

**Cl 78**    **SC 78.6.3**    **P270**    **L6**    # **1**  
Diab, Wael    Broadcom Corporation

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

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 consistant throughout.

*SuggestedRemedy*

- Remove the PICs entry for AN from C78
- Adjust the text around the PICs to only reflect DLL requirements
- Remove the corresponding shall from 78.3
- In approprate 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 consistant 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)

**Proposed Response**    **Response Status**    **W**

PROPOSED ACCEPT IN PRINCIPLE.

Specific changes in 28C, 28D, 73A, 24, 40, 55, 73 and/or other appropriate clauses.

**Cl 24**    **SC 24.4.1.4.3**    **P49**    **L47**    # **2**  
Anslow, Peter    Ciena Corporation

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

On page 49, line 47 (diff document) there is a reference to 25.4a.2 (link does not work) but 25.4a.2 does not exist in the draft.  
In page 50, line 14 there is a reference to 25.4a.1 (link does not work) but 25.4a.1 does not exist in the draft.

On page 53, line 47 is "Insert 25.4a at the end of 25.4 as shown below:". However, below this is subclause 25.5, followed by 25.50.1 etc. with no other editing instructions. These subclause numbers should presumably all be 25.4a.xxx

The clause numbering below this is also wrong. e.g. the PICS for clause 25 is 25.5 not 25.6

*SuggestedRemedy*

Correct clause numbering currently shown as 25.5 and 25.50 to 25.4a.  
Change "Insert 25.4a at the end of 25.4 as shown below:" to "Insert 25.4a after 25.4 as shown below:"

Make sure links in 24.4.1.4.3 and 24.4.1.5.3 remain correct and work properly.  
Also correct the clause numbering for the PICS section to 25.5 as per the editing instructions there.

**Proposed Response**    **Response Status**    **W**

PROPOSED ACCEPT IN PRINCIPLE.

P.55, L.47, Change "Insert 25.4a at the end of 25.4 as shown below:" to "Insert 25.4a after 25.4 as shown below:"

P.56, L.1, Change Subclause number 25.5 to 25.4a  
Change all subsequent Subclause number from 25.50.xx to 25.4a.xx

P.61, L.1, Change Subclause number 25.6 to 25.5  
Change all subsequent Subclause number from 25.6.xx to 25.5.xx

P.61, L.12, Change the reference of Subclause number in item LPI from 25.5 to 25.4a

**Cl 49**    **SC 49.2.13.2.2**    **P171**    **L53**    # **3**  
Anslow, Peter    Ciena Corporation

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

The editing instruction says "Insert new variables into 49.2.13.2.2, ..." but the heading beneath this is "49.2.9.2.2 Variables"

*SuggestedRemedy*

Change clause number in heading to 49.2.13.2.2

**Proposed Response**    **Response Status**    **W**

PROPOSED ACCEPT.

CI 51 SC 51.1 P191 L4 # 4  
 Anslow, Peter Ciena Corporation

Comment Type E Comment Status D

The editing instruction says "Insert the following row into table 51.7.3:", but table 51.7.3 does not exist.

*SuggestedRemedy*

Change "Insert the following row into table 51.7.3:" to "Insert the following row at the end of the table in 51.10.3:

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 55 SC 55.2.2.11 P201 L10 # 5  
 Anslow, Peter Ciena Corporation

Comment Type E Comment Status D

There is no editing instruction regarding 55.2.2.11 or 55.2.2.12

*SuggestedRemedy*

On page 200 change "Insert 55.2.2.9 and 55.2.2.10 after section 55.2.2.8 as shown below:" to "Insert 55.2.2.9, 55.2.2.10, 55.2.2.11 and 55.2.2.12 after section 55.2.2.8 as shown below:"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The change is correct but the page number is 192]

CI 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 W

PROPOSED ACCEPT.

CI 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 W

PROPOSED ACCEPT.

CI 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Will delete section 71.3

CI 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:" butb there are 4 paragrap of changed text.

*SuggestedRemedy*

Change editing instruction to "Change 72.6.4 as follows:"

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 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 W  
 PROPOSED ACCEPT.

CI 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:" Also, change the title of Figure 74-2 to "Functional block diagram for 10GBASE-R PHYs"

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 74 SC 74.5.1 P276 L18 # 12  
 Anslow, Peter Ciena Corporation

Comment Type E Comment Status D  
 The text starting "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.

*SuggestedRemedy*

Show the inserted text in underline and the correct size.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 74 SC 74.5.1.4 P276 L22 # 13  
 Anslow, Peter Ciena Corporation

Comment Type E Comment Status D  
 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.

*SuggestedRemedy*

Remove the underline from subclauses 74.5.1.4 through 74.5.1.7

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 74 SC 74.10.2.3 P278 L27 # 14  
 Anslow, Peter Ciena Corporation

Comment Type E Comment Status D  
 The editing instruction is "Change 74.10.2.3 as shown below:" but only one of the three functions is shown.

*SuggestedRemedy*

Show the two unmodified functions in normal font.

Proposed Response Response Status W  
 PROPOSED REJECT.

Several versions back the decision was to show only the changes.

CI 74 SC 74.11 P279 L1 # 15  
 Anslow, Peter Ciena Corporation

Comment Type E Comment Status D  
 802.3ba changed the title of clause 74.11

*SuggestedRemedy*

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

Proposed Response Response Status W  
 PROPOSED ACCEPT.

**Cl 46**    **SC 46.3.2.4**    **P142**    **L52**    # **16**  
 Turner, Edward J    Gnodal Ltd

**Comment Type** **T**    **Comment Status** **D**  
 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."

**SuggestedRemedy**  
 Add PICS entry.

**Proposed Response**    **Response Status** **W**  
 PROPOSED REJECT.

The "shall" at this point refers to the PHY that is attached to this sublayer, therefore the PICS entry would be inappropriate. This is similar to numerous other examples in RS clauses.

**Cl 55**    **SC 55.4.5.1**    **P218**    **L34**    # **17**  
 Turner, Edward J    Gnodal Ltd

**Comment Type** **E**    **Comment Status** **D**  
 Use '2 superscript 9' rather than '2^9'.  
 Also apply to '2^5' and '2^6' and '2^4' on line 38.

**SuggestedRemedy**  
 As per comment.

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

**Cl 70**    **SC 70.2.1**    **P231**    **L48**    # **18**  
 Turner, Edward J    Gnodal Ltd

**Comment Type** **E**    **Comment Status** **D**  
 Too much deletion has led to '.. may go into w power mode ..'

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

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

**Cl 72**    **SC 72.7.1.4**    **P244**    **L31**    # **19**  
 Bennett, Michael    Lawrence Berkeley Na

**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.

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

Need to supply TBD mV. To be voted on by Task Force.

**Cl 36**    **SC 36.2.5.2.2**    **P88**    **L48**    # **20**  
 Healey, Adam    LSI Corporation

**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.

**SuggestedRemedy**  
 Change the transition condition from SUDI to UCT.

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

CI 49 SC 49.2.13.2.5 P175 L52 # 21  
Healey, Adam LSI Corporation

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.

*SuggestedRemedy*

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 W

PROPOSED ACCEPT.

CI 74 SC 74.7.4.8 P277 L47 # 22  
Healey, Adam LSI Corporation

Comment Type T 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.

*SuggestedRemedy*

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 W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.76a P120 L50 # 23  
Barrass, Hugh Cisco Systems, Inc.

Comment Type TR Comment Status D

The resolution to comment #359 draft 3.0 was missed. This must be implemented to make sense of the changes to Clause 55.

*SuggestedRemedy*

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.

Proposed Response Response Status W

PROPOSED ACCEPT.

Accept the proposed response except that the subclause number will be 45.2.1.76a.5 (if comments #95 and #79 are accepted).

CI 79 SC 79.3.a P271 L28 # 24  
Barrass, Hugh Cisco Systems, Inc.

Comment Type E Comment Status D

Duplicated period at the end of the line

*SuggestedRemedy*

delete it..

Proposed Response Response Status W

PROPOSED ACCEPT.

**Cl 78**    **SC 78.3**    **P258**    **L50**    # **25**  
Brown, Matthew    Applied Micro (AMCC)

**Comment Type**    **TR**    **Comment Status**    **D**  
Draft 3.0 Comment #174 was not implemented.

**SuggestedRemedy**

Implement Draft 3.0 Comment #174.

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

Response to Comment #174 on D3.0 is shown below:  
ACCEPT IN PRINCIPLE.

Change the paragraph starting on line 47 of 78.3 to read:

"During the link establishment process, both link partners indicate their EEE capabilities. EEE is supported only if during auto-negotiation both the local device and link partner advertise the EEE capability for the resolved PHY type. If EEE is not supported, all EEE functionality is disabled and the LPI client shall not assert LPI."

All EEE PHY clauses need to add a reference to 78.3 where EEE support is first mentioned.

**Cl 55**    **SC 55.1.4**    **P191**    **L5**    # **26**  
Brown, Matthew    Applied Micro (AMCC)

**Comment Type**    **ER**    **Comment Status**    **D**  
Figure 55-4. PMA\_FR\_ACTIVE primitive 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 relevant to FR.

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

**Cl 55**    **SC 55.2.2.3.1**    **P191**    **L51**    # **27**  
Brown, Matthew    Applied Micro (AMCC)

**Comment Type**    **E**    **Comment Status**    **D**  
New sentence is not indicates.

**SuggestedRemedy**

Add underline to sentence "For EEE, ... during LPI."

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

**Cl 55**    **SC 55.2.2.3.1**    **P192**    **L5**    # **28**  
Brown, Matthew    Applied Micro (AMCC)

**Comment Type**    **E**    **Comment Status**    **D**  
Clean up list.

**SuggestedRemedy**

Create list starting each item i and ii on new line.  
Alternately, but less favored, change "training ii)" "training and ii)".

**Proposed Response**    **Response Status**    **W**  
PROPOSED REJECT.

It is not clear that the remedy is an improvement.

**Cl 55**    **SC 55.2.2.9.1**    **P192**    **L28**    # **29**  
Brown, Matthew    Applied Micro (AMCC)

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

**SuggestedRemedy**

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

**Proposed Response**    **Response Status**    **W**  
PROPOSED REJECT.

There are only two values that alert\_detect can be set to. If, as the comment states, it is clear when the first value is used, then it should be equally clear when the second value is used.

Whether the second value is not\_detected, false, or undefined is moot since it is not used/detected elsewhere.

Cl 55 SC 55.2.2.10.1 P193 L4 # 30  
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D

Not clear what rx\_lpi\_active is.

*SuggestedRemedy*

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 W

PROPOSED ACCEPT.

Cl 55 SC 55.2.2.11.1 P193 L19 # 31  
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D

Not clear what pcs\_data\_mode parameter is.

*SuggestedRemedy*

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 W

PROPOSED REJECT.

The text states clearly that the variable is set by the PMA PHY control state machine. This change is unnecessary.

Cl 55 SC 55.2.2.12 P193 L42 # 32  
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D

Not clear what fr\_active parameter is.

*SuggestedRemedy*

Add sentence ... "The fr\_active parameter reflects the value of the fr\_active variable specified in 55.3.5.2.2."

Proposed Response Response Status W

PROPOSED REJECT.

The text states clearly that the variable is set by the PMA PHY control state machine. This change is unnecessary.

Cl 55 SC 55.3.2 P194 L10 # 33  
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.

*SuggestedRemedy*

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

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.3.2 P194 L26 # 34  
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.

*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 relevant to FR.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.3.2.2 P194 L42 # 35  
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.

*SuggestedRemedy*

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 W

PROPOSED REJECT.

It is not clear what is incorrect in the current labeling.

Figure 55-15 notes that transitions inside dashed rectangles are required for EEE operation. Figure 55-15a notes that the entire diagram is required for EEE operation.

The suggested remedy does not improve the diagrams.

Cl 55 SC 55.3.2.2 P194 L48 # 36  
Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D

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

*SuggestedRemedy*

Change start of sentence to: "After reaching the normal mode of operation (pcs\_data\_mode = TRUE), ..."

Proposed Response Response Status W

PROPOSED REJECT.

The Clause 55 base text defines a training mode of operation and a normal mode of operation. This description reuses those terms.

Cl 55 SC 55.3.2.2.21 P196 L30 # 37  
Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D

Two variables cause transition to TX\_NORMAL state.

*SuggestedRemedy*

Change start of sentence to: "When PCS\_Reset is asserted or pcs\_data\_mode is not asserted ...".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.3.2.3 P197 L44 # 38  
Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D

Sentence almost sounds like LPI is triggered by completion of training. Also, successful training is indicated by pcs\_data\_mode.

*SuggestedRemedy*

Change end of sentence to: "after the PHY has successfully completed training as indicated by pcs\_data\_mode equals TRUE."

Proposed Response Response Status W

PROPOSED REJECT.

This change does not seem necessary.

Cl 55 SC 55.3.4a.1 P199 L27 # 39  
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D

Make sure that active is associated with pair, not pair and refresh\_active.

*SuggestedRemedy*

Change "active pair" to "active-pair".

Proposed Response Response Status W

PROPOSED REJECT.

It's not clear what problem this is fixing.

Cl 55 SC 55.3.4a.3 P199 L36 # 40  
Brown, Matthew Applied Micro (AMCC)

Comment Type TR Comment Status D

Relevant to initial or subsequent normal retrain.

*SuggestedRemedy*

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

Proposed Response Response Status W

PROPOSED ACCEPT.

"used for normal training"

Cl 55 SC 55.3.4a.3 P200 L50 # 41  
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D

Sentence fragement.

*SuggestedRemedy*

Remove fragment or correct.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This should be a subclause title 55.3.5

Cl 55 SC 55.3.5.2.2 P201 L29 # 42  
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D  
LPI is indicated by LPI client and RS not MAC

*SuggestedRemedy*

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

Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 55 SC 55.3.5.2.2 P201 L44 # 43  
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D  
Convention in this Clause is to use receiver not RX.

*SuggestedRemedy*

Replace "RX" with "receiver".

Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 55 SC 55.3.5.2.2 P201 L49 # 44  
Brown, Matthew Applied Micro (AMCC)

Comment Type T Comment Status D  
Grammar.

*SuggestedRemedy*

Replace comma at end of sentence with period.

Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 55 SC 55.3.5.2.2 P201 L34 # 45  
Brown, Matthew Applied Micro (AMCC)

Comment Type TR Comment Status D  
Introduction of pcs\_data\_mode variable in state diagrams permits us to reduce alert\_detect to simply indicated detection of the alert signal.

*SuggestedRemedy*

Reduce definition to include only detection of alert signal.

Proposed Response Response Status W  
PROPOSED REJECT.

The commentor should prepare a more detailed remedy.

Cl 55 SC 55.3.5.2.2 P201 L44 # 46  
Brown, Matthew Applied Micro (AMCC)

Comment Type TR Comment Status D  
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.

*SuggestedRemedy*

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 W  
PROPOSED REJECT.

See #29. The description is clear.

Cl 55 SC 55.2.2.9.1 P192 L26 # 47  
Brown, Matthew Applied Micro (AMCC)

Comment Type **TR** Comment Status **D**  
alert\_detect parameter values do not match alert\_detect variable.

*SuggestedRemedy*

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 **W**  
PROPOSED ACCEPT IN PRINCIPLE.

Change DETECTED to TRUE, change NOT\_DETECTED to FALSE in 55.2.2.9.1.

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

Comment Type **E** Comment Status **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 Response Status **W**  
PROPOSED REJECT.

This does not seem necessary.

Also the comment is out of scope; this text has not been changed for several drafts.

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

Comment Type **ER** Comment Status **D**  
Consistent terminology.

*SuggestedRemedy*

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

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

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

Comment Type **ER** Comment Status **D**  
Given that lpi\_fr\_sigtype 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 Response Status **W**  
PROPOSED REJECT.

This is not necessary.

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

Comment Type **E** Comment Status **D**  
Grammar.

*SuggestedRemedy*

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

Proposed Response Response Status **W**  
PROPOSED REJECT.

As stated by the text, a vector may simultaneously belong to C and I, so the proposed remedy is not accurate.

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

Comment Type **E** Comment Status **D**  
Edit instruction.

*SuggestedRemedy*

Add underline to "and /LI."

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

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

Comment Type E Comment Status D  
Grammar.

*SuggestedRemedy*

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

Proposed Response Response Status W  
PROPOSED REJECT.

As stated by the text, a vector may simultaneously belong to C and I, so the proposed remedy is not accurate.

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

Comment Type E Comment Status D  
No states are unique to EEE.

*SuggestedRemedy*

Change "States and transitions" to "transitions".

Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 55 SC 55.3.5.4 P206 L3 # 55  
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D  
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.

*SuggestedRemedy*

Change open transition to LFER\_MT\_INIT, replacing "!block\_lock" with "!pcs\_data\_mode".

Proposed Response Response Status W  
PROPOSED REJECT.

It is not clear why this is necessary. It would help if the commentator gave more details on why this change is justified.

Cl 55 SC 55.3.5.4 P207 L34 # 56  
Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D  
Figure 55-15. Transition from TX\_E to TX\_L must be indicates as EEE only.

*SuggestedRemedy*

Add dashed rectangle around transition from TX\_E to TX\_L.

Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 55 SC 55.3.5.4 P209 L3 # 57  
Brown, Matthew Applied Micro (AMCC)

Comment Type TR Comment Status D  
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\_sigtype is not IDLE.

*SuggestedRemedy*

Change last term to : "(! (lpi\_fr\_sigtype==IDLE) \* lpi\_fr\_active) + !lpi\_fr\_active) \* ! pcs\_data\_mode"

Proposed Response Response Status W  
PROPOSED REJECT.

It appears that the existing equation is correct.

The editor believes that the suggested change is equivalent to the existing transition condition.

Cl 55 SC 55.3.5.4 P209 L3 # 58  
Brown, Matthew Applied Micro (AMCC)

Comment Type ER Comment Status D  
Figure 55-16. Last term in transition criteria on open transition to FR\_RX\_INIT could be clarified by adding brackets around comparison of lpi\_fr\_sigtype. Also, outer brackets are not required so they can be removed.

*SuggestedRemedy*

Change last term to : "( (lpi\_fr\_sigtype==IDLE) \* lpi\_fr\_active) \* ! pcs\_data\_mode"

Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 55 SC 55.3.5.4 P209 L3 # 59  
Brown, Matthew Applied Micro (AMCC)

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

Figure 55-16. Use of block\_lock in open transition to RX\_INIT and FR\_RX\_INIT is redundant since it is further qualified by pcs\_data\_mode.

*SuggestedRemedy*

Remove !block\_lock term from open transition to RX\_INIT and FR\_RX\_INIT.

Proposed Response Response Status **W**

PROPOSED REJECT.

Pcs\_data\_mode does not exist for legacy 10GBASE-T phys, therefore it needs to remain.

Cl 55 SC 55.3.6.1 P212 L10 # 60  
Brown, Matthew Applied Micro (AMCC)

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

Grammar.

*SuggestedRemedy*

Change "indicates that current" to "indicates the current".

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Cl 55 SC 55.4.1 P213 L8 # 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 **W**

PROPOSED ACCEPT.

Cl 55 SC 55.4.2.2 P213 L52 # 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 **W**

PROPOSED ACCEPT.

Cl 55 SC 55.4.2.2.1 P214 L20 # 63  
Brown, Matthew Applied Micro (AMCC)

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

LDPC frames not being sent

*SuggestedRemedy*

Change "LPDC frames" to "LDPC frame periods".

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Cl 55 SC 55.4.2.2.1 P214 L25 # 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 **W**

PROPOSED ACCEPT.

Cl 55 SC 55.4.2.2.1 P215 L2 # 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 **W**

PROPOSED ACCEPT.

CI 55 SC 55.4.2.2.1 P215 L22 # 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 W

PROPOSED REJECT.

The description seems adequate. The reference in the suggested remedy does not give details of the wake signal so would be a poorer choice.

CI 55 SC 55.4.2.2.2 P215 L37 # 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 W

PROPOSED ACCEPT.

CI 55 SC 55.4.2.2.2 P215 L42 # 68  
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 W

PROPOSED ACCEPT.

CI 55 SC 55.4.2.5.14 P216 L29 # 69  
Brown, Matthew Applied Micro (AMCC)

Comment Type T Comment Status D

Similar requirements exist for fast retrain.

*SuggestedRemedy*

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

Proposed Response Response Status W

PROPOSED REJECT.

The requirements for fast retrain do not affect normal training.

CI 55 SC 55.4.2.5.14 P216 L39 # 70  
Brown, Matthew Applied Micro (AMCC)

Comment Type T Comment Status D

Similar requirements exist for fast retrain.

*SuggestedRemedy*

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

Proposed Response Response Status W

PROPOSED REJECT.

The requirements for fast retrain do not affect normal training.

CI 55 SC 55.4.2.5.14 P216 L44 # 71  
Brown, Matthew Applied Micro (AMCC)

Comment Type T Comment Status D

Can also go to the LPI transmit mode.

*SuggestedRemedy*

Add the following "... and to the LPI transmit mode under control of the local LPI client."

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 55 SC 55.4.2.5.15 P216 L53 # 72  
 Brown, Matthew Applied Micro (AMCC)  
 Comment Type E Comment Status D  
 Grammar.  
 SuggestedRemedy  
 Change "THP turn" to "THP turns".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 55 SC 55.4.2.5.15 P217 L6 # 73  
 Brown, Matthew Applied Micro (AMCC)  
 Comment Type ER Comment Status D  
 Reference to incorrect figure.  
 SuggestedRemedy  
 Change 55-13a to 55-13.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 55 SC 55.4.2.5.15 P217 L7 # 74  
 Brown, Matthew Applied Micro (AMCC)  
 Comment Type TR Comment Status D  
 Relevant to initial or subsequent normal retrain.  
 SuggestedRemedy  
 Change "used for initial training" to "used for normal training". Alternately, "used for initial training or normal retraining".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 "used for normal training"

CI 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  
 SuggestedRemedy  
 Change "lower power receive mode" to "LPI receiver mode".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Change "lower power receive mode" to "LPI receive mode".  
 CI 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.  
 SuggestedRemedy  
 For 2<sup>9</sup> and 2<sup>4</sup>, use superscript for 9 and 4, respectively.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 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.  
 SuggestedRemedy  
 For 2<sup>6</sup> and 2<sup>4</sup>, use superscript for 6 and 4, respectively.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 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?

*SuggestedRemedy*

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

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 45 SC 45.2.1.76a.3 P120 L36 # 79  
Brown, Matthew Applied Micro (AMCC)

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

A RO status bit is not provided to indicate whether fast retrain was negotiated or not. 1.147.0 does not suffice, since it may be overwritten by the station manager.

*SuggestedRemedy*

Provide a RO status bit to indicate whether fast retraining was successfully negotiated or not. 1.147.1 is suggested. Name "Fast Retrain Negotiated". Description: "1 = Fast retrain was negotiated; 0 Fast retrain was not negotiated." R/W: "RO".

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Define a new register bit:

1.147.2 : Fast retrain negotiated : 1 = PHY has negotiated fast retrain, 0 = PHY has not negotiated fast retrain : read only

Insert 45.2.1.76a.4 Fast retrain ability (1.147.2)

This bit indicates that the PHY has negotiated fast retrain as defined in 55.4.5.1.

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

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

Common terminology.

*SuggestedRemedy*

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

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 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

*SuggestedRemedy*

Define fr\_max\_wait\_timer in 55.4.5.2

Proposed Response Response Status **W**

PROPOSED REJECT.

Fr\_maxwait\_timer is defined in 55.4.5.2 already.

CI 55 SC 55.4.6.1 P220 L33 # 82  
Brown, Matthew Applied Micro (AMCC)

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

Figure 55-27b. link\_fail\_sig\_timer\_done not defined

*SuggestedRemedy*

Define fr\_max\_wait\_timer in 55.4.5.2

Proposed Response Response Status **W**

PROPOSED REJECT.

The comment, response and the reference do not match.

Link\_fail\_sig\_timer is defined on page 219

Cl 55 SC 55.4.2.5.14 P216 L49 # 83  
Brown, Matthew Applied Micro (AMCC)

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 reponse did not address loss of data during a fast retrain. To prevent loss of data, a mechansm is required which informs the MAC to defer transmission; while not indicating a link failure, avoiding adverse effects on MAC clients.

*SuggestedRemedy*

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 W

PROPOSED REJECT.

For discussion by the task force.

See also #100.

This is out of scope for clause 55.

Cl 46 SC 46.1.7.3 P140 L42 # 84  
Brown, Matthew Applied Micro (AMCC)

Comment Type T Comment Status D

CARRIER status has values CARRIER\_ON and CARRIER\_OFF.

*SuggestedRemedy*

Change "CARRIER\_STATUS is set to false" to "CARRIER\_STATUS is set to CARRIER\_OFF".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 46 SC 46.3a.2.2 P145 L28 # 85  
Brown, Matthew Applied Micro (AMCC)

Comment Type T Comment Status D

CARRIER status has values CARRIER\_ON and CARRIER\_OFF.

*SuggestedRemedy*

Change "CARRIER\_STATUS = OFF" to "CARRIER\_STATUS= CARRIER\_OFF".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 46 SC 46.3a.2.2 P145 L36 # 86  
Brown, Matthew Applied Micro (AMCC)

Comment Type T Comment Status D

CARRIER status has values CARRIER\_ON and CARRIER\_OFF.

*SuggestedRemedy*

Change "CARRIER\_STATUS = ON" to "CARRIER\_STATUS= CARRIER\_ON".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 49 SC 49 P174 L1 # 87  
Horner, Rita Avago Technologies

Comment Type T Comment Status D

TX\_REFRESH state no longer exists

*SuggestedRemedy*

remove the tx\_tr\_timer

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 49 SC 49 P178 L # 88  
Horner, Rita Avago Technologies

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

*SuggestedRemedy*

Remove the !tx\_ts\_timer\_done from the state transition TX\_SLEEP to TX\_ACTIVE

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 49 SC 49 P178 L # 89  
 Horner, Rita Avago Technologies

Comment Type T Comment Status D

The exit from TX\_QUIET should be tx\_timer\_done or tx\_raw !=LI

*SuggestedRemedy*

Remove the requirement of !tq\_timer\_done on the exit from TX\_QUIET

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

As per the comment, change the transition to:

tx\_tq\_timer\_done + T\_TYPE(tx\_raw) !=LI

Cl 49 SC 49 P180 L34 # 90  
 Horner, Rita Avago Technologies

Comment Type T Comment Status D

Correct the defination for rx\_fault

*SuggestedRemedy*

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

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 46 SC 46.3a P144 L5 # 91  
 Brown, Matthew Applied Micro (AMCC)

Comment Type E Comment Status D

label "PLS\_Service Primitives" only applies to primitives starting with PLS.

*SuggestedRemedy*

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.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 46 SC 46.3a.1 P144 L37 # 92  
 Brown, Matthew Applied Micro (AMCC)

Comment Type T Comment Status D

Until 1 second after link\_status is OK, effect of primitive is undefined regardless of its value.

*SuggestedRemedy*

Delete "or if LPI\_REQUEST=ASSERT".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 46 SC 46.3a.1 P144 L30 # 93  
 Brown, Matthew Applied Micro (AMCC)

Comment Type T Comment Status D

While LPI\_INDICATION is DEASSERT, all behavior is normal.

*SuggestedRemedy*

Delete "inter-frame".

Proposed Response Response Status W

PROPOSED REJECT.

"normal inter-frame behavior" implies that idles are sent between packets (instead of LPI).

Cl 36 SC 36.2.5.2.2 P87 L 22 # 94  
Healey, Adam LSI Corporation

Comment Type T Comment Status D

The transition from LPI\_K back to LP\_IDLE\_D is inconsistent with the equivalent legacy transition (RX\_K to IDLE\_D) when xmit != DATA. If xmit != DATA and SUDI(/KD5.6/+/D16.2/), 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.

*SuggestedRemedy*

For the transition from LPI\_K to LPI\_IDLE\_D, change the term xmit != DATA &#8727; SUDI( "member of set of" [/D/ &#8727; !/[D21.5/ &#8727; !/[D2.2/])) to xmit != DATA &#8727; SUDI( "member of set of" [/D/ &#8727; !/[D21.5/ &#8727; !/[D2.2/]\*![D5.6]\*![D16.2])). Also remove the term xmit = DATA from the transition from LPI\_K to IDLE\_D (via "C").

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Rewriting to clarify the problems in the comment tool:

For the transition from LPI\_K to LPI\_IDLE\_D, change the term

xmit != DATA \* SUDI( "member of set of" [/D/ \* !/[D21.5/ \* !/[D2.2/]))

to

xmit != DATA \* SUDI( "member of set of" [/D/ \* !/[D21.5/ \* !/[D2.2/ \* !/[D5.6] \* !/[D16.2])).

(i.e. 2 elements added to the set of terms)

Also remove the term xmit = DATA from the transition from LPI\_K to IDLE\_D (via "C").

Cl 45 SC 45.2.1.76a P120 L 19 # 95  
Ganga, Ilango Intel Corporation

Comment Type TR Comment Status D

In order to advertise the fast retrain ability (45.7.10), the management needs to know if the PHY 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.

*SuggestedRemedy*

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

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Define a new register bit:

1.147.3 : Fast retrain ability : 1 = PHY supports fast retrain, 0 = PHY does not support fast retrain : read only

Insert 45.2.1.76a.3 Fast retrain ability (1.147.3)

This bit indicates that the PHY supports fast retrain as defined in 55.4.5.1.

CI 46 SC 46.1.7.3 P140 L37 # 96  
Ganga, Ilango Intel Corporation

Comment Type TR Comment Status D

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.

*SuggestedRemedy*

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 W

PROPOSED REJECT.

The subject of deferral was discussed during the resolution of comment #164 and #361 on draft 3.0. The decision was taken to use Local Fault as the sole means to signal from the PHY to the RS that fast retrain is in progress. The proposed remedy of this comment would add an additional signal to the XGMII to convey the state of the proposed new primitive.

See also comment #100, #97, #83

CI 55 SC 55.3.2.2.9 P195 L10 # 97  
Ganga, Ilango Intel Corporation

Comment Type TR Comment Status D

As per D3.1, either IDLE or Local Fault is generated during fast retrain. Currently local fault may be used to trigger link failure condition to the higher layers. At a system level such link failure conditions may be used to initiate link failover mechanisms for high availability. Asserting local fault does not unambiguously indicate if the local fault is due to link failure or fast retrain. Any timeout mechanisms to delay signaling link failure to higher layers may delay the highavailability/failover features to take effect. So it is best to define a separate control code to indicate fr\_active (PMA\_FR\_ACTIVE.indication) to the RS sublayer. This could be used to signal a fast retrain condition.

*SuggestedRemedy*

1. Define a separate control code to indicate fast retrain condition to the higher layers (RS sublayer). Providing fr\_active signal allows systems flexibility to implement failover/lossless characteristics. 2. For the PHYs that support fast retrain, specify an option to assert PLS\_CARRIER.indication during fast retrain active that allows tx deferral.

Proposed Response Response Status W

PROPOSED REJECT.

This was discussed at the previous meeting and the taskforce could not reach agreement on making this change.

For further discussion by the taskforce.

CI 46 SC 46.1.7.3 P140 L41 # 98  
Ganga, Ilango Intel Corporation

Comment Type TR Comment Status D

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.

*SuggestedRemedy*

Change LPI\_INDICATION to LPI\_REQUEST

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.76a P120 L 20 # 99  
Ganga, Ilango Intel Corporation

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

*SuggestedRemedy*

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\_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.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accept the proposed response except that the subclause number will be 45.2.1.76a.5 (if comments #95 and #79 are accepted).

CI 55 SC 55 P187 L # 100  
Ganga, Ilango Intel Corporation

Comment Type **TR** 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 behaviour at the link/system level.

*SuggestedRemedy*

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 **W**

PROPOSED REJECT.

The host system decides whether it wishes to receive local fault or idles during a fast retrain. It is not clear why the system behaviour needs to be symmetric.

There are several other comments addressing XGMII signaling during fast retrain and this response may be changed by those responses.

(see . . . . .)

CI 78 SC 78.1.3.2 P256 L 8 # 101  
Brown, Matthew Applied Micro (AMCC)

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

Use primitive/parameter name.

*SuggestedRemedy*

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 **W**

PROPOSED ACCEPT.

CI 78 SC 78.1.3.2 P256 L 12 # 102  
Brown, Matthew Applied Micro (AMCC)

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

Use primitive/parameter name.

*SuggestedRemedy*

Change "the LPI\_INDICATION parameter is set to DE-ASSERT in the LP\_IDLE indication primitive of the LPI Clinet service interface" to "LP\_IDLE.indication(LPI\_INDICATION) is set to DE-ASSERT"

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 78 SC 78.1.4 P257 L 26 # 103  
Brown, Matthew Applied Micro (AMCC)

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

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

*SuggestedRemedy*

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.

Proposed Response Response Status **W**

PROPOSED ACCEPT.