<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Page</th>
<th>Line</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
</tr>
</thead>
</table>
| Cl 78 SC 78.6.3 P270 L6 | 1 | | TR | D | }

**Comment:** When we structured the PICs on the last draft we did that after closing the comment on having a PICs for AN. There needs to be a PICs for AN, however, it should match the way we did the other requirements like timing, where it is against the appropriate clauses with the normative text for each PHY. Note that in some cases this does exist like in C40 so its worthwhile to make it consistent throughout.

**Suggested Remedy:**
- Remove the PICs entry for AN from C78
- Adjust the text around the PICs to only reflect D$L requirements
- Remove the corresponding shall from 78.3
- In appropriate clauses like 28C, 28D, 73A, 24, 40, 55, 73 and/or other appropriate clauses.
- In 78.3 point to the appropriate clauses from the step above
- Check that this is not consistent for all PHY types (e.g. right now there is a PICs in 78.3 and 40 - AN15 - that would affect 1000BASE-T for instance. Should really be in one place)

**Comment ID:** Cl 24 SC 24.4.1.4.3 P49 L47

**Comment Type:** E

**Comment Status:** D

**Proposed Response:**

**Comment ID:** Cl 49 SC 49.2.13.2.2 P171 L53

**Comment Type:** E

**Comment Status:** D

**Proposed Response:**

**Comment ID:** Cl 51 SC 51.1 P191 L4

**Comment Type:** E

**Comment Status:** D

**Proposed Response:**

**Comment ID:** Cl 55 SC 55.2.2.11 P201 L10

**Comment Type:** E

**Comment Status:** D

**Proposed Response:**

**Comment ID:** Cl 58 SC 58.6.3 P270 L6

**Comment Type:** TR

**Comment Status:** D

**Proposed Response:**

**Comment ID:** Cl 60 SC 60.6.3 P270 L6

**Comment Type:** TR

**Comment Status:** D

**Proposed Response:**
IEEE P802.3az D3.1 Energy Efficient Ethernet comments

Cl 55 SC 55.3.2.2.21 P206 L26 # 6
Anslow, Peter Ciena Corporation

Comment Type E Comment Status D

"7.36us" should have a space between the number and its unit and the greek letter mu rather than u

SuggestedRemedy
change "7.36us" to have a space between the number and its unit (use ctrl space to make it non-breaking) and the greek letter mu rather than u

Proposed Response Response Status O

Cl 55 SC 55.4.5.1 P231 L41 # 7
Anslow, Peter Ciena Corporation

Comment Type E Comment Status D

2^9, 2^5 and 2^6, 2^4 on line 45 aren't in the same format as powers of two in the transition_count paragraph above.

SuggestedRemedy
change to using superscript for the power

Proposed Response Response Status O

Cl 71 SC 71.3 P259 L44 # 8
Anslow, Peter Ciena Corporation

Comment Type E Comment Status D

On page 259 line 44 diff document (or page 237 line 37 in clean document) we have "PCS requirements for Auto-Negotiation (AN) service interface" clause 71.7 or 71.3 in the two docs respectively, but there are no editing instructions for clause 71.3. Also, the numbering above this in the diff document is 71.6 instead of 71.2. However the clen version is ok.

SuggestedRemedy
Either make changes to 71.3 "PCS requirements for Auto-Negotiation (AN) service interface" or remove this text.

Proposed Response Response Status O

Cl 72 SC 72.6.4 P266 L12 # 9
Anslow, Peter Ciena Corporation

Comment Type E Comment Status D

The editing instruction says "Change the text in the 1st paragraph of section 72.6.4 to read a follows:" but there are 4 paragraphs of changed text.

SuggestedRemedy
Change editing instruction to "Change 72.6.4 as follows:"

Proposed Response Response Status O

Cl 74 SC 74 P272 L1 # 10
Anslow, Peter Ciena Corporation

Comment Type E Comment Status D

802.3ba changed the title of clause 74 and also the title of 74.4.1

SuggestedRemedy
Change the title of 74 to "Forward Error Correction (FEC) sublayer for BASE-R PHYs" and the title of 74.4.1 to "Functional block diagram for 10GBASE-R PHYs"

Proposed Response Response Status O

Cl 74 SC 74.4.1 P272 L5 # 11
Anslow, Peter Ciena Corporation

Comment Type E Comment Status D

The editing instruction says "Change Figure 74--2 as shown below using the title from 802.3ba D2.3;", but 802.3ba is now approved. Also, 802.3ba changed the title of Figure 74-2 to "Functional block diagram for 10GBASE-R PHYs"

SuggestedRemedy
Change editing instruction to "In 74.4.1 as modified by IEEE Std 802.3ba, replace Figure 74--2 as shown below:"

Proposed Response Response Status O

Type: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
Comment Status: D/dispatched A/accepted R/rejected Response Status: O/open W/written C/closed U/unsatisfied Z/withdrawn
Sort Order: Comment ID

Comment ID # 11 7/4/2010 3:59:19 PM
If the optional Energy Efficient Ethernet (EEE) capability is supported... has been added, but is not shown in underline font. Also, the font size (9 pt) is wrong.

Suggested Remedy
Show the inserted text in underline and the correct size.

Subclauses 74.5.1.4 through 74.5.1.7 have been added with the insert instruction, so none of the text should be shown in underline font. However some is and some isn't underlined.

Suggested Remedy
Remove the underline from subclauses 74.5.1.4 through 74.5.1.7.

The editing instruction is "Change 74.10.2.3 as shown below:" but only one of the three functions is shown.

Suggested Remedy
Show the two unmodified functions in normal font.

In the title of 74.11 change "sublayer for 10GBASE-R PHYs" to "sublayer for BASE-R PHYs".

There's no PICS entry for the shall in "The PHY shall restart RX_CLK so that at least one positive transition occurs before it deasserts LPI."

Add PICS entry.

Use '2 superscript 9' rather than '2^9'. Also apply to '2^5' and '2^6' and '2^4' on line 38.

As per comment.
**Comment ID # 18**

**Comment Type**: E

**Comment Status**: D

Too much deletion has led to '.. may go into power mode ..'

**Suggested Remedy**

Change to '.. may go into low power mode ..'

**Proposed Response**

Response Status O

---

**Comment ID # 19**

**Comment Type**: T

**Comment Status**: D

Submitted on behalf of Iain Robertson

This sub-clause discusses output amplitude requirements during LPI but makes no mention of common mode requirements. It should stipulate the amount by which the common mode can deviate from the non-LPI value.

**Suggested Remedy**

Add a sentence, plus a spec in table 72-6. Suggested wording:

"During LPI, the common mode shall be maintained to within +/- TBDmV of the pre-LPI value"

Suggested spec in table 7-6:

"Common mode voltage deviation (max) during LPI: TBDmV"

Need discussion on the TBD value. For reference, PCI-E specs this as 100mV.

**Proposed Response**

Response Status O

---

**Comment ID # 20**

**Comment Type**: TR

**Comment Status**: D

The definition of one_us_timer needs reference the parameter T_1U defined in Table 49-3 (which really should be replacing Table 49-2) in order to establish the bounds on the timer terminal count.

**Suggested Remedy**

Change the definition of one_us_timer to: "This timer is used to count approximately 1 microsecond intervals. The timer terminal count is set to T1U. When the timer reaches terminal count it will set the one_us_timer_done = TRUE."

**Proposed Response**

Response Status O

---

**Comment ID # 21**

**Comment Type**: TR

**Comment Status**: D

I believe the actual requirement here is that the hold-off timer not expire before 13.7 microseconds have passed. It could be longer since the FEC would set signal_ok to TRUE after detecting two scrambled blocks.

**Suggested Remedy**

Change the first sentence to: "When rx_lpi_active is TRUE and rx_mode is set to DATA, start a hold-off timer whose duration is greater than or equal to 13.7 microseconds and enable. . .". Also change item b (page 278, line 7) to: "Expiration of the hold-off timer."

**Proposed Response**

Response Status O

---

**Comment ID # 22**

**Comment Type**: TR

**Comment Status**: D

The transition from RX_WAKE_DONE to LPI_K in the PCS Receive state diagram (Figure 36-7c, the second one) should be UCT (unconditional transition) and not SUDI. SUDI will cause to PCS Receive state diagram to be out of synchronization.

**Suggested Remedy**

Change the transition condition from SUDI to UCT.

**Proposed Response**

Response Status O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Comment</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>TR</td>
<td>D</td>
<td>The resolution to comment #359 draft 3.0 was missed. This must be implemented to make sense of the changes to Clause 55.</td>
<td>Define a new register bit: 1.147.1 : Fast retrain signal type : 1 = send IDLE during fast retrain, 0 = send local fault during fast retrain. Insert 45.2.1.76a.2 Fast retrain signal type (1.147.1) For PHYs that support fast retrain, this bit maps to lpi_fr_sigtype as defined in 55.4.5.1. When Fast retrain signal type is set to one, the PMA sends IDLE characters on the receive path during fast retrain. When Fast retrain signal type is set to zero, the PMA sends local fault on the receive path during fast retrain.</td>
<td>O</td>
</tr>
<tr>
<td>24</td>
<td>E</td>
<td>D</td>
<td>Duplicated period at the end of the line</td>
<td>delete it..</td>
<td>O</td>
</tr>
<tr>
<td>25</td>
<td>TR</td>
<td>D</td>
<td>Draft 3.0 Comment #174 was not implemented.</td>
<td>Implement Draft 3.0 Comment #174.</td>
<td>O</td>
</tr>
<tr>
<td>26</td>
<td>ER</td>
<td>D</td>
<td>Figure 55-4. PMA_FR_ACTIVE primitive is not required for EEE nor for normal operation.</td>
<td>Re-draw dashed rectangle to include only EEE signals. Employ another means to differentiate FR signals from normal and EEE signals. Add a note to indicate the signals relevant to FR.</td>
<td>O</td>
</tr>
<tr>
<td>27</td>
<td>E</td>
<td>D</td>
<td>New sentence is not indicates.</td>
<td>Add underline to sentence &quot;For EEE, ... during LPI.&quot;</td>
<td>O</td>
</tr>
<tr>
<td>28</td>
<td>E</td>
<td>D</td>
<td>Clean up list.</td>
<td>Create list starting each item i and ii on new line. Alternately, but less favored, change &quot;training ii) &quot; &quot;training and ii)&quot;.&quot;</td>
<td>O</td>
</tr>
</tbody>
</table>


Comment received

IEEE P802.3az D3.1 Energy Efficient Ethernet comments

D3.1 of 802.3az

When is alert_detect, set to NOT_DETECTED? Though the event DETECTED is obvious, it is not clear when alert_detect would be set to NOT_DETECTED. In fact, all of the definitions talk about the DETECTED event and the state machine really only requires the DETECTED event. Fixing this is somewhat complicated by the composite nature of the variable definition in 55.3.5.22.

Suggested Remedy

Re-define alert_detect to have single value DETECTED sent when alert signal is detected, otherwise parameter value is undefined.

Proposed Response

Response Status O

Brown, Matthew
Applied Micro (AMCC)

Comment Type TR

Comment Status D

Not clear what rx_lpi_active is.

Suggested Remedy

Change end of sentence to: "change in the rx_lpi_active variable as determined by the receive state diagram in Figure 55-16."

Proposed Response

Response Status O

Brown, Matthew
Applied Micro (AMCC)

Comment Type E

Comment Status D

Not clear what pcs_data_mode parameter is.

Suggested Remedy

Add sentence... "The pcs_data_mode parameter reflects the value of the pcs_data_mode variable as specified in 55.3.5.2.2."

Proposed Response

Response Status O

Brown, Matthew
Applied Micro (AMCC)

Comment Type E

Comment Status D

Figure 55-5 is part of 55.3.2 and so should be placed appropriately.

Suggested Remedy

Add heading 55.3.2 after 55.3 and move diagram to occur after 55.3.2.

Proposed Response

Response Status O

Brown, Matthew
Applied Micro (AMCC)

Comment Type ER

Comment Status D

Figure 55-5. fr_active parameter is not required for EEE nor for normal operation.

Suggested Remedy

Re-draw dashed rectangle to include only EEE signals. Employ another means to differentiate FR signals from normal and EEE signals. Add a note to indicate the signals relevant to FR.

Proposed Response

Response Status O

Brown, Matthew
Applied Micro (AMCC)

Comment Type ER

Comment Status D

Figure 55-5. fr_active parameter is not required for EEE nor for normal operation.

Suggested Remedy

Re-draw dashed rectangle to include only EEE signals. Employ another means to differentiate FR signals from normal and EEE signals. Add a note to indicate the signals relevant to FR.

Proposed Response

Response Status O

Brown, Matthew
Applied Micro (AMCC)
Comments received

IEEE P802.3az D3.1 Energy Efficient Ethernet comments

D3.1 of 802.3az

Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D

Figure 55-15 does not include states for EEE only and Figure 55-15a does not include dashed rectangles.

Suggested Remedy

Restate as follows: State transitions within dashed rectangles in Figure 55-15 and all states and transitions in Figure 55.15a shall be supported by PHys with the EEE capability. PHys without the EEE capability do not support these transitions.

Proposed Response Response Status O

---

Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D

Be clear about what is meant by "normal mode of operation".

Suggested Remedy

Change start of sentence to: "After reaching the normal mode of operation (pcs_data_mode = TRUE), ..."

Proposed Response Response Status O

---

Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D

Two variables cause transition to TX_NORMAL state.

Suggested Remedy

Change start of sentence to: "When PCS_Reset is asserted or pcs_data_mode is not asserted ...".

Proposed Response Response Status O

---

Brown, Matthew Applied Micro (AMCC)

Comment Type TR Comment Status D

Relevant to initial or subsequent normal retrain.

Suggested Remedy

Change "used for initial training" to "used for normal training". Alternately, "used for initial training or normal retraining".

Proposed Response Response Status O
Comments received

IEEE P802.3az D3.1 Energy Efficient Ethernet comments

D3.1 of 802.3az

Comment ID # 41

Proposed Response

Brown, Matthew
Applied Micro (AMCC)

Cl 55 SC 55.3.4a.3 P200 L50

Sentence fragment.

Comment Type: E
Comment Status: D

Suggested Remedy
Remove fragment or correct.

Proposed Response
Response Status: O

Comment ID # 42

Proposed Response

Brown, Matthew
Applied Micro (AMCC)

Cl 55 SC 55.3.5.2.2 P201 L29

LPI is indicated by LPI client and RS not MAC

Comment Type: E
Comment Status: D

Suggested Remedy
Change "MAC indicates" to "LPI client indicates".

Proposed Response
Response Status: O

Comment ID # 43

Proposed Response

Brown, Matthew
Applied Micro (AMCC)

Cl 55 SC 55.3.5.2.2 P201 L44

Convention in this Clause is to use receiver not RX.

Comment Type: E
Comment Status: D

Suggested Remedy
Replace "RX" with "receiver".

Proposed Response
Response Status: O

Comment ID # 45

Proposed Response

Brown, Matthew
Applied Micro (AMCC)

Cl 55 SC 55.3.5.2.2 P201 L34

Introduction of pcs_data_mode variable in state diagrams permits us to reduce alert_detect to simply indicated detection of the alert signal.

Comment Type: TR
Comment Status: D

Suggested Remedy
Reduce definition to include only detection of alert signal.

Proposed Response
Response Status: O

Comment ID # 46

Proposed Response

Brown, Matthew
Applied Micro (AMCC)

Cl 55 SC 55.3.5.2.2 P201 L44

The portion of the definition relating to detection of alert signal is not really clear. It is clear that alert_detect is set TRUE when the alert signal is detected. The definition of the alert detection function on page 216 only specifies when alert_detect is set. It is not clear when (or if) the alert_detect variable is ever set to FALSE. This variable is more of an event, than a state. What is the right unambiguous way to specify this.

Suggested Remedy
Provide a mechanism or description that explains how the alert_detect variable is set to FALSE after being set TRUE. One way to resolve this is as follows. (a) In Figure 55-16, add "alert_detect = FALSE" in states "RX_INIT" and "RX_W". Define alert_detect as being set to TRUE by ALERT detect process.

Proposed Response
Response Status: O

Comment ID # 47

Proposed Response

Brown, Matthew
Applied Micro (AMCC)

Cl 55 SC 55.2.2.9.1 P192 L26

alert_detect parameter values do not match alert_detect variable.

Comment Type: TR
Comment Status: D

Suggested Remedy
Either change values to match or explain that alert_detect parameter is DETECTED when alert_detect variable is TRUE and NOT_DETECTED with alert_detect variable is FALSE.

Proposed Response
Response Status: O
Comments received

IEEE P802.3az D3.1 Energy Efficient Ethernet comments

D3.1 of 802.3az

**Cl 55 SC 55.3.5.2.2 P202 L2** # 48
Brown, Matthew Applied Micro (AMCC)

Comment Type E 评论类型：E
Comment Status D 状态：D

For clarity, for a table for various definitions of lpi_tx_mode.

SuggestedRemedy

Create table for defining lpi_tx_mode. Two columns: value and condition. One row is used for each value.

Proposed Response  预定响应：
Response Status O 状态：O

**Cl 55 SC 55.3.5.2.2 P202 L29** # 49
Brown, Matthew Applied Micro (AMCC)

Comment Type ER 评论类型：ER
Comment Status D 状态：D

Consistent terminology.

SuggestedRemedy

Change "that have the fast retrain" to "that support the fast retrain".

Proposed Response  预定响应：
Response Status O 状态：O

**Cl 55 SC 55.3.5.2.2 P202 L32** # 50
Brown, Matthew Applied Micro (AMCC)

Comment Type ER 评论类型：ER
Comment Status D 状态：D

Given that lpi_fr_sign type is defined in the previous line to exist only for PHYs that support FR, it is unnecessary and somewhat confusing to qualify the IDLE state with support of fast retrain.

SuggestedRemedy

Change first sentence to: "This variable is set to IDLE if 1.147.1 is set to 1."

Proposed Response  预定响应：
Response Status O 状态：O

**Cl 55 SC 55.3.5.2.4 P203 L31** # 51
Brown, Matthew Applied Micro (AMCC)

Comment Type E 评论类型：E
Comment Status D 状态：D

Grammar.

SuggestedRemedy

Change "to the eight types" to "one of the eight types"

Proposed Response  预定响应：
Response Status O 状态：O

**Cl 55 SC 55.3.5.2.4 P203 L36** # 52
Brown, Matthew Applied Micro (AMCC)

Comment Type E 评论类型：E
Comment Status D 状态：D

Edit instruction.

SuggestedRemedy

Add underline to "and /LI/.

Proposed Response  预定响应：
Response Status O 状态：O

**Cl 55 SC 55.3.5.2.4 P204 L15** # 53
Brown, Matthew Applied Micro (AMCC)

Comment Type E 评论类型：E
Comment Status D 状态：D

Grammar.

SuggestedRemedy

Change "to the eight types" to "one of the eight types"

Proposed Response  预定响应：
Response Status O 状态：O

**Cl 55 SC 55.3.5.4 P205 L26** # 54
Brown, Matthew Applied Micro (AMCC)

Comment Type E 评论类型：E
Comment Status D 状态：D

No states are unique to EEE.

SuggestedRemedy

Change "States and transitions" to "transitions".

Proposed Response  预定响应：
Response Status O 状态：O

---

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

SORT ORDER: Comment ID

Comment ID # 54  Page 9 of 17  7/4/2010  3:59:20 PM
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Type</th>
<th>Comment</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>E</td>
<td>Figure 55-14. LFER monitor state is active when training has not completed; it may start in PCS_Test mode. This constitutes a modification to the base standard, but improves the behavior.</td>
<td>O</td>
</tr>
<tr>
<td>56</td>
<td>E</td>
<td>Figure 55-15. Transition from TX_E to TX_L must be indicated as EEE only.</td>
<td>O</td>
</tr>
<tr>
<td>57</td>
<td>E</td>
<td>Figure 55-16. Last term in transition criteria on open transition to RX_INIT is incorrect. When not in PCS_Data mode send LF either if not in fast re-train or if in fast retrain only if lpi_fr_sigtpe is not IDLE.</td>
<td>O</td>
</tr>
</tbody>
</table>

**Suggested Remedy**

- Change open transition to LFER_MT_INIT, replacing "!block_lock" with "!pcs_data_mode".
- Add dashed rectangle around transition from TX_E to TX_L.
- Change last term to "((!(lpi_fr_sigtpe==IDLE) * lpi_fr_active) * !pcs_data_mode)".

**Proposed Response**

Brown, Matthew
Applied Micro (AMCC)

**Comment ID** 60

**Type**: TR/technical required  
**Comment Status**: D/dispatched  
**Response Status**: O/open
Comments received

IEEE P802.3az D3.1 Energy Efficient Ethernet comments

D3.1 of 802.3az

Cl 55 SC 55.4.1 P213 L 8 # 61
Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D
Figure 55-17. fr_active parameter is not required for EEE nor for normal operation.

SuggestedRemedy
- Re-draw dashed rectangle to include only EEE signals. Employ another means to differentiate FR signals from normal and EEE signals. Add a note to indicate the signals are relevant to FR.

Proposed Response Response Status O

Cl 55 SC 55.4.2.2 P213 L 52 # 62
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D
lower power operation is not commonly used term

SuggestedRemedy
- Change "normal and lower power operation" to "normal and LPI operation".

Proposed Response Response Status O

Cl 55 SC 55.4.2.2.1 P214 L 20 # 63
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D
LDPC frames not being sent

SuggestedRemedy
- Change "LDPC frames" to "LDPC frame periods".

Proposed Response Response Status O

Cl 55 SC 55.4.2.2.1 P214 L 25 # 64
Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D
Use normal form for primitive/parameter.

SuggestedRemedy
- Change "PMA_CONFIG.indication parameter config" to "PMA_CONFIG.indication(config)".

Proposed Response Response Status O

Cl 55 SC 55.4.2.2.1 P215 L 2 # 65
Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D
Use normal form for primitive/parameter.

SuggestedRemedy
- Change "PMA_CONFIG.indication parameter config" to "PMA_CONFIG.indication(config)".

Proposed Response Response Status O

Cl 55 SC 55.4.2.2.1 P215 L 22 # 66
Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D
The wake signal is not properly defined here. Either fix or refer to official definition.

SuggestedRemedy
- Change sentence to: "The alert signal is followed by a wake signal as specified in 55.3.2.2.9a."

Proposed Response Response Status O

Cl 55 SC 55.4.2.2.2 P215 L 37 # 67
Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D
Use normal form for primitive/parameter.

SuggestedRemedy
- Change "PMA_CONFIG.indication parameter config" to "PMA_CONFIG.indication(config)".

Proposed Response Response Status O

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID

Comments received

---

**Comment ID # 68**

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

**Comment:** Use normal form for primitive/parameter.

**Suggested Remedy:** Change "PMA_CONFIG.indication parameter config" to "PMA_CONFIG.indication(config)".

---

**Comment ID # 69**

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

**Comment:** Similar requirements exist for fast retrain.

**Suggested Remedy:** Add sentence, "For PHYs that support fast retrain, further requirements for this transition are described in 55.4.2.5.15."

---

**Comment ID # 70**

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

**Comment:** Similar requirements exist for fast retrain.

**Suggested Remedy:** Add sentence, "For PHYs that support fast retrain, further requirements for this transition are described in 55.4.2.5.15."

---

**Comment ID # 71**

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

**Comment:** Can also go to the LPI transmit mode.

**Suggested Remedy:** Add the following "... and to the LPI transmit mode under control of the local LPI client."

---

**Comment ID # 72**

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

**Comment:** Grammar.

**Suggested Remedy:** Change "THP turn" to "THP turns."

---

**Comment ID # 73**

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

**Comment:** Reference to incorrect figure.

**Suggested Remedy:** Change 55-13a to 55-13.

---

**Comment ID # 74**

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

**Comment:** Relevant to initial or subsequent normal retrain.

**Suggested Remedy:** Change "used for initial training" to "used for normal training". Alternately, "used for initial training or normal retraining."

---
Cl 55 SC 55.4.2.6a P217 L38 #75
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D
lower power mode is not commonly used term

Suggested Remedy
Change "lower power receive mode" to "LPI receiver mode".

Proposed Response Response Status O

Cl 55 SC 55.4.5.1 P218 L33 #76
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D
Use superscript for exponential terms.

Suggested Remedy
For 2^9 and 2^4, use superscript for 9 and 4, respectively.

Proposed Response Response Status O

Cl 55 SC 55.4.5.1 P218 L37 #77
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D
Use superscript for exponential terms.

Suggested Remedy
For 2^6 and 2^4, use superscript for 6 and 4, respectively.

Proposed Response Response Status O

Cl 45 SC 45.2.1.76a.3 P121 L4 #78
Brown, Matthew Applied Micro (AMCC)

Comment Type TR Comment Status D
What does it mean to disable this bit?

Suggested Remedy
Change "disabling this bit" to "setting this bit to 0".

Proposed Response Response Status O

Cl 55 SC 55.4.5.1 P219 L18 #80
Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D
Common terminology.

Suggested Remedy
Change "low power receive mode" to "LPI mode".

Proposed Response Response Status O

Cl 55 SC 55.4.6.1 P220 L33 #81
Brown, Matthew Applied Micro (AMCC)

Comment Type TR Comment Status D
Figure 55-24. fr_maxwait_timer_done not defined

Suggested Remedy
Define fr_max_wait_timer in 55.4.5.2

Proposed Response Response Status O
**IEEE P802.3az D3.1 Energy Efficient Ethernet comments**

**Comments received**

### CI 55 SC 55.4.6.1 P220 L33 # 82

Brown, Matthew

**Comment Type**: TR

**Comment Status**: D

- Figure 55-27b, link_fail_signal_timer_done not defined

**Suggested Remedy**

- Define fr_max_wait_timer in 55.4.5.2

**Proposed Response**

**Response Status**: O

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### CI 55 SC 55.4.25.14 P216 L49 # 83

Brown, Matthew

**Comment Type**: TR

**Comment Status**: D

- The is a pile-on comment for Draft 3.0 comment #359. The response to comment #359 addresses incorrectly detecting a failed link by optionally replacing the local fault signal with the idle signal during fast retrain. The response did not address loss of data during a fast retrain. To prevent loss of data, a mechanism is required which informs the MAC to defer transmission; while not indicating a link failure, avoiding adverse effects on MAC clients.

**Suggested Remedy**

- Provide a mechanism to signal from the PHY to the RS a temporary interruption during fast retrain. Provide a mechanism in the RS to cause the MAC to defer transmission of packets while fast retrain is active, particular for a MAC which is connected to a PHY through a XAUI interface. To accomplish this create a new character, similar to /LI/, call tentatively /CRS/ (carrier sense). Send /CRS/ continuous to the RX XGMII while fast retrain is active. In the RS, while receiver /CRS/ from the RX XGMII set PLS_CARRIER.indication(CARRIER_STATUS) to CARRIER_ON.

**Proposed Response**

**Response Status**: O

---

### CI 46 SC 46.1.7.3 P140 L42 # 84

Brown, Matthew

**Comment Type**: T

**Comment Status**: D

- CARRIER status has values CARRIER_ON and CARRIER_OFF.

**Suggested Remedy**

- Change "CARRIER_STATUS is set to false" to "CARRIER_STATUS is set to CARRIER_OFF".

**Proposed Response**

**Response Status**: O

---

### CI 54 SC 54.5.6.1 P220 L33 # 85

Brown, Matthew

**Comment Type**: TR

**Comment Status**: D

- CARRIER status has values CARRIER_ON and CARRIER_OFF.

**Suggested Remedy**

- Change "CARRIER_STATUS = OFF" to "CARRIER_STATUS= CARRIER_OFF".

**Proposed Response**

**Response Status**: O

---

### CI 46 SC 46.3a.2.2 P145 L28 # 85

Brown, Matthew

**Comment Type**: T

**Comment Status**: D

- CARRIER status has values CARRIER_ON and CARRIER_OFF.

**Suggested Remedy**

- Change "CARRIER_STATUS = ON" to "CARRIER_STATUS= CARRIER_ON".

**Proposed Response**

**Response Status**: O

---

### CI 46 SC 46.3a.2.2 P145 L36 # 86

Brown, Matthew

**Comment Type**: T

**Comment Status**: D

- There is a potential dead-lock definition if the timer expires at the same time as tx_raw transitions from LI to !LI

**Suggested Remedy**

- Remove the tx_tr_timer

**Proposed Response**

**Response Status**: O

---

### CI 49 SC 49 P174 L1 # 87

Horner, Rita

**Comment Type**: T

**Comment Status**: D

- TX_REFRESH state no longer exists

**Suggested Remedy**

- Remove the tx_tr_timer

**Proposed Response**

**Response Status**: O

---

### CI 49 SC 49 P178 L # 88

Horner, Rita

**Comment Type**: T

**Comment Status**: D

- There is a potential dead-lock definition if the timer expires at the same time as tx_raw transitions from LI to !LI

**Suggested Remedy**

- Remove the tx_tr_timer done from the state transition TX_SLEEP to TX_ACTIVE

**Proposed Response**

**Response Status**: O

---

**TYPE**: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

**COMMENT STATUS**: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

**SORT ORDER**: Comment ID

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Comment ID # 88
Horner, Rita  
Avago Technologies

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

The exit from TX_QUiet should be tx_timer_done or tx_raw != LI

**Suggested Remedy**

Remove the requirement of !tq_timer_done on the exit from TX_QUiet

**Comment ID**: #90  
**Response Status**: O

---

Horner, Rita  
Avago Technologies

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

Correct the definition for rx_fault

**Suggested Remedy**

rx_fault should be changed to "receive fault" as it is referred to in the MDIO definition and in 49.2.14.1. PCS_status

**Comment ID**: #91  
**Response Status**: O

---

Brown, Matthew  
Applied Micro (AMCC)

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

The label "PLS_Service Primitives" only applies to primitives starting with PLS.

**Suggested Remedy**

Change "PLS_Service Primitives" to "PLS Service Primitives" and move to a location within the set of PLS primitives. Add dashed rectangle around PLS service primitives to differentiate from the LPI client service primitives.

**Comment ID**: #94  
**Response Status**: O

---

Healey, Adam  
LSI Corporation

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

The transition from LPI_K back to LP_IDLED is inconsistent with the equivalent legacy transition (RX_K to IDLE_D) when xmit != DATA. If xmit != DATA and SUDI( "member of set of" ![D][#8727;][!D][#D21.5][#8727;][!D][D2.2]]), the state diagram would get stuck into the LPI_K state indefinitely. However, this is highly unlikely. What is more likely is that auto-negotiation is restarted while the receiver is detecting LPI. In this case, the state diagram would remain in the LPI_K state during the data code-group reception, and would transition into the RX_INVALID state (via "F") when the next /K28.5/ is received. At worst, this would force an Auto-Negotiation restart (via RUDI(INVALID)) but this seems like an unnecessary glitch with a straightforward work-around.

**Suggested Remedy**

For the transition from LPI_K to LPI_IDL D, change the term xmit != DATA &![#8727;  
SUDI( "member of set of" ![D][#8727;][!D][D21.5][#8727;][!D][D2.2]])) to xmit != DATA &![#8727;  
SUDI( "member of set of" ![D][#8727;][!D][D21.5][!D][D2.2]]). Also remove the term xmit = DATA from the transition from LPI_K to IDLE_D (via "C").

**Comment ID**: #93  
**Response Status**: O

---
In order to advertise the fast retrain ability (45.7.10), the management needs to know if the PPHY is capable of fast retrain. Also the management may choose not to advertise fast retrain ability to the link partner, even if the local PHY is fast retrain capable. So define a bit to fast retrain ability bit to fast retrain control/status register. This bit will be set to one for PHYs that implement fast retrain capability.

**Suggested Remedy**

Add a bit to 1.147, 10GBASE-T fast retrain status & control register, to indicate PHY fast retrain capability.

**Proposed Response**

Response Status: O

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The spirit of the EEE objectives is not to drop or corrupt frames; however fast retrain mechanism, as defined, has the potential to drop frames. Some of the upper layer protocols expect no packet drop characteristics and certain reliability at link level. Fast retrain condition may cause frame loss up to several ms. So implement a mechanism that has ability to defer frame transmission during fast retrain.

**Suggested Remedy**

Set the PLS_CARRIER.indication primitive when the PMA indicates fr_active (PMA_FR_ACTIVE.indication) to defer transmission during fast retrain. This will ensure no packet drop during fast retrain.

**Proposed Response**

Response Status: O

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Assertion of CARRIER_STATUS by the RS should be based upon LPI_REQUEST not LPI_INDICATE. i.e., it is based upon the transmit LPI state, not the receive side. This statement in 46.1.7.3 is inconsistent with the reference state diagram (46-10a) and the description in 78.1.3.1.

**Suggested Remedy**

Change LPI_INDICATION to LPI_REQUEST.

**Proposed Response**

Response Status: O
### Proposed Response

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

It appears that the response to Comment #359 has not been fully implemented. Implement the changes to Clause 45 as per response to #359

**Suggested Remedy**

Also make the following changes to Clause 45:

- Define a new register bit:
  - 1.147.1: Fast retrain signal type: 1 = send IDLE during fast retrain, 0 = send local fault during fast retrain
- Insert 45.2.1.76a.2 Fast retrain signal type (1.147.1)
- For PHYs that support fast retrain, this bit maps to lpi_fr_sigttype as defined in 55.4.5.1.

When Fast retrain signal type is set to one, the PMA sends IDLE characters on the receive path during fast retrain. When Fast retrain signal type is set to zero, the PMA sends local fault on the receive path during fast retrain.

**Proposed Response**

**Response Status**: O

---

### Proposed Response

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

As per D3.1, there is an option in the PMA to either send IDLE or Local Fault during fast retrain. However, it is possible for one link partner to enable IDLE and other link partner may enable to send Local Fault condition. So the link partners may have different settings at either end of the link and this may cause inconsistent behavior at the link/system level.

**Suggested Remedy**

One possibility is to provide a mechanism to advertise the fast retrain signal type along with fast retrain ability, so both link partner can enable this feature consistently. Alternatively, do not provide an optional feature, just specify one mechanism to signal fast retrain active condition. This will ensure consistent behavior at the either end of the link.

**Proposed Response**

**Response Status**: O

---

### Proposed Response

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

Use primitive/parameter name.

**Suggested Remedy**

Change "the LPI_INDICATION parameter is set to DE-ASSERT in the LP_IDLE indication primitive of the LPI Client service interface" to "LP_IDLE.indication(LPI_INDICATION) is set to DE-ASSERT"

**Proposed Response**

**Response Status**: O

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### Proposed Response

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

Use primitive/parameter name.

**Suggested Remedy**

Change "the LPI_INDICATION parameter to ASSERT in the LP_IDLE indication primitive of the LPI Client service interface" to "LP_IDLE.indication(LPI_INDICATION) to ASSERT"

**Proposed Response**

**Response Status**: O

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### Proposed Response

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

For 100BASE-TX list 24 and 25. For 1000BASE-KX list 70, 35. For 10GBASE-KX4 list 71, 48. For 10GBASE-KR list 72, 51, 49.

**Suggested Remedy**

Table 78-1. All relevant clauses should be listed here. In particular, for 100BASE-TX clause 25 should be listed.

**Proposed Response**

**Response Status**: O