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 24 SC 24.1.1 P 36 L 13 # 272  
 Booth, Brad AMCC  
 Comment Type ER Comment Status D LATE  
 Currently should not be stated. EEE only supports 100BASE-TX.  
 SuggestedRemedy  
 Remove currently from sentence.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 24 SC 24.1.1 P 36 L 8 # 273  
 Booth, Brad AMCC  
 Comment Type ER Comment Status D LATE  
 Sentence construct is confusing as may implies that it is optional.  
 SuggestedRemedy  
 Delete the word optionally from the sentence.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 24 SC 24.1.2 P 36 L 33 # 274  
 Booth, Brad AMCC  
 Comment Type ER Comment Status D 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Please refer to the remedy and response to comment #200

Cl 24 SC 24.1.2 P 36 L 33 # 200  
 Barrass, Hugh Cisco  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 24 SC 24.1.4.1 P 36 L 53 # 2  
 Dawe, Piers Avago Technologies  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 24 SC 24.1.4.1 P 36 L 53 # 201  
 Barrass, Hugh Cisco  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Please refer to comment #2

Cl 24 SC 24.1.4.1 P 36 L 53 # 275  
 Booth, Brad AMCC  
 Comment Type ER Comment Status D 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Please refer to comment #2

Cl 24 SC 24.1.4.2 P 37 L 14 # 276  
 Booth, Brad AMCC  
 Comment Type ER Comment Status D 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 In order to make the phrase style consistent with other text, change to  
 "Optionally, receiving and processing low power idle state control signals from the PCS; and"

Cl 24 SC 24.1.6 P 37 L 27 # 25  
 Dawe, Piers Avago Technologies  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 24 SC 24.1.6 P 38 L 8 # 26  
 Dawe, Piers Avago Technologies  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED REJECT.  
 The use of capital letters are in original text.

Cl 24 SC 24.2.2 P 37 L 39 # 277  
Booth, Brad AMCC

Comment Type ER Comment Status D 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 W

PROPOSED ACCEPT IN PRINCIPLE.

The use of "mode" is pending on the consensus of the terminology used in EEE draft.

(note: similar change will also be made on page 39 line 1)

Cl 24 SC 24.2.2.5 P 41 L 32 # 183  
GUPTA, SUJAY Infosys Technologies

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

Cl 24 SC 24.2.2.5 P 41 L 41 # 186  
GUPTA, SUJAY Infosys Technologies

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

Cl 24 SC 24.2.2.5 P 41 L 48 # 184  
GUPTA, SUJAY Infosys Technologies

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

Cl 24 SC 24.2.3.4 P 43 L 10 # 185  
 GUPTA, SUJAY Infosys Technologies

Comment Type E Comment Status D  
 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 W  
 PROPOSED REJECT.

However, it's open to other opinion.

Cl 24 SC 24.2.3.4 P 43 L 22 # 328  
 Dove, Daniel ProCurve Networking

Comment Type ER Comment Status D LATE  
 Spelling - continuos

SuggestedRemedy

Spelling - change continuos to continuous.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 24 SC 24.2.3.4 P 43 L 27 # 202  
 Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.  
 Would like to keep the timer vauue to 30us since it is used to determine if the link fails.

Cl 24 SC 24.2.3.4 P 43 L 43 # 329  
 Dove, Daniel ProCurve Networking

Comment Type ER Comment Status D LATE  
 Grammar: "is waked up"

SuggestedRemedy

Change to "is woken up"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 24 SC 24.4.1 P 49 L 53 # 1  
Dawe, Piers Avago Technologies

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.  
Change to  
'if the Energy Efficient Ethernet is implemented and Low Power Idle mode is utilized.'  
Please refer to comment #198

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

Comment Type E Comment Status D

New material should be underlined

*SuggestedRemedy*

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

Proposed Response Response Status W

PROPOSED ACCEPT.  
There are more text to be underlined in subclause 24.3 and 24.4.

Cl 24 SC 24.4.1.5 P 50 L 33 # 180  
GUPTA, SUJAY Infosys Technologies

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

Cl 25 SC 25.3 P 54 L 19 # 3  
Dawe, Piers Avago Technologies

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

Cl 25 SC 25.3 P 54 L 53 # 4  
Dawe, Piers Avago Technologies

Comment Type E Comment Status D

Untidy table wasting space

*SuggestedRemedy*

Make the table full width

Proposed Response Response Status W

PROPOSED REJECT.  
This table was created by the original author.

Cl 25 SC 25.3 P 54 L 9 # 95  
CHOU, JOSEPH REALTEK SEMICON

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT.

Cl 25 SC 25.4.11 P 55 L 41 # 203  
 Barrass, Hugh Cisco  
 Comment Type T Comment Status D  
 There is no enable for the LPI function.  
 SuggestedRemedy  
 Change  
 implemented and enabled  
 to  
 implemented  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 25 SC 25.4.11.1 P 55 L 50 # 170  
 Hajduczenia, Marek ZTE Corporation  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED REJECT.  
 The Encoder and Decoder blocks in original TPPMD standard do not allow the capability to deactivate or set the park state, while in EEE their function need to be halted and restarted.

Cl 25 SC 25.4.11.1 P 57 L 16 # 330  
 Dove, Daniel ProCurve Networking  
 Comment Type ER Comment Status D LATE  
 Figure 25-1 has a spelling error in the PLUS\_V state. "Positove"  
 SuggestedRemedy  
 Change to "Positive"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 25 SC 25.4.11.3 P 59 L 14 # 204  
 Barrass, Hugh Cisco  
 Comment Type T Comment Status D  
 There is no enable for LPI.  
 SuggestedRemedy  
 Change "enabled" to "implemented"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 25 SC 25.4.11.4 P 59 L 22 # 205  
 Barrass, Hugh Cisco  
 Comment Type T Comment Status D  
 There is no enable for LPI.  
 SuggestedRemedy  
 Change "enabled" to "implemented"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 25 SC 25.4.11.5 P 60 L 19 # 47  
 Healey, Adam LSI Corporation  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

25.4.11.8 Changes to 10.1.2 "Transmitter"  
 During the Low Power Idle mode, when tx\_quiet is deasserted, the transmitter output shall deliver a signal that exceeds Signal\_Detect assertion threshold within 2 us, and deliver a fully compliant 100BASE-TX signal within 5 us.

Cl 25 SC 25.4.11.5 P 60 L 19 # 335  
 Dove, Daniel ProCurve Networking

Comment Type TR Comment Status D 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 guarantee 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 W

PROPOSED ACCEPT.

Note: Will add the following stratments and modify Table 25-3.

25.4.11.6 Changes to 10.1.1.1 "Signal\_Detect assertion threshold"

The TP-PMD subclause 10.1.1.1 is applicable during the normal operation. During the Low Power Idle mode, when rx\_lpi is asserted, Signal\_Detect shall be asserted per 25.4.11.3 for any valid peak to peak signal, VSDA, of >400 mV for UTP, and > 500 mV for STP.

25.4.11.7 Changes o 10.1.1.2 "Signal\_Detect deassertion threshold"

The TP-PMD subclause 10.1.1.2 is applicable during the normal operation. During the Low Power Idle mode, when rx\_lpi is deasserted, Signal\_Detect shall be deasserted per 25.4.11.4 for any valid peak to peak signal, VSDA, of <100 mV for UTP, and < 120 mV for STP.

Cl 25 SC 3 P 54 L 16 # 245  
 Bennett, Michael LBNL

Comment Type ER Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Note: This error exists in the original text.

Cl 28C SC 28C.12 P 196 L 41 # 48  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

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

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT.

Cl 35 SC 35 P 65 L 1 # 172  
 Hajduczenia, Marek ZTE Corporation

Comment Type E Comment Status D

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 W

PROPOSED REJECT.

IEEE Standards Association staff editors have instructed the editors of 802.3 amendments to use this approach when added clauses between existing clauses of the base document. To renumber all the clauses of the base document would open too much of the base to changes and would cause confusion about what was being changed.

The clauses will all be renumbered during the next revision, when all amendments are gathered together and brought into the main document (along with maintenance changes).

Cl 35 SC 35.1.1 P 6 L 16 # 5  
 Dawe, Piers Avago Technologies

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

The commenter is correct that this should be included in 35.1.1. However, it is defined for both 1000BASE-KX and 1000BASE-T.

Add bullet point h) to 35.1.1

h) The GMII may also support low power idle signaling as defined for Energy Efficient Ethernet for some PHY types (see Clause 78).

Cl 35 SC 35.2.1 P 65 L 14 # 6  
 Dawe, Piers Avago Technologies

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Change 'The mapping changes slightly when Low Power Idle signaling is in operation.'

to 'The mapping changes slightly when optional Low Power Idle signaling is in operation.'

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

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

Cl 35 SC 35.2.2.6a P 67 L 12 # 336  
 Dove, Daniel ProCurve Networking

Comment Type TR Comment Status D

Incorrect code shown in TXD[7:0]

SuggestedRemedy

Change from "0001" to "01"

Proposed Response Response Status W

PROPOSED ACCEPT.

LATE

**Cl 35**    **SC 35.2.2.7**                      **P 68**            **L 42**            # **173**  
Hajduczenia, Marek                      ZTE Corporation

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

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

*SuggestedRemedy*  
As per comment.

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

**Cl 35**    **SC 35.2.2.9a**                      **P 69**            **L 32**            # **159**  
Hajduczenia, Marek                      ZTE Corporation

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

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

*SuggestedRemedy*  
Provide the missing reference

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

See #206

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

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

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**    **W**  
PROPOSED ACCEPT IN PRINCIPLE.

Accept the remedy for this comment, additionally replace similar paragraph in 35.2.2.6a (page 66 line 32) as follows:

Change

The MAC device may halt GTX\_CLK at any time more than 9 clock cycles after the start of the low power idle state as shown in Figure 35-6a if the GTX\_CLK\_stoppable bit is asserted [Editor's note add reference].

With

The MAC device may halt GTX\_CLK at any time more than 9 clock cycles after the start of the low power idle state as shown in Figure 35-6a if and only if the TX\_CLK\_stoppable bit is asserted [45.2.3.1.3a].

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

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

Extra bracket at the end of title in clause 36.

*SuggestedRemedy*  
Remove it

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

Cl 36 SC 36.2.4.7 P 40 L 43 # 7  
 Dawe, Piers Avago Technologies

Comment Type TR Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Add sentence: 'The ability to transmit or receive /LI/, /LI1/ and /LI1/ is an option for certain PHYs to support Energy Efficient Ethernet (see Clause 78).'

Cl 36 SC 36.2.4.8 P 72 L 25 # 50  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

See #49

Cl 36 SC 36.2.4.8 P 72 L 25 # 49  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D  
 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 //, 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Significant changes will be required to the clause to reflect the additions to the state machines and the operation of Low Power Idle in the transmit and receive directions.

The editor will work with the commenter to prepare a more complete definition in the next draft.

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

Comment Type T Comment Status D 40\_mr\_enable  
 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 W  
 PROPOSED ACCEPT.  
 It is true that there is no enable for low-power idle. Should there be one?

Cl 40 SC 40.1.3 P75 L1 # 51  
 Healey, Adam LSI Corporation  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 40 SC 40.2.2 P78 L1 # 52  
 Healey, Adam LSI Corporation  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 40 SC 40.1.4 P76 L45 # 8  
 Dawe, Piers Avago Technologies  
 Comment Type T Comment Status D  
 j) Ability to signal...  
 SuggestedRemedy  
 j) Optionally, ability to signal... ?  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 40 SC 40.2.2 P79 L5 # 53  
 Healey, Adam LSI Corporation  
 Comment Type E Comment Status D  
 Correct indentation for the definition of primitive values for this and all following EEE-related primitives.  
 SuggestedRemedy  
 Per comment.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 40 SC 40.12 P93 L1 # 164  
 Hajduczenia, Marek ZTE Corporation  
 Comment Type TR Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 PICS will be entered per Draft 1.0 and the adopted responses to comments against Draft 1.0.

Cl 40 SC 40.3 P81 L1 # 54  
 Healey, Adam LSI Corporation  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 40 SC 40.3.1.3.4 P 82 L 8 # 55  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 definition 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_model!=SEND_Z)
Scn[2] else
```

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 40 SC 40.3.4 P 83 L 2 # 56  
 Healey, Adam LSI Corporation

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

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

Comment Type ER Comment Status D 40\_svc\_to\_humanity

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 W

PROPOSED ACCEPT IN PRINCIPLE.

The referenced figures are largely as they appear in the current revision of IEEE Std. 802.3. The modifications required to realize optional Energy Efficient Ethernet features were minor in nature.

How such "services to humanity" should be addressed is a question of project scope and thus should be discussed by the Task Force.

See also comment #162.

Cl 40 SC 40.4.2 P 85 L 8 # 57  
 Healey, Adam LSI Corporation

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

Cl 40 SC 40.4.2.4 P 86 L 16 # 85  
 Healey, Adam LSI Corporation  
 Comment Type E Comment Status D  
 Grammar: "sequences" should be "sequence"  
 SuggestedRemedy  
 Per comment.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 40 SC 40.4.2.4 P 86 L 20 # 86  
 Healey, Adam LSI Corporation  
 Comment Type E Comment Status D  
 Incorrect state diagram variable name: "tx\_wake\_timer" should be "lpi\_waketx\_timer"  
 SuggestedRemedy  
 Per comment.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 40 SC 40.4.2.4 P 86 L 24 # 84  
 Healey, Adam LSI Corporation  
 Comment Type T Comment Status D 40\_PHY\_Control  
 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 W

PROPOSED ACCEPT IN PRINCIPLE.  
 Refer to #191 which may modify the response to this comment.

Cl 40 SC 40.4.2.4 P 86 L 32 # 87  
 Healey, Adam LSI Corporation  
 Comment Type E Comment Status D  
 Grammar: "the both" should be "both"  
 SuggestedRemedy  
 Per comment.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 40 SC 40.4.5.1 P 86 L 40 # 83  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 40 SC 40.4.5.1 P 86 L 44 # 79  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D 40\_mr\_enable  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 When optional Energy Efficient features are not implemented, the default values for the cited variables should be defined per the comment. This has the effect of restoring "normal" 1000BASE-T operation.

As pointed out by comment #208, there is no means to enable or disable Energy Efficient Ethernet via management.

Cl 40 SC 40.4.5.1 P 87 L 15 # 82  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D 40\_signal\_detect  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Response pending planned presentations on this subject.

Cl 40 SC 40.4.5.2 P 87 L 22 # 189  
 Grimwood, Michael Broadcom Corporation

Comment Type TR Comment Status D 40\_signal\_detect  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Refer to #82.

Cl 40 SC 40.4.5.2 P 87 L 25 # 80  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

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

Comment Type T Comment Status D 40\_tw\_negotiation

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Response pending planned presentations on this subject.

See also #62.

CI 40 SC 40.4.5.2 P 87 L 51 # 192  
Grimwood, Michael Broadcom Corporation

Comment Type TR Comment Status D 40\_tw\_negotiation

lpi\_wake\_time is specified to be less than or equal to 16  $\mu$ s. However, under best-case implementation assumptions and propagation delays, it is still possible that wake can take up to 3.8  $\mu$ s 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  $\mu$ s and less than or equal to 16  $\mu$ s. Because the wake time is negotiated in 1  $\mu$ s increments, the allowable range for lpi\_wake\_time should be 4  $\mu$ s to 16  $\mu$ s.

*SuggestedRemedy*

Change:

Duration: This timer is a negotiated parameter [add reference] not to exceed 16  $\mu$ s.

To:

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

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Refer to #209.

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

Comment Type T Comment Status D 40\_tw\_negotiation

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Refer to #209.

Cl 40 SC 40.4.5.2 P 88 L 31 # 81  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 W  
 PROPOSED ACCEPT.

Cl 40 SC 40.4.5.2 P 88 L 6 # 190  
 Grimwood, Michael Broadcom Corporation

Comment Type TR Comment Status D 40\_signal\_detect

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Refer to #82.

Cl 40 SC 40.4.6.1 P 88 L 44 # 331  
 Dove, Daniel ProCurve Networking

Comment Type ER Comment Status D LATE  
 Spelling

SuggestedRemedy

Change "PHY Contrl" to "PHY Control"

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 40 SC 40.4.6.1 P90 L 20 # 191  
 Grimwood, Michael Broadcom Corporation

Comment Type TR Comment Status D 40\_PHY\_Control

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 W

PROPOSED ACCEPT IN PRINCIPLE.  
 Response pending planned presentations on this subject.

Cl 40 SC 40.4.6.2 P91 L 1 # 162  
 Hajduczenia, Marek ZTE Corporation

Comment Type ER Comment Status D 40\_svc\_to\_humanity

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 W

PROPOSED ACCEPT IN PRINCIPLE.  
 Refer to #161.

Cl 40 SC 40.5.1 P91 L 40 # 211  
 Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

Cl 40 SC 40.5.1.1 P91 L 50 # 163  
 Hajduczenia, Marek ZTE Corporation

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT.  
 Refer to #212

Cl 40 SC 40.5.1.1 P91 L 50 # 212  
 Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.  
 Table will be filled in with Energy Efficient Ethernet management register definitions and values defined in 45.2.1.2 as modified by adopted responses to comments against Draft 1.0.

Cl 40 SC 40.5.1.2 P92 L 12 # 213  
 Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.  
 Table will be filled in with Energy Efficient Ethernet next page bits and assignments defined 45.2.7 as modified by adopted responses to comments against Draft 1.0.

Cl 45 SC 2.7.13a P98 L 5 # 246  
 Bennett, Michael LBNL  
 Comment Type **TR** Comment Status **D**  
 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 **W**  
 PROPOSED ACCEPT.

Cl 45 SC 45 P101 L 1 # 166  
 Hajduczenia, Marek ZTE Corporation  
 Comment Type **TR** Comment Status **D**  
 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 **W**  
 PROPOSED ACCEPT.

Cl 45 SC 45 P96 L 12 # 215  
 Barrass, Hugh Cisco  
 Comment Type **E** Comment Status **D**  
 Table designation is wrong  
 SuggestedRemedy  
 Change 45-1 to 45-5  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1 P37 L 41 # 11  
 Dawe, Piers Avago Technologies  
 Comment Type **E** Comment Status **D**  
 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 **W**  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1.2.1a P96 L 35 # 91  
 Healey, Adam LSI Corporation  
 Comment Type **T** Comment Status **D**  
 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 **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 The four LP Idle bits in register 1.1 should have been placed in the PCS register space.  
 Move all four bits to register 3.1, bits 8-11.

Cl 45 SC 45.2.1.2.1a P96 L 39 # 92  
 Healey, Adam LSI Corporation  
 Comment Type **E** Comment Status **D**  
 "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 **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change "The receive link status bit shall be implemented with latching high behavior."  
 To "This bit shall be implemented with latching high behavior."  
 2 instances - 45.2.1.2.1a and 45.2.1.2.1b

Cl 45 SC 45.2.1.2.1b P 96 L 38 # 60  
Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 W  
PROPOSED ACCEPT IN PRINCIPLE.

See #91

Cl 45 SC 45.2.1.2.1b P 96 L 46 # 93  
Healey, Adam LSI Corporation

Comment Type E Comment Status D

"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 W  
PROPOSED ACCEPT IN PRINCIPLE.

See #92

Cl 45 SC 45.2.1.2.3a P 96 L 51 # 58  
Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 W  
PROPOSED ACCEPT IN PRINCIPLE.

See #91

Cl 45 SC 45.2.1.2.3a P 96 L 52 # 96  
Koenen, David Hewlett Packard

Comment Type T Comment Status D

Should bit 1.1.4 indicate 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 W  
PROPOSED REJECT.

This is a matter of semantic preference. The sublayer is receiving and transmitting low power idles. The current wording is unambiguous, so the editor suggests no change is necessary.

Cl 45 SC 45.2.1.2.3a P97 L3 # 61  
Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

See #91

Cl 45 SC 45.2.1.6 P38 L29 # 12  
Dawe, Piers Avago Technologies

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

The registers are moving, however the new clause subheading must be included.

Cl 45 SC 45.2.1.6 P39 L9 # 13  
Dawe, Piers Avago Technologies

Comment Type E Comment Status D

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 W

PROPOSED REJECT.

This project has no reason to edit that register.

Cl 45 SC 45.2.3 P43 L8 # 14  
Dawe, Piers Avago Technologies

Comment Type E Comment Status D

Table too narrow for the new contents

SuggestedRemedy

Resize column widths to contents

Proposed Response Response Status W

PROPOSED REJECT.

It is unclear which table is too narrow - neither the subclause nor the page number correspond to a table that needs changing.

The commenter is advised to review 802.3av that may be more appropriate for this comment.

Cl 45 SC 45.2.3 P97 L10 # 214  
Barrass, Hugh Cisco

Comment Type T Comment Status D

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 signaling 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 W

PROPOSED ACCEPT.

*Cl* **45**    *SC* **45.2.3.31**                      *P* **46**            *L* **47**                      # **10**  
 Dawe, Piers                                      Avago Technologies  
*Comment Type*    **E**                      *Comment Status*    **D**  
     Multi-Word  
*SuggestedRemedy*  
     Multi-word  
*Proposed Response*                      *Response Status*    **W**  
     PROPOSED REJECT.  
  
     See #14

*Cl* **45**    *SC* **45.2.7.13a**                      *P* **97**            *L* **42**                      # **88**  
 Healey, Adam                                      LSI Corporation  
*Comment Type*    **T**                      *Comment Status*    **D**  
     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*    **W**  
     PROPOSED ACCEPT IN PRINCIPLE.  
  
     Add register 3.20 EEE Capability register  
  
     All supported PCS types listed in the register.

*Cl* **45**    *SC* **45.2.7.13a**                      *P* **98**            *L* **10**                      # **193**  
 Grimwood, Michael                                      Broadcom Corporation  
*Comment Type*    **T**                      *Comment Status*    **D**  
     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*    **W**  
     PROPOSED ACCEPT.

*Cl* **45**    *SC* **45.2.7.13a**                      *P* **98**            *L* **40**                      # **98**  
 Koenen, David                                      Hewlett Packard  
*Comment Type*    **T**                      *Comment Status*    **D**  
     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*    **W**  
     PROPOSED ACCEPT.

Cl 45 SC 45.2.7.14a P 99 L 23 # 89  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.7.15a P 100 L # 101  
 Koenen, David Hewlett Packard

Comment Type E Comment Status D  
 Several paragraphs have duplicate "the the" in the last sentence.

SuggestedRemedy  
 Fix.

Proposed Response Response Status W  
 PROPOSED ACCEPT ACCEPT.

Cl 45 SC 45.2.7.15a P 100 L 12 # 100  
 Koenen, David Hewlett Packard

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.  
 See also #216

Cl 45 SC 45.2.7.15a P 99 L 18 # 59  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

This warrants a similar response to #88, however, if #216 is accepted then the point is moot.

Cl 45 SC 45.2.7.15a P 99 L 23 # 194  
 Grimwood, Michael Broadcom Corporation

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.7.15a P 99 L 23 # 90  
Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

Cl 45 SC 45.2.7.15a P 99 L 46 # 216  
Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

Cl 45 SC 45.2.7.15a.1 P 99 L 48 # 62  
Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 W

PROPOSED REJECT.

There is currently no register defined for negotiated wake times corresponding to 40.4.5.2. If comment #209 is accepted then the point is moot.

Otherwise, if a different proposal is accepted then the register must be changed to match that proposal.

Cl 45 SC 45.2.7.15a.1 P 99 L 49 # 9  
Dawe, Piers Avago Technologies

Comment Type T Comment Status D

Consistent spelling

*SuggestedRemedy*

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

Proposed Response Response Status W

PROPOSED ACCEPT.

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

**Comment Type ER**    **Comment Status D**  
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 W**  
PROPOSED ACCEPT IN PRINCIPLE.

There is no function to reference, therefore the registers should be deleted. See #216

**Cl 45**    **SC 45.2.7.15b**    **P 100**    **L 31**    # **217**  
Barrass, Hugh    Cisco

**Comment Type E**    **Comment Status D**  
sub-clause is mis-numbered

**SuggestedRemedy**  
Change 45.2.7.15a.6 to 45.2.7.15b

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

**Cl 45**    **SC Table 45-145**    **P 98**    **L 18**    # **97**  
Koenen, David    Hewlett Packard

**Comment Type T**    **Comment Status D**  
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 W**  
PROPOSED ACCEPT.

**Cl 45**    **SC Table 45-146**    **P 99**    **L 31**    # **99**  
Koenen, David    Hewlett Packard

**Comment Type T**    **Comment Status D**  
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 energy refresh for 1000BASE-KX LPI |

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

There is no function to reference, therefore the registers should be deleted. See #216

**Cl 46**    **SC 1.7**    **P 103**    **L 25**    # **247**  
Bennett, Michael    LBNL

**Comment Type E**    **Comment Status D**  
It looks like an editor's note follows the primitive PLS\_DATA\_VALID.indication on the same line

**SuggestedRemedy**  
move the note to it's own line

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

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

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

The definition of XGMII with LPI is still continuous, so e) doesn't need to be changed.

Add bullet item:

h) The XGMII may also support low power idle signaling as defined for Energy Efficient Ethernet for some PHY types (see Clause 78).

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

Comment Type E Comment Status D

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

SuggestedRemedy

described

Proposed Response Response Status W

PROPOSED ACCEPT.

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

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

The commenter is correct to highlight the ambiguity, but the addition of "or low power idle" is unnecessary for that sentence. Low power idle cannot be signaled during a frame.

Change "In the absence of errors or low power idle," back to "In the absence of errors,"

Also on page 105, line 26

Cl 46 SC 46.3.1.2 P 103 L 52 # 219  
 Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

Cl 46 SC 46.3.1.2 P 104 L 20 # 33  
 Dawe, Piers Avago Technologies

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

The preamble octet is replaced by the start character, that is why there is no applicable parameter.

However, the word "replaces" has mysteriously disappeared from this location. Therefore that cell must be changed back to its original form:

'No applicable parameter, replaces first eight ZERO, ONE of a frame (a preamble octet). "

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

Comment Type E Comment Status D

Can tidy up the table

SuggestedRemedy

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

Proposed Response Response Status W

PROPOSED ACCEPT.

Resize tables 46-3 and 46-4.

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

Comment Type ER Comment Status D

Reference missing; also on page 107, line 12

SuggestedRemedy

Please update

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See #218

Cl 46 SC 46.3.1.5a P 105 L 6 # 334  
 Dove, Daniel ProCurve Networking

Comment Type T Comment Status D 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 W

PROPOSED ACCEPT.

Cl 46 SC 46.3.2.2 P 106 L 38 # 32  
 Dawe, Piers Avago Technologies

Comment Type T Comment Status D

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 W

PROPOSED REJECT.

The style is used because RXC is a vector, therefore using a single line (high or low) is considered inappropriate. Furthermore, the style is consistent for all of the diagrams in the base clause.

**Cl 46**    **SC 46.3.2.2**    **P 106**    **L 52**    # **31**  
 Dawe, Piers    Avago Technologies

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

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*    **W**  
 PROPOSED ACCEPT.

**Cl 46**    **SC 46.3.2.4a**    **P 106**    **L 12**    # **218**  
 Barrass, Hugh    Cisco

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

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*    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

Accept the remedy for this comment, additionally replace similar paragraph in 46.3.1.5a (page 104 line 40) as follows:

Change

The MAC device may halt TX\_CLK at any time more than 128 clock cycles after the start of the low power idle state as shown in Figure 46-7a if the TX\_CLK\_stoppable bit is asserted [Editor's note add reference].

With

The MAC device may halt TX\_CLK at any time more than 128 clock cycles after the start of the low power idle state as shown in Figure 46-7a if and only if the TX\_CLK\_stoppable bit is asserted [45.2.3.1.3a].

**Cl 46**    **SC 46.3.2.4a**    **P 107**    **L 20**    # **333**  
 Dove, Daniel    ProCurve Networking

*Comment Type*    **T**    *Comment Status*    **D**    **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*    **W**  
 PROPOSED ACCEPT.

Cl 48 SC 2.4.2 P 110 L 18 # 267  
Diab, Wael Broadcom

Comment Type TR Comment Status D

It is unclear how frequently the /D20.5/ has to be inserted for all the XGMII columns to respond LPI. Conversely, it is also unclear 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 W

PROPOSED REJECT.

The text seems to be clear. Every time the XGMII coding of TXC/TXD indicates LPI, the PCS encodes K.28.0, K28.3 or K28.5 in all columns except one (chosen randomly) that is encoded K.20.5.

There is nothing to suggest that any "rate" or "frequency" is suggested other than the XGMII clock frequency.

Cl 48 SC 48.2.3 P 232 L 35 # 34  
Dawe, Piers Avago Technologies

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Change 48.2.3 (as suggested).

Add sentence after 'is specified in Table 48-3.':

'The ability to transmit or receive Low Power Idle is an option for certain PHYs to support Energy Efficient Ethernet (see Clause 78).'

Cl 48 SC 48.2.4.2 P 108 L 39 # 64  
Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Significant changes will be required to the clause to reflect the additions to the state machines and the operation of Low Power Idle in the transmit and receive directions.

The editor will work with the commenter to prepare a more complete definition in the next draft.

Cl 48 SC 48.2.4.2 P 108 L 39 # 65  
Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

See #64

Cl 48 SC 48.2.4.2 P 110 L 12 # 332  
 Dove, Daniel ProCurve Networking  
 Comment Type ER Comment Status D LATE  
 There is and Angstrom symbol in the text  
 SuggestedRemedy  
 Replace with proper symbol which I believe is an "@".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Replace with +/- symbol.

Cl 48 SC 48.2.4.2 P 110 L 18 # 63  
 Healey, Adam LSI Corporation  
 Comment Type T Comment Status D  
 "Low Power Idle is indicated by inserting /D20.5/ randomly in one column of each row during |||||."  
 A /D20.5/ code-group is randomly inserted into one LANE of each ||K|| or ||R|| COLUMN. ||||| 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add after 'during |||||'  
 'to replace ||K|| or ||R|| (not ||A||)'

Cl 48 SC 48.2.4.2 P 110 L 18 # 291  
 McClellan, Brett Solarflare  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See #63

Cl 48 SC 48.2.4.2 P 110 L 18 # 66  
 Healey, Adam LSI Corporation  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 The user of the standard has already overcome his fear of "randomness" when he implemented bullet item "e) When not sending an ||A||, either ||K|| or ||R|| is sent with a random uniform distribution between the two."  
 However, the term "random" needs a little more clarity.  
 Replace "inserting /D20.5/ randomly in one column"  
 with "inserting /D20.5/ with a random uniform distribution in one of the columns"

**Cl 48**    **SC 48.2.4.2**                      **P 110**        **L 18**                      # **337**  
 Dove, Daniel                                      ProCurve Networking  
**Comment Type**    **TR**            **Comment Status**    **D**                                      **LATE**  
 The words column and row are transposed  
*SuggestedRemedy*  
 Replace with "randomly in one row of each column during |||||".  
**Proposed Response**                      **Response Status**    **W**  
 PROPOSED ACCEPT.

**Cl 49**    **SC 49.2.4.4**                      **P 268**        **L 11**                      # **35**  
 Dawe, Piers                                      Avago Technologies  
**Comment Type**    **TR**            **Comment Status**    **D**  
 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**    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change 49.2.4.4  
 After "shall not be transmitted and shall be treated as an error if received."  
 Add  
 'The ability to transmit or receive Low Power Idle is an option for certain PHYs to support Energy Efficient Ethernet (see Clause 78). If this option is not supported Low Power Idle shall not be transmitted and shall be treated as an error if received.'

**Cl 49**    **SC 49.2.4.7**                      **P 111**        **L 45**                      # **67**  
 Healey, Adam                                      LSI Corporation  
**Comment Type**    **T**              **Comment Status**    **D**  
 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**    **W**  
 PROPOSED ACCEPT.

**Cl 55**    **SC**    **P**                      **L**                      # **178**  
 Taich, Dimitry                                      Teranetics  
**Comment Type**    **E**              **Comment Status**    **D**  
 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**    **W**  
 PROPOSED ACCEPT.

**Cl 55**    **SC**    **P**                      **L**                      # **309**  
 Parnaby, Gavin                                      Solarflare Communica  
**Comment Type**    **E**              **Comment Status**    **D**                                      **Late email**  
 General.  
 Check capitalization of auto-negotiation  
*SuggestedRemedy*  
 Use a consistent capitalization.  
**Proposed Response**                      **Response Status**    **W**  
 PROPOSED ACCEPT.

CI 55 SC 124 P L # 177  
Taich, Dimitry Teranetics

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

THP state is not defined at the beginning 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 **W**

For discussion by the group.

CI 55 SC 3.2.2.21 P 124 L 19 # 197  
Graba, Jim Broadcom

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

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 **W**

For discussion by the group.

CI 55 SC 55.1 P 114 L 13 # 152  
Tidstrom, Rick Broadcom

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

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 **W**

PROPOSED ACCEPT.

CI 55 SC 55.1.1 P 114 L 36 # 153  
Tidstrom, Rick Broadcom

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

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 **W**

PROPOSED ACCEPT.

CI 55 SC 55.1.3 P 114 L 43 # 174  
Taich, Dimitry Teranetics

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

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 **W**

PROPOSED ACCEPT IN PRINCIPLE.

The text needs to clarify that the transition to LPI state can occur in transmit and receive directions.

The editor will change the text appropriately.

**Cl 55**    **SC 55.1.3**                      **P 114**            **L 43**            # **154**  
 Tidstrom, Rick                              Broadcom

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

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**    **W**  
 PROPOSED ACCEPT.

**Cl 55**    **SC 55.1.3.1**                      **P 116**            **L 11**            # **311**  
 Parnaby, Gavin                              Solarflare Communica

**Comment Type**    **E**            **Comment Status**    **D**                      *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**    **W**  
 PROPOSED ACCEPT.

The editor will rewrite the text to make the transmit and receive states clear.

**Cl 55**    **SC 55.1.3.3**                      **P 116**            **L 24**            # **155**  
 Tidstrom, Rick                              Broadcom

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

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**    **W**  
 PROPOSED ACCEPT.

The editor will rewrite the text to clarify and make the number explicit.

[the number is defined later, but this is an overview clause so it was not included here. To avoid confusion the editor will add it to this subclause]

**Cl 55**    **SC 55.1.3.3**                      **P 116**            **L 52**            # **179**  
 Taich, Dimitry                              Teranetics

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

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**    **W**  
 PROPOSED ACCEPT.

Cl 55 SC 55.1.3.3 P 117 L 4 # 156  
 Tidstrom, Rick Broadcom

Comment Type T Comment Status D

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 W

For discussion by the group.

New state diagrams will be presented to the group.

Cl 55 SC 55.1.4 P 118 L # 297  
 Parnaby, Gavin Solarflare Communica

Comment Type E Comment Status D Late email

Figure 55-4 contains two descriptions 'dashed rectangles are used to indicate signals...'

*SuggestedRemedy*

Delete one description

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.2.1 P 118 L 43 # 220  
 Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

The editor will remove the note.

[to clarify: the note was not asking whether the resolution/negotiation needs to take place in the 10GBASE-T PHY, but whether the resolved value should be passed across the Technology Dependent Interface and a definition of the parameters included in this clause].

Cl 55 SC 55.2.2.3.1 P 119 L 10 # 296  
 Parnaby, Gavin Solarflare Communica

Comment Type E Comment Status D Late email

Sentence is not grammatically correct

*SuggestedRemedy*

Remove 'and' from '..and the transmit function...'

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 55 SC 55.3.2.2.21 P 124 L # 258  
 Tellado, Jose Teranetics

Comment Type TR Comment Status D

Comment about editor note: Make  $T_q+T_r = 128$ . This way LPI cycle period is independent of  $T_r$  and a power of 2. Less implementation headaches. Keeps multiple modems in a switch alligned (otherwise random based on LP)

SuggestedRemedy

Proposed Response Response Status W

For discussion by the group.

The editor suggests changing the allowed  $T_q/T_r$  values to the following  $\{T_q, T_r\}$  pairs, with  $T_q+T_r=128$

$\{4,124\}, \{8, 120\}, \{16, 112\}, \{32, 96\}$

CI 55 SC 55.3.2.2.21 P 124 L # 257  
 Tellado, Jose Teranetics

Comment Type TR Comment Status D

If link partner in LPI then offset by  $\sim 1/2$  LPI super-frame, otherwise Master starts refresh cycle  $\sim 1/2$  frame after Quiet and Slv 1 frame after. This prevents case where both enter simultaneously without knowing what LP is doing.

SuggestedRemedy

Proposed Response Response Status W

PROPOSED REJECT.

More details are needed to support this comment and the synchronization mechanism. It is not clear what text is required in the standard to make this scheme work.

At least one synchronization proposal will be presented at the November meeting.

CI 55 SC 55.3.2.2.21 P 124 L 32 # 176  
 Taich, Dimitry Teranetics

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT.

CI 55 SC 55.3.2.2.21 P 129 L 51 # 292  
 McClellan, Brett Solarflare

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

The editor will clarify the text as suggested.

Cl 55 SC 55.3.5.1 P 126 L # 259  
 Tellado, Jose Teranetics

Comment Type TR Comment Status D  
 -53dBm is too low. It's 58dB below the PBO=0 tx level and below tx PSD mask.

SuggestedRemedy

Proposed Response Response Status W  
 PROPOSED REJECT.

The editor believes that the comment may be valid, but requests that the commenter suggest a remedy.

[Note that the -53dBm value is taken from the 802.3an requirement for a disabled transmitter in 55.4.2.3.2]

Cl 55 SC 55.3.5.2 P 126 L 19 # 260  
 Tellado, Jose Teranetics

Comment Type TR Comment Status D  
 Comment concerning Editor note: Set TBD=0. No need for extra symbols.

SuggestedRemedy

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

The editor will remove the requirement.

Cl 55 SC 55.3.5.2 P 126 L 23 # 299  
 Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 W  
 PROPOSED ACCEPT.

The editor will clarify the text as suggested.

Cl 55 SC 55.3.5.2 P 126 L 24 # 312  
 Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 W  
 PROPOSED ACCEPT.

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 W  
 For discussion by the group.

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 W  
 For discussion by the group.

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 corruption 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 W

For discussion by the group.

Cl 55 SC 55.3.5.2 P 126 L 37 # 313  
 Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 W

For discussion by the group.

Cl 55 SC 55.3.5.2 P 126 L 40 # 302  
 Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 W

For discussion by the group.

Cl 55 SC 55.3.5.2 P 128 L 12 # 303  
 Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 W

PROPOSED ACCEPT IN PRINCIPLE.

The editor will add a requirement that EEE capable PHYs shall support the long LFSR PAM-2 training sequence after initial training. The long LFSR training sequence will be used for refresh signals during the LPI state. It is not a requirement that EEE capable PHYs use the long LFSR sequence during initial training.

Cl 55 SC 55.3.5.2 P 128 L 16 # 157  
Tidstrom, Rick Broadcom

Comment Type T Comment Status D

In the Editor'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 W

PROPOSED ACCEPT.

If we need extra test modes then we need other test mode bits.

At least one presentation on test modes will be made at the November meeting.

Cl 55 SC 55.3.5.2 P 129 L 42 # 304  
Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Editor will clarify that the LPI state begins immediately after the sleep finishes and lasts until the alert is sent completely (on the transmit side) and on the receive side lasts from when the sleep is detected until the alert is detected.

Cl 55 SC 55.3.5.2 P 139 L # 310  
Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 synchronizoiin mechanism depends on timing based on the sleep signal then this problem needs to be solved another way.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Resolving this issue is contingent upon sychronization mechanism.

Any synchronization mechanism needs to take this issue into account.

At least one proposal for a synchronization mechanism will be presented at the November meeting.

Cl 55 SC 55.3.5.2.1 P 131 L 21 # 315  
Parnaby, Gavin Solarflare Communica

Comment Type E Comment Status D 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 W

PROPOSED ACCEPT.

Cl 55 SC 55.3.5.2.1 P 131 L 21 # 293  
 Lundy, Sean Aquantia  
 Comment Type ER Comment Status D LATE  
 lpi\_quiet\_period should be replaced with lpi\_quiet\_time  
 SuggestedRemedy  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.5.2.1 P 131 L 31 # 294  
 Lundy, Sean Aquantia  
 Comment Type ER Comment Status D LATE  
 lpi\_wake\_period is not defined  
 SuggestedRemedy  
 Change to lpi\_wake\_time  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.5.2.1 P 131 L 632 # 305  
 Parnaby, Gavin Solarflare Communica  
 Comment Type E Comment Status D 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 The editor will attempt to match terms as much as possible in next draft.

Cl 55 SC 55.3.5.2.2 P 129 L 51 # 320  
 Parnaby, Gavin Solarflare Communica  
 Comment Type E Comment Status D 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\_req.  
 Clarify that the state is the low power idle receive state for rx\_lpi\_req.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 [The editor assumes tx\_lpi\_reg is a typo for tx\_lpi\_req.]

Cl 55 SC 55.3.5.2.2 P 129 L 52 # 314  
 Parnaby, Gavin Solarflare Communica  
 Comment Type E Comment Status D 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.5.4 P 132 L 1 # 158  
 Tidstrom, Rick Broadcom  
 Comment Type TR Comment Status D  
 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 W  
 For discussion by the group.  
 At least one synchronization proposal will be presented at the November meeting.

Cl 55 SC 55.3.5.4 P 132 L 133 # 36  
Dawe, Piers Avago Technologies

Comment Type ER Comment Status D

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 W

PROPOSED ACCEPT.

Cl 55 SC 55.3.5.4 P 132 L 14 # 319  
Parnaby, Gavin Solarflare Communica

Comment Type E Comment Status D 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 // and not /L/

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.3.5.4 P 133 L # 306  
Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D Late email

The state diagrams are old.

They should be updated.

*SuggestedRemedy*

See presentation at November meeting

Proposed Response Response Status W

For discussion by the group.

New state diagrams will be presented at the November meeting.

Cl 55 SC 55.3.5.4 P 133 L # 316  
Parnaby, Gavin Solarflare Communica

Comment Type E Comment Status D 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 W

PROPOSED ACCEPT IN PRINCIPLE.

The editor will check the state diagrams and update them to use the appropriate symbols.

Cl 55 SC 55.3.5.4 P 135 L # 307  
Parnaby, Gavin Solarflare Communica

Comment Type E Comment Status D 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 W

PROPOSED ACCEPT.

Cl 55 SC 55.3.5.4 P 135 L # 317  
Parnaby, Gavin Solarflare Communica

Comment Type E Comment Status D 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 W

For discussion by the group.

New state diagrams will be presented at the November meeting.

Cl 55 SC 55.3.5.4 P 138 L # 318  
 Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 W

For discussion by the group.

New state diagrams will be presented at the November meeting.

Cl 55 SC 55.3.5.4 P 140 L # 308  
 Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 W

For discussion by the group.

New state diagrams will be presented in the November meeting.

Cl 55 SC 55.3.52 P 128 L 8 # 195  
 Grimwood, Michael Broadcom Corporation

Comment Type TR Comment Status D

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 W

For discussion by the group.

At least one proposal for a synchronization mechanism will be presented at the November meeting.

Cl 55 SC 55.4.2.2.1 P 143 L 24 # 295  
 Lundy, Sean Aquantia

Comment Type ER Comment Status D LATE

PHY Frame should be LDPC Frame. This occurs on line 24 and line 25.

*SuggestedRemedy*

Proposed Response Response Status W

PROPOSED ACCEPT.

The editor will replace PHY frame with LDPC frame.

Cl 55 SC 55.5.2 P L # 175  
Taich, Dimitry Teranetics

Comment Type TR Comment Status D

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 W

For discussion by the group.

Additional test modes need to be defined for EEE-capable PHYs.

At least one proposal will be presented in November.

Cl 55 SC 55.6.1 P 146 L # 255  
Tellado, Jose Teranetics

Comment Type T Comment Status D

Comment regarding last row of table 55-10: No need for reset PMA training. This was for initial PAM2 acquisition. 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 W

PROPOSED ACCEPT.

The comment isn't clear to me, but I think this is the same conclusion as the editor's note on page 128, line 12.

See also comment 303

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

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

The editor will redo the table with the suggested changes.

Cl 55 SC 55.6.3 P 146 L 39 # 196  
Grimwood, Michael Broadcom Corporation

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

The 10GBASE-T editor will work with the Clause 79 editor to resolve this issue.

Cl 55 SC 55.6.3 P 146 L 39 # 321  
 Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 W

For discussion by the group.

This comment needs supporting data.

Cl 55 SC Many P L # 298  
 Parnaby, Gavin Solarflare Communica

Comment Type E Comment Status D 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 W

PROPOSED ACCEPT.

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

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

Expanding table does brings note down to two lines.

Cl 70 SC 70.1 P 149 L 30 # 221  
 Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

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

Comment Type E Comment Status D

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

*SuggestedRemedy*

Per comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

**Cl 70**    **SC 70.3a**                      **P 149**    **L 47**                      # **69**  
 Healey, Adam                              LSI Corporation  
**Comment Type**    **E**                      **Comment Status**    **D**  
 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**    **W**  
 PROPOSED ACCEPT.  
 Editor will change "Low Power Idle" to "Energy Efficient Ethernet".

**Cl 70**    **SC 70.3a**                      **P 149**    **L 54**                      # **222**  
 Barrass, Hugh                              Cisco  
**Comment Type**    **T**                      **Comment Status**    **D**  
 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**    **W**  
 PROPOSED ACCEPT.  
 Editor will change per suggested remedy.

**Cl 70**    **SC 70.5**                              **P 150**    **L 27**                      # **223**  
 Barrass, Hugh                              Cisco  
**Comment Type**    **T**                      **Comment Status**    **D**  
 There is no enable for LPI.  
*SuggestedRemedy*  
 Delete the row from Table 70-2  
**Proposed Response**                      **Response Status**    **W**  
 PROPOSED ACCEPT.

**Cl 70**    **SC 70.5**                              **P 150**    **L 40**                      # **224**  
 Barrass, Hugh                              Cisco  
**Comment Type**    **T**                      **Comment Status**    **D**  
 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**    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Table 70-3 will be modified to match 45.2.1.2

**Cl 70**    **SC 70.6.10.2**                      **P 152**    **L 16**                      # **74**  
 Healey, Adam                              LSI Corporation  
**Comment Type**    **T**                      **Comment Status**    **D**  
 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**    **W**  
 need consensus from group

**Cl 70**    **SC 70.6.10.2**                      **P 152**    **L 19**                      # **39**  
 Dawe, Piers                                      Avago Technologies  
**Comment Type**    **E**                      **Comment Status**    **D**  
 usec, msec  
*SuggestedRemedy*  
 us, ms (and use a mu not a u). At least four tables.  
**Proposed Response**                      **Response Status**    **W**  
 PROPOSED ACCEPT.

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

**Comment Type T**    **Comment Status D**  
 T\_WL does not appear to be used.

**SuggestedRemedy**  
 Delete the parameter definition.

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

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

**Comment Type E**    **Comment Status D**  
 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 W**  
 PROPOSED ACCEPT IN PRINCIPLE.

Editor will add proper table title & number and provide introductory sentence or paragraph to reference the table.

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

**Comment Type T**    **Comment Status D**  
 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 W**  
 need consensus from group.

**Cl 70**    **SC 70.6.10.3**    **P 152**    **L 32**    # **75**  
 Healey, Adam    LSI Corporation

**Comment Type T**    **Comment Status D**  
 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 W**  
 PROPOSED REJECT.

KX/KX4/KR sleep transition is based on Chou\_01\_0508 sleep transition for 100Base-TX. Editor will provide clarification to parameter description for TF approval.

**Cl 70**    **SC 70.6.10.3**    **P 152**    **L 41**    # **76**  
 Healey, Adam    LSI Corporation

**Comment Type T**    **Comment Status D**  
 T\_UR does not appear to be used.

**SuggestedRemedy**  
 Delete the parameter definition.

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

This value can be defined as the Min for T\_UL per comment #74.

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

Comment Type T Comment Status D

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 disastrous 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 W  
 response to be based on approval of presentation.

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

Comment Type T Comment Status D

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 disastrous 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 W  
 response to be based on approval of presentation.

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

Comment Type E Comment Status D

mandatory

SuggestedRemedy

mandatory Also 70.6.5, 71.6.6

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 70 SC 70.6.4a P 151 L 25 # 77  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Editor needs recommended text to specify assertion/de-assertion criteria for PMD signal detect here.

Cl 70 SC 70.6.5 P 151 L 36 # 78  
 Healey, Adam LSI Corporation

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

This may not belong in 70.6.5, but certainly within 70.6. Editor will propose new text in an appropriate section.

Cl 71 SC 71.1 P 159 L 10 # 225  
 Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

Cl 71 SC 71.3a P 160 L 10 # 226  
 Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

Cl 71 SC 71.3a P 160 L 4 # 112  
 Hajduczenia, Marek ZTE Corporation

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

References will be resolved.

**Cl 71**    **SC 71.5**                      **P 160**            **L 36**            # **149**  
Hajduczenia, Marek                      ZTE Corporation

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

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**    **W**  
PROPOSED REJECT.

The LPI enable will be deleted per comment #227

**Cl 71**    **SC 71.5**                      **P 160**            **L 36**            # **227**  
Barrass, Hugh                              Cisco

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

There is no enable for LPI.

**SuggestedRemedy**

Delete the row from Table 71-2

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

**Cl 71**    **SC 71.5**                      **P 161**            **L 8**              # **228**  
Barrass, Hugh                              Cisco

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

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**    **W**  
PROPOSED ACCEPT.

**Cl 71**    **SC 71.6.12.2**                      **P 162**            **L 23**            # **134**  
Hajduczenia, Marek                      ZTE Corporation

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

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**    **W**  
PROPOSED ACCEPT.

Editor will add proper table title & number and provide introductory sentence or paragraph to reference the table.

**Cl 71**    **SC 71.6.5**                      **P 160**            **L 50**            # **132**  
Hajduczenia, Marek                      ZTE Corporation

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

"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**    **W**  
PROPOSED ACCEPT IN PRINCIPLE.

Editor will change to "PMD lane-by-lane signal detect function during normal operation".

**Cl 71**    **SC 71.6.5**                      **P 161**            **L 5**              # **150**  
Hajduczenia, Marek                      ZTE Corporation

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

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**    **W**  
PROPOSED ACCEPT IN PRINCIPLE.

Should be E not T.

Cl 71 SC 71.6.5a P 161 L 37 # 133  
 Hajduczenia, Marek ZTE Corporation

Comment Type ER Comment Status D  
 "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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

The KX4 signal detect should be similar as that defined for CX4 in clause 54.5.4. Text will be proposed for TF approval at meeting.

Cl 72 SC 6.4a P 173 L 37 # 248  
 Bennett, Michael LBNL

Comment Type ER Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 72 SC 72.1 P 171 L 36 # 229  
 Barrass, Hugh Cisco

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 72 SC 72.3a P 171 L 5 # 230  
 Barrass, Hugh Cisco

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 72 SC 72.3a P 171 L 50 # 115  
 Hajduczenia, Marek ZTE Corporation

Comment Type E Comment Status D  
 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 W  
 PROPOSED REJECT.

Cl 72 SC 72.5 P 172 L 35 # 231  
 Barrass, Hugh Cisco

Comment Type T Comment Status D  
 There is no enable for LPI.

SuggestedRemedy  
 Delete the row from Table 72-2

Proposed Response Response Status W  
 PROPOSED ACCEPT.

**Cl 72**    **SC 72.5**    **P 173**    **L 8**    # **232**  
 Barrass, Hugh    Cisco

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

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 W**  
 PROPOSED ACCEPT.

**Cl 72**    **SC 72.6.11.1**    **P 176**    **L 30**    # **139**  
 Hajduczenia, Marek    ZTE Corporation

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

"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 W**  
 PROPOSED ACCEPT IN PRINCIPLE.

Editor will replace with appropriate Auto-negotiation reference(s).

**Cl 72**    **SC 72.6.11.2**    **P 177**    **L 0**    # **140**  
 Hajduczenia, Marek    ZTE Corporation

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

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 W**  
 PROPOSED ACCEPT.

Editor will add proper table title & number and provide introductory sentence or paragraph to reference the table.

**Cl 72**    **SC 72.6.11.4**    **P 178**    **L 1**    # **142**  
 Hajduczenia, Marek    ZTE Corporation

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

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 W**  
 PROPOSED REJECT.

**Cl 72**    **SC 72.6.11.4.1**    **P 178**    **L 1**    # **119**  
 Hajduczenia, Marek    ZTE Corporation

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

(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 W**

1.) Boolean is typically reserved for True or False, whereas an Enumerated Types can be ON or OFF, Black or White, etc. In assigning something other than True/False to a variable, it's normal programming practice to define it as an enumerated type variable.

2.) OK. This is use to encompass a variable number of elements and sizes that are implementation specific. I'm going to use the Basic Programming definition of:

The Variant data type is the data type for all variables that are not explicitly declared as some other type. A Variant is a special data type that can contain any kind of data.

Cl 72 SC 72.6.11.4.1 P 178 L 1 # 143  
 Hajduczenia, Marek ZTE Corporation

Comment Type T Comment Status D  
 Definitions of the variables need (probably) more careful consideration. They are given value only during the autonegotiation process. What happens if the negotiation 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 negotiation failure EEE mechanism can still operate.

Proposed Response Response Status W  
 PROPOSED REJECT.

Some of these values need to be deleted as they will not be negotiated during Auto-Neg. There is only two sets of Quiet/Refresh ratios that can be negotiated now.

Cl 72 SC 72.6.11.4.1 P 179 L 12 # 120  
 Hajduczenia, Marek ZTE Corporation

Comment Type ER Comment Status D  
 "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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 72 SC 72.6.11.4.1 P 179 L 31 # 109  
 Hajduczenia, Marek ZTE Corporation

Comment Type E Comment Status D  
 Missing space between definitions of "tx\_ts\_timer\_done" and "wake\_alert" blocks. Please insert it

SuggestedRemedy  
 As per comment.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 72 SC 72.6.11.4.3 P 180 L 9 # 121  
 Hajduczenia, Marek ZTE Corporation

Comment Type ER Comment Status D  
 "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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Will change to:

"This counter counts the number of training frames sent during the TX\_WAKE and REFRESH states.

Cl 72 SC 72.6.4 P 173 L 1 # 117  
 Hajduczenia, Marek ZTE Corporation

Comment Type E Comment Status D  
 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 W  
 PROPOSED REJECT.

Those type of edits will be performed when all sections are re-numbered.

Cl 72 SC 72.6.4a P 173 L 32 # 118  
 Hajduczenia, Marek ZTE Corporation

Comment Type E Comment Status D  
 Simplifying "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 W  
 PROPOSED ACCEPT.

**Cl 72**    **SC 72.7.4.2**                      **P 184**        **L 30**        # **151**  
Hajduczenia, Marek                      ZTE Corporation

**Comment Type**    **T**                      **Comment Status**    **D**  
TBD in FS12 in 72.7.4.2 PICS. Needs an update

**SuggestedRemedy**  
As per comment.

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

"Enters LowPower\_st when requested"

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

**Comment Type**    **E**                      **Comment Status**    **D**  
FS12 Status O

**SuggestedRemedy**  
FS12 Status LPI:M ? Also CF43 and following

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

If TF agrees to LPI:M, editor will replace O with "LPI:M" ins FS12 and CF43-CF47

**Cl 72**    **SC 72.7.4.4**                      **P 187**        **L 29**        # **123**  
Hajduczenia, Marek                      ZTE Corporation

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

(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**    **W**  
PROPOSED ACCEPT.

**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 78**    **SC 1.2**                                      **P 188**        **L 35**        # **249**  
Bennett, Michael                                      LBNL

**Comment Type**    **ER**                      **Comment Status**    **D**  
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**    **W**  
PROPOSED ACCEPT.

**Cl 78**    **SC 1.3**                                      **P 190**        **L 29**        # **251**  
Bennett, Michael                                      LBNL

**Comment Type**    **ER**                      **Comment Status**    **D**  
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**    **W**  
PROPOSED ACCEPT IN PRINCIPLE.

Low Power Idle mode will be used instead of Low Power mode.

Cl 78 SC 3 P 192 L 1 # 253  
 Bennett, Michael LBNL  
 Comment Type E Comment Status D  
 Depends should be Depending  
 SuggestedRemedy  
 Replace Depends with Depending  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 78 SC 3 P 192 L 7 # 254  
 Bennett, Michael LBNL  
 Comment Type E Comment Status D  
 "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 W  
 PROPOSED ACCEPT.

Cl 78 SC 5 P 195 L 4 # 252  
 Bennett, Michael LBNL  
 Comment Type ER Comment Status D  
 there are no units associated with Tw\_phy  
 SuggestedRemedy  
 add "nsec" after Tw\_phy  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 78 SC 78.1.1 P 188 L 22 # 124  
 Hajduczenia, Marek ZTE Corporation  
 Comment Type ER Comment Status D  
 "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 W  
 PROPOSED ACCEPT.

Cl 78 SC 78.1.1 P 188 L 23 # 125  
 Hajduczenia, Marek ZTE Corporation  
 Comment Type ER Comment Status D  
 "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 W  
 PROPOSED REJECT.

Editor does not feel at that term "legacy" means outdated technology, but rather accepted term for any deployed technology - which emphasizes the need for interoperability and co-existence when any newer technology being invented.  
 This could be personal view. Open to the discussion and other opinions.

Cl 78 SC 78.1.2 P 188 L 35 # 102  
 Koenen, David Hewlett Packard  
 Comment Type T Comment Status D  
 Missing 1000BASE-KX PHY in objectives.  
 SuggestedRemedy  
 Add 1000BASE-KX to a sub-bullet under a.)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to #249

Cl 78 SC 78.1.3 P L 25 # 188  
GUPTA, SUJAY Infosys Technologies

Comment Type TR Comment Status D

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 specified in the draft elsewhere)

Proposed Response Response Status W

PROPOSED REJECT.

Symmetric and asymmetric modes of operations are different in their nature.

When both link partners can only enter Low Power Mode simultaneously, this mode is called symmetric. That is, after link partner-1 indicates that it is ready for Low Power Mode (by sending LP\_Sleep codeword), it has to wait for link partner-2 to do the same before both can enter Low Power Mode.

On contrary, when asymmetric mode is supported, link partner-1 enters Low Power Mode immediately following LP\_Sleep codeword transmission, while link partner-2 can still stay in normal operational mode.

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

Comment Type E Comment Status D

Capitalize Low Power mode.

*SuggestedRemedy*

Change from low to Low.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 78 SC 78.1.3 P 189 L 36 # 181  
GUPTA, SUJAY Infosys Technologies

Comment Type T Comment Status D

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 it as " .. reception of LP\_IDLE codewords on the MII interface."

Proposed Response Response Status W

PROPOSED REJECT.

Proposed remedy is already in the text, lines 37-38 on the same page

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

Comment Type E Comment Status D

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

*SuggestedRemedy*

Make signal name case consistant for:  
LP\_SLEEP & LP\_WAKE

Proposed Response Response Status W

PROPOSED ACCEPT.

"LP\_SLEEP" will be replaced with "LP\_Sleep"  
"LP\_WAKE" will be replaced with "LP\_Wake"

Cl 78 SC 78.1.3 P 189 L 40 # 233  
Barrass, Hugh Cisco

Comment Type T Comment Status D

Typo - 10BASE-T, should be 100BASE-TX

*SuggestedRemedy*

Change 10BASE-T to 100BASE-TX.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 78 SC 78.1.3 P 189 L 50 # 129  
 Hajduczenia, Marek ZTE Corporation

Comment Type ER Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Eliminate "Low Power operation" term, use "Low Power Mode" of operation.

Cl 78 SC 78.1.3 P 190 L 22 # 130  
 Hajduczenia, Marek ZTE Corporation

Comment Type ER Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 78 SC 78.1.3 P 190 L 25 # 144  
 Hajduczenia, Marek ZTE Corporation

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Adopt following terminology - as per resolution to comment # 39 to draft 0.9:

When link partners can only enter the Low Power Mode simultaneously, this mode is called "symmetric".  
 When link partners can enter the Low Power Mode independently of each other, it is called "asymmetric".

Cl 78 SC 78.1.4 P 190 L 33 # 326  
 Parnaby, Gavin Solarflare Communica

Comment Type E Comment Status D 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 W  
 PROPOSED ACCEPT.

Cl 78 SC 78.1.4 P 190 L 33 # 145  
 Hajduczenia, Marek ZTE Corporation

Comment Type T Comment Status D  
 "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 W  
 PROPOSED ACCEPT.

"EEE defines Low power operational modes for the following six 802.3 protocols, use Table 78-1 for the associated clauses."

will be replaced by

"EEE defines the Low Power Idle mode of operation for the following six 802.3 PHYs. Table 78-1 lists the clauses associated with each PHY."

Cl 78 SC 78.1.4 P 190 L 41 # 234  
 Barrass, Hugh Cisco

Comment Type E Comment Status D  
 100BASE-T - should be TX

SuggestedRemedy  
 Change 100BASE-T to 100BASE-TX

Proposed Response Response Status W  
 PROPOSED ACCEPT.

**Cl 78**    **SC 78.1.5**                      **P 190**            **L 45**            # **235**  
 Barrass, Hugh                              Cisco

**Comment Type**    **E**            **Comment Status**    **D**  
 Missing clause number

**SuggestedRemedy**  
 Insert clause number 70

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

**Cl 78**    **SC 78.2.1**                      **P 191**            **L 6**            # **327**  
 Parnaby, Gavin                              Solarflare Communica

**Comment Type**    **E**            **Comment Status**    **D**                      **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**    **W**  
 PROPOSED ACCEPT.

**Cl 78**    **SC 78.2.2**                      **P 191**            **L 19**            # **110**  
 Hajduczenia, Marek                              ZTE Corporation

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

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**    **W**  
 PROPOSED REJECT.

Comment is not clear. It is about of referencing reader to the associated subclauses where 78.2.2 definitions appear first?

**Cl 78**    **SC 78.2.3**                      **P 191**            **L 37**            # **322**  
 Parnaby, Gavin                              Solarflare Communica

**Comment Type**    **T**            **Comment Status**    **D**                      **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 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**    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

Agree in general, Tw\_PHY should be defined as period of time between reception IDLE signal on xxMII interface and moment PHY is ready to transmit Data.

Draft 1.0 has following wake definition (subclause 55.3.2.2.21, page 124, lane 19): "After the ALERT message the PCS completes the transition from low power idle mode to normal mode by sending a WAKE signal which is composed of lpi\_wake\_time repeated // codewords encoded using the 65B-LDPC coding technique". Are these "// codewords" XGMII-driven or pre-defined valid codewords". If latest assumption is correct then current Tw\_PHY definition holds, otherwise it should be modified.

Proposed remedy suggests to include Tp (Propagation delay) into Tw\_PHY. Not clear whether there is any advantage in doing so

Cl 78 SC 78.2.4.3 P 194 L 3 # 182  
GUPTA, SUJAY Infosys Technologies

Comment Type T Comment Status D

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 W

PROPOSED REJECT.

Firstly, there is no remedy.

The receive Tw\_sys that each LP sends to its peer is a request. Both link partners know how the negotiation will resolve in both directions, therefore if a device understands that its LP will send data after a certain delay then it can choose a sleep mode that wakes in the appropriate time to avoid packet loss.

The standard requires that all devices have the ability to wake in the minimum time, negotiation to a longer wake-up time must be limited by the least capable device.

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

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

See responses to comments ## 253, 254.

Editor would appreciate more constructive approach - comment-wise and suggested remedy as one - next time around.

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

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

Editor will include clause 73 AN overview to cover backplane PHY's.

Cl 78 SC 78.3 P 192 L 1 # 236  
Barrass, Hugh Cisco

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT.

Cl 78 SC 78.3 P 192 L 4 # 187  
 GUPTA, SUJAY Infosys Technologies

Comment Type T Comment Status D

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 guarantee 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 W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #236

Cl 78 SC 78.4 P 193 L 1 # 271  
 Diab, Wael Broadcom

Comment Type TR Comment Status D

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 editors as needed.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Editor will add editorial note to capture this comment

Cl 78 SC 78.4.1 P 193 L 11 # 146  
 Hajduczenia, Marek ZTE Corporation

Comment Type T Comment Status D

(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) resolve this missing reference to some subclause

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change reference to 78.4.2.

Cross reference to Clause 30 will be added when Clause 30 is completed.

Cl 78 SC 78.4.2 P 193 L 18 # 147  
 Hajduczenia, Marek ZTE Corporation

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Delete the first paragraph in 78.4.2

Cl 78 SC 78.4.2.1 P 193 L 40 # 323  
Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 W

PROPOSED ACCEPT IN PRINCIPLE.

This is good point - but these parameters are not necessarily negotiable but rather fixed per each PHY type. Thus they should be defined first in the appropriate subclauses and then reflected in the subclause 78.5

Cl 78 SC 78.4.2.1 P 193 L 40 # 111  
Hajduczenia, Marek ZTE Corporation

Comment Type E Comment Status D

"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 W

PROPOSED ACCEPT.

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

Comment Type E Comment Status D

"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 W

PROPOSED ACCEPT.

Cl 78 SC 78.4.2.4 P 194 L 29 # 324  
Parnaby, Gavin Solarflare Communica

Comment Type T Comment Status D 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 W

PROPOSED REJECT.

The earlier part of the paragraph recommends sending at least 4 LLDP messages to ensure that the link partner has received them.

Also, none of these parameters have any effect unless LPI is being asserted therefore it seems clear that the new parameters will be used during the next assertion of LPI. LLDP messages cannot be sent when LPI is being asserted.

**Cl 78**    **SC 78.5**                      **P 194**    **L 45**                      # **325**  
Parnaby, Gavin                              Solarflare Communica

**Comment Type**    **E**                      **Comment Status**    **D**                      *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**    **W**  
PROPOSED ACCEPT.

**Cl 78**    **SC 78.5**                      **P 194**    **L 45**                      # **131**  
Hajduczenia, Marek                              ZTE Corporation

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

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**    **W**  
PROPOSED ACCEPT.

See response to comment #325

**Cl 78**    **SC 78.5**                      **P 195**    **L 1**                      # **148**  
Hajduczenia, Marek                              ZTE Corporation

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

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**    **W**  
PROPOSED ACCEPT IN PRINCIPLE.

TBD will be replaced by real values after TF discussion on draft 1.0

**Cl 78**    **SC 78.5**                      **P 195**    **L 10**                      # **250**  
Bennett, Michael                              LBNL

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

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**    **W**  
PROPOSED ACCEPT.

**Cl 99**    **SC**                                      **P 3**                      **L 4**                      # **261**  
Diab, Wael                                      Broadcom

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

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**    **W**  
PROPOSED ACCEPT.

**Cl 99**    **SC**                                      **P 3**                      **L 5**                      # **262**  
Diab, Wael                                      Broadcom

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

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**    **W**  
PROPOSED ACCEPT.

CI 99 SC P7 L13 # 263  
 Diab, Wael Broadcom  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

CI 99 SC 99 P1 L2 # 43  
 Dawe, Piers Avago Technologies  
 Comment Type E Comment Status D  
 Amendment  
 SuggestedRemedy  
 Amendment  
 Also at line 30, change 'a amendment' 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 W  
 PROPOSED ACCEPT.

CI 99 SC 99 P11 L49 # 46  
 Dawe, Piers Avago Technologies  
 Comment Type E Comment Status D  
 There is a newer version of this page  
 SuggestedRemedy  
 Ask P802.3av for it  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 99 SC 99 P3 L8 # 44  
 Dawe, Piers Avago Technologies  
 Comment Type E Comment Status D  
 consciously  
 SuggestedRemedy  
 consciously  
 At line 10, consecuiely s/b consecutively  
 Line 40, 802.3az-2008 is too optimistic  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 99 SC 99 P5 L5 # 283  
 Booth, Brad AMCC  
 Comment Type E Comment Status D LATE  
 Period in front of Section Four.  
 SuggestedRemedy  
 Please remove period.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 99 SC 99 P5 L5 # 45  
 Dawe, Piers Avago Technologies  
 Comment Type E Comment Status D  
 .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 W  
 PROPOSED ACCEPT.