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

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

In many of the state machine figures, new transition criteria include comparison of boolean variable with boolean value (e.g., energy_detect = FALSE). This comparison is redundant and is inconsistent in style.

SuggestedRemedy

Replace all instances in draft as follows:
"<boolean_variable> = TRUE" with "<boolean_variable>"
"<boolean_variable> = FALSE" with "!<boolean_variable>"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Recommended change will be made where it does not, by itself, cause a change in the base text of the draft.

In places where this would create a change in the base text that is not required by the objectives of this task force, i.e., it is a service to humanity, the editors will use their discretion.

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

Traeber, Mario Infineon Technologies

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

Execpt for Clause 40 it is nowhere explicitly written how the sequencing of the Next-Pages required to advertize the EEE capability is ordered. For instance the Clause 24/25 mode naturally does not require any Next-Page for Capability exchange but for EEE it does. So it is expected that the EEE pages are the first Next-Pages to be sent before any Software-Next-Page is about to be sent - similar and conistently to how it is defined in Annex 40C for the Gigabit Ethernet or Clause 55.6.1.2 Capability Next-Pages.

SuggestedRemedy

At least do the following:
- Add a paragraph for clause 24/25 which defines the EEE pages to be the first
- Add information to 55.6.1 which defines the NP-sequence

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Clarification of the ordering of next pages is a general issue that should be addressed globally in working group ballot.

Cl **14** *SC* *P* **16** *L* # 120

Thompson, Geoff Nortel

Comment Type **ER** *Comment Status* **A**

I find no text added anywhere to clause 14 that states or even gives a hint of the compatibility between 10BASE-T and 10BASE-Te. How is a customer to know how to mix the two on a network?

SuggestedRemedy

Add a new subclause to clause 14 to address the topic of cross compatibility between 10BASE-T and 10BASE-Te, i. e. the two MDI can be freely mixed as long as the cabling meets the requirements for 10BASE-Te.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change 14.1.1.1 (i) from:

Provides for operation with reduced transmit amplitude for type 10BASE-Te (optional)

to:

Provides for operation with reduced transmit amplitude for type 10BASE-Te (optional). A 10BASE-Te PHY interoperates with a 10BASE-T PHY if the minimum cabling requirements of a 10BASE-Te PHY are met.

Cl **22** *SC* **22.2.2.6a** *P* **28** *L* **21** # 123

Traeber, Mario Infineon Technologies

Comment Type **ER** *Comment Status* **A**

Replace "MAC client" by "LPI agent" to be consistent with 35.2.2.6a

SuggestedRemedy

simply replace the text as suggested.

Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **22.2.2.9a** *P* **28** *L* **52** # 124

Traeber, Mario Infineon Technologies

Comment Type **ER** *Comment Status* **A**

Replace "MAC client" by "LPI agent" to be consistent with 35.2.2.9a

SuggestedRemedy

simply replace the text as suggested.

Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **22.7a.1** *P* **31** *L* **34** # 107

Grimwood, Michael Broadcom

Comment Type **T** *Comment Status* **A**

To achieve consistency with related comments submitted against Clauses 35 and 46, change link_status from READY to OK. Clauses 40 and 55 and the associated link monitors do not have a "READY" state in their link monitor functions nor do they specify READY as an allowable value for link_status.

SuggestedRemedy

Change:

LPI_IDLE.request shall not be set to ASSERT unless the attached link is operational (i.e. link_status = READY, see 28.2.6.1.1). LP_IDLE.request shall remain to be set to DEASSERT for 1 second following link_status changing state to READY.

To:

LPI_IDLE.request shall not be set to ASSERT unless the attached link is operational (i.e. link_status = OK, see 24.3.3.2). LP_IDLE.request shall remain to be set to DEASSERT for 1 second following link_status changing state to OK.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The commenter is correct that "link_status = OK" indicates that the link is operational not "link_status = READY" (which indicates that the autoneg has resolved and the link may be enabled). However, the definition of link_status from 28.2.6.1.1 must be used because it comes from the autonegotiation function and this clause is defining the RS behavior (not the PCS/PMA).

Therefore change "link_status = READY" to "link_status = OK" - 2 instances.

Cl **24** *SC* **24.1.1** *P* **34** *L* **10** # 121

Thompson, Geoff Nortel

Comment Type **ER** *Comment Status* **A**

The text: "the PHY enters the low power idle mode during periods of low link utilization." is, shall we say, mysterious. There is no "low link utilization" signal available within the PCS/PMA.

SuggestedRemedy

It would be more appropriate to say something like that the transmitter, and in turn the linked receiver transition into low power mode in response to a command sent across the MII that is expected when the transmitting station is expecting low link utilization.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the second sentence of the paragraph starting on line 8 to read:

When a transmitting station does not need the full bandwidth of a link with this capability, the LPI agent can put the local PHY transmitter and the link partner's receiver into low power idle mode to conserve energy.

Cl **25** *SC* **25.4.5** *P* **53** *L* **28** # 108

Grimwood, Michael Broadcom

Comment Type **TR** *Comment Status* **A**

For 100BASE-TX EEE, require that jitter specifications be met during low-power operation.

SuggestedRemedy

In subclause 25.4.5, after the sentence, "The jitter measurement specified in 9.1.9 of TP-PMD may be performed using scrambled IDLEs.", add the following:

During Low Power operation, jitter shall be measured using scrambled SLEEP code groups transmitted during the TX_SLEEP state. Total transmit jitter with respect to a continuous unjittered reference shall not exceed 1.4 ns peak-to-peak with the exception that the jitter contributions from the clock transitions occurring during TX_QUIET and the first 5 usec of TX_SLEEP are ignored. The jitter measurement time period shall be not less than 100 msec and not greater than 1 second.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.21** *P* *L* **48** # 122

Thompson, Geoff Nortel

Comment Type **TR** *Comment Status* **A**

I don't understand what this attribute indicates. Is it the state of the standard at time of implementation? Or is it the PHYs for which the PCS and higher can support EEE operation?

SuggestedRemedy

Add text to clarify.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the "BEHAVIOUR" definition to:

A read-only list of the possible PHY types for which the underlying system could support Energy Efficient Ethernet as defined in Clause 78. If Clause 28 or Clause 73 Auto-Negotiation is present, then this attribute will map to the local technology ability or advertised ability of the local device.;

Cl **35** *SC* **35.2.2.4** *P* **66** *L* **6** # 4

Dietz, Bryan Alcatel-Lucent

Comment Type **E** *Comment Status* **A**

Minor editorial change: replace semicolon with comma in list of "during the assersion of low power idle; carrier extend or carrier extend error code-groups." Semicolon is not appropriate in this context.

SuggestedRemedy

Replace semicolon with comma. It should read "during the assersion of low power idle, Carrier Extend or Carrier Extend Error code-groups."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Also change spelling to "assertion"

Cl **35** *SC* **35.5a** *P* **69** *L* **54** # 109

Grimwood, Michael Broadcom

Comment Type **T** *Comment Status* **A**

A one second timer for LP_IDLE.request assertion was applied to Clause 22 but not globally to all PHYs since only Clause 22 defines LP_IDLE.request.

SuggestedRemedy

As has been done in 22.7a, add a section 35.5a entitled "LPI messages". Modify that section for GMII compatibility.

In this new section, add the following requirement to the definition of LP_IDLE.request:

LPI_IDLE.request shall not be set to ASSERT unless the attached link is operational (i.e. link_status = OK, see 40.3.3.1). LP_IDLE.request shall remain to be set to DEASSERT for 1 second following link_status changing state to OK.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This should be added in 35.2.1 (where the rest of the mapping changes are described).

Add after "This behavior and restrictions are the same as described in 22.7a, with the details of the signaling described in 35.2.2."

"LPI_IDLE.request shall not be set to ASSERT unless the attached link is operational (i.e. link_status = OK, according to the underlying PCS/PMA). LP_IDLE.request shall remain to be set to DEASSERT for 1 second following link_status changing state to OK."

Cl **36** *SC* **36.2.5.1.3** *P* **72** *L* **32** # 47

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

What is an "enumerated variable"?

SuggestedRemedy

Change "enumerated" to "boolean".

Response *Response Status* **C**

ACCEPT.

Cl **36** *SC* **36.2.5.1.5** *P* **73** *L* # 13

Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

During the adhoc/meetings, the decision was to have the wake timer to be for 1ms. But in the draft is point to TWR , which is only 10-11uSec. The purpose of this timer is to give the receiver a chance to gracefully recover from a wake time fault.

SuggestedRemedy

Add a row to Table 36-3b for Twtf and assign 1ms. In fact replace the TDA row for this.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change definition of rx_wf_timer:

"The timer terminal count is set to Twr" to "The timer terminal count is set to Twtf"

Replace last row of Table 36-3b with:

Twtf Wake time fault recovery time 1mS

Cl **36** *SC* **36.2.5.1.5** *P* **73** *L* **27** # 14

Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

Wake_error_counter needs to be added to the counter section

SuggestedRemedy

Add the description and link to the Register

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add wake error counter (identical to 49.2.13.2.2).

Cl **36** *SC* **36.2.5.2.1** *P* **73** *L* **44** # 41

Barrass, Hugh Cisco

Comment Type **E** *Comment Status* **A**

Figure references wrong

SuggestedRemedy

Change "Figures 36-1 and 36-2" to "figures 36-5 and 36-6" (with active links).

Also, P.74, change figure title to "Figure 36-5"

Response *Response Status* **C**

ACCEPT.

Cl **36** *SC* **36.2.5.2.1** *P* **75** *L* **11** # 40

Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **A**

There needs to be a transition for tx_o_set = /LI/

SuggestedRemedy

Change "tx_o_set = /I/" to "tx_o_set = /I/ + /LI/"

Change state IDLE_I1B: "tx_code-group <= /D5.6/" to "if tx_o_set = /I/ then tx_code-group <= /D5.6/ else tx_code-group <= /D6.5/"

Change state IDLE_I2B: "tx_code-group <= /D16.2/" to "if tx_o_set = /I/ then tx_code-group <= /D16.2/ else tx_code-group <= /D26.4/"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Modify the suggested remedy by reversing the sense of "If" and "else"

Cl **36** *SC* **36.2.5.2.1** *P* **75** *L* **5** # 38

Barnette, James Vitesse Semiconducto

Comment Type **TR** *Comment Status* **A**

In Figure 36-6 PCS transmit code-group state diagram, there is no implementation of code-group generation for ordered-set tx_o_set=/LI/.

SuggestedRemedy

- Add 5 new states, LPI_DISPARITY_TEST, LPI_DISPARITY_WRONG, LPI_I1B, LPI_DISPARITY_OK, and LPI_I2B that have a similar flow as the 5 existing states, IDLE_DISPARITY_TEST, IDLE_DISPARITY_WRONG, IDLE_I1B, IDLE_DISPARITY_OK, and IDLE_I2B.
- Add a new arc from GENERATE_CODE_GROUPS to LPI_DISPARITY_TEST when tx_o_set=/LI/.
- Replicate the existing arcs that are in the IDLE_* states into the new LPI_* states includeing the exit to the common GENERATE_CODE_GROUPS state.
- Change the tx_code-group output in the new LPI_I1B and LPI_I2B states from /D5.6/ and /D16.2/ to /D6.5/ and /D26.4/, respectively

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #40

Cl **36** *SC* **36.2.5.2.8** *P* **80** *L* **23** # 42

Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **A**

The "loop" transitions for states TX_SLEEP, TX_QUIET and TX_REFRESH are all invalid because they would cause the timers to keep restarting (even if they didn't, they would be redundant since the state machine remains in the state unless an exit is valid.

SuggestedRemedy

Delete the "loop" transitions for states TX_SLEEP, TX_QUIET and TX_REFRESH.

Response *Response Status* **C**

ACCEPT.

Cl **36** *SC* **36.2.5.2.8** *P* **81** *L* **10** # 39

Barnette, James Vitesse Semiconducto

Comment Type **TR** *Comment Status* **A**

When detect_lpidle is asserted and the state transitions from RX_ACTIVE to RX_SLEEP, the next ordered set to be received is an LPI, which is /K28.5/D6.5/ or /K28.5/D26.4/. Then after /K28.5/ is received, detect_idle would be asserted using the definition from section 36.2.5.1.3 and the state would transition to RX_ACTIVE. When /D6.5/ or /D26.4/ is received then detect_lpidle is asserted, thus transitioning back to RX_SLEEP from RX_ACTIVE. This means, as long as the LPI ordered set is received then the state transitions back and forth between RX_ACTIVE and RX_SLEEP and that is clearly not the intended behavior.

SuggestedRemedy

To avoid toggling back and forth, while in RX_SLEEP active, detect_idle should be sampled only for every other code word. This way when an ordered set /K28.5//<some_code_word>/ is received, then detect_idle or detect_lpidle will go high appropriately after decoding <some_code_word>. One possible way to do this is to split RX_SLEEP into two states RX_SLEEP_1 and RX_SLEEP_2, both having the same functionality of the existing RX_SLEEP state.

When detect_lpidle is asserted, RX_ACTIVE/RX_WAKE/RX_WTF would transition into RX_SLEEP_1 state and as long as detect_lpidle is asserted state would always be RX_SLEEP_1. While in RX_SLEEP_1, detect_idle would transition to RX_SLEEP_2 state. If current state is RX_SLEEP_2 and detect_idle is asserted, then state transitions to RX_ACTIVE else if detect_lpidle is asserted then state transitions to RX_SLEEP_1. If signal_detect fails while either in state RX_SLEEP_1 or RX_SLEEP_2 then state transitions to RX_QUIET.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The commenter has correctly identified the behavior problem.

The same can be achieved by including the term "* ODD" (qualifying detect_idle) in the exit conditions for RX_SLEEP; RX_WAKE and RX_WTF.

Cl **36** *SC* **Fig 36-7a** *P* **76** *L* **3** # 9
Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

The variable rx_lpi_fail is not used any more.

SuggestedRemedy

Hence remove rx_lpi_fail = TRUE condition to enter LINK_FAILED

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement the suggested remedy and also delete definition for rx_lpi_fail and assignment in state RX_ACTIVE (fig 36-9b)

Cl **36** *SC* **Fig36-7a** *P* **76** *L* # 11
Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

Transition from LPI_K to IDLE_D is not checking EVEN boundary

SuggestedRemedy

Change the transition condition to detect_idle * rx_lpi_active =FALSE * !EVEN

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use "ODD" instead of "!EVEN" in the suggested remedy

Cl **36** *SC* **Fig36-9b** *P* **81** *L* # 6
Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

Arc from RX_WTF to RX_SLEEP has !rx_tw_timer_done it should be rx_wf_timer_done

SuggestedRemedy

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Both this arc and the arc from RX_WTF to RX_ACTIVE need to be changed.

Cl **36** *SC* **Fig36-9b** *P* **81** *L* # 8
Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

Arc from RX_WTF to RX_ACTIVE should be !detect_lpidle instead of detect_idle. Any recovery from RX_WTF is not guaranteed to be receiving idle codewords.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **36** *SC* **Fig36-9b** *P* **81** *L* # 7
Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

Arc from RX_QUITE to RX_WTF needs to be moved to RX_QUIET to RX_LINK_FAIL. Presently signal_detect=FAIL make it loop around from RX_WTF back to RX_QUIET. Once the rx_tq_timer_done is a link fail.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **36** *SC* **Fig36-9b** *P* **81** *L* **10** # 10
Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **R**

Transition out of RX_ACTIVE back to itself has a condition sync_status!= code_sync_status. But sync_status latches code_sync_status inside RX_ACTIVE. Hence this transition condition is meaning less.

SuggestedRemedy

Instead of the above, please use code_sync_status = FAIL

Response *Response Status* **C**

REJECT.

Suggested remedy does not work.
This topic will be added to the agenda for the July meeting.

Comments 10, 25 & 36 bring up the same issue in clauses 36, 48 and 49 respectively

Cl **36** *SC* **Table36-3b** *P* **82** *L* # 12

Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

There is a row for Tda. But there is no debounce state, hence no need for this timer value

SuggestedRemedy

Remove the entire row

Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.1.3.4** *P* **94** *L* **8** # 113

McIntosh, James Vitesse

Comment Type **E** *Comment Status* **A**

In the main 802.3 document, the cext_errn definition is before the Sdn[1] definition. When the cext_errn definition change was added back to this document in D1.3, it was inadvertantly placed after the Sdn[1] definition.

SuggestedRemedy

Swap cext_errn and Sdn[1] definition changes.

Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.6.1.2.5** *P* **106** *L* **42** # 114

McIntosh, James Vitesse

Comment Type **TR** *Comment Status* **A**

The states "WAIT_SILENT, QUIET, WAKE, and WAKE_SILENT" are listed with "WAIT_SILENT" in the list twice. I believe the first instance was intended to be "WAIT_QUIET".

SuggestedRemedy

Change list to "WAIT_QUIET, QUIET, WAKE, and WAKE_SILENT".

Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.6.1.2.5** *P* **106** *L* **44** # 110

Grimwood, Michael Broadcom

Comment Type **T** *Comment Status* **A**

For consistency with the text earlier in the subsection, eliminate the word “clock” from “unjittered reference clock”.

SuggestedRemedy

As outlined in comment above.

Response *Response Status* **C**

ACCEPT.

Cl **46** *SC* **46.3.1.2** *P* **121** *L* **10** # 48

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

The 06 character is often referred to in subsequent sections as the LP_IDLE character so should have this label here.

SuggestedRemedy

Add "LP_IDLE" (all capitals) label under description in row with TXD = 06.

Response *Response Status* **C**

ACCEPT.

Cl **46** *SC* **46.5a** *P* **124** *L* **34** # 111

Grimwood, Michael Broadcom

Comment Type **T** *Comment Status* **A**

A one second timer for LP_IDLE.request assertion was applied to Clause 22 but not globally to all PHYs since only Clause 22 defines LP_IDLE.request.

SuggestedRemedy

As has been done in 22.7a, add a section 46.5a entitled "LPI messages". Modify that section for XGMII compatibility.
In this new section, add the following requirement to the definition of LP_IDLE.request:

LPI_IDLE.request shall not be set to ASSERT unless the attached link is operational (i.e. link_status = OK, see 55.4.5.1). LP_IDLE.request shall remain to be set to DEASSERT for 1 second following link_status changing state to OK.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This should be added in 46.1.7 (where the rest of the mapping changes are described).

Add after "This behavior and restrictions are the same as described in 22.7a, with the details of the signaling described in 46.3."

"LPI_IDLE.request shall not be set to ASSERT unless the attached link is operational (i.e. link_status = OK, according to the underlying PCS/PMA). LP_IDLE.request shall remain to be set to DEASSERT for 1 second following link_status changing state to OK."

Cl **48** *SC* **48.2.3** *P* **126** *L* **30** # 49

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

The diagram shows XGMII and PCS encoding spanning all LPI states but labels only the WAKE cycle.

SuggestedRemedy

Label columns 1-2 and 16-18 as active time.
Label columns 3 to 15 as LPI time.
Label columns 3 to 9 and LPI sleep/quiet/refresh time.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.4** *P* **127** *L* **29** # 50

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

Table 48-2 footnote (a) refers to "rules described below". Not clear to what it is referring.

SuggestedRemedy

Change "below" to "in 48.2.4.2".

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.4** *P* **127** *L* **53** # 51

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

Table 48-3 footnote (a) refers to "rules described below". Not clear to what it is referring.

SuggestedRemedy

Change "below" to "in 48.2.4.2".

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.4.2** *P* *L* # 2

McCulloch, Ewan Cadence Design Syste

Comment Type **T** *Comment Status* **A**

The spec mentions that on receive, all ||I|| received during idle are translated to XGMII Idle control characters for transmission over the XGMII. All other !||I|| received during idle are mapped directly to XGMII data or control characters on a lane by lane basis, with the exception of /D20.5/ (Low Power Idle) being detected in any row and the rest of the rows in the same column being detected /K/ only or /R/ only, which will result in reporting LP_IDLE in all lanes.

This implies that ||A|| is always translated to normal XGMII Idle characters, even if the previous column was a low power idle stripe (/D20.5/ in one row and /K/ or /R/ in all other rows). Is this the intention ? This would make the received XGMII sequence quite different from the link partners transmitted XGMII, and complicate the detection of LPI in the MAC. I think the received ||A|| that is part of a stream of low power stripes of idles should be translated to LPI as well.

SuggestedRemedy

Change the spec to

Whenever sync_status=OK, all ||I|| received during idle are translated to XGMII Idle control characters for transmission over the XGMII. All other !||I|| received during idle are mapped directly to XGMII data or control characters on a lane by lane basis, with the following exceptions :
1. /D20.5/ (Low Power Idle) being detected in any row and the rest of the rows in the same column being detected /K/ only or /R/ only, which will result in reporting LP_IDLE in all lanes.
2. ||A|| being detected AND /D20.5/ (Low Power Idle) being detected in any row of the previous column and the rest of the rows in the previous column being detected /K/ only or /R/ only, which will result in reporting LP_IDLE in all lanes.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.4.2** *P* **128** *L* **26** # 52

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

Clarify that this means LP_IDLE characters.

SuggestedRemedy

Change LP_IDLE to LP_IDLE characters.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.4.2** *P* **128** *L* **4** # 54

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

Define low power idle ordered sets here rather than as alias in comment section.

SuggestedRemedy

Change title to "48.2.4.2 Idle (||I||) and Low Power Idle (||LPIDLE||)
Add the following the paragraph on line 38 of page 128 as follows:
"The low power idle ordered set ||LPIDLE|| is a special of ||I|| where low power idle is ..."
Also, deleted the defintion of ||LPIDLE|| in section 48.2.6.1.2 on page 128 line 47.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.4.2.3** *P* *L* # 3

McCulloch, Ewan Cadence Design Syste

Comment Type **T** *Comment Status* **A**

Should idle insertion or deletion via clock tolerance compensation be allowed to proceed during LPI, if we choose not to implement the low power state machines (i.e. if the PCS is simply transporting LPI for compatibility, but not entering a low power state itself).
48.2.4.2.3 states that Idle insertion or deletion may be performed on ||R|| in the encoded data stream, which will never be the case when transporting LPI (one of the characters in the stripe of /R/'s will be /D20.5/)

Our assumption is that clock rate compensation should be allowed to continue during LPI, as this is consistent with allowing the deskew and comma sync processes within the PCS RX to continue (using ||A|| and individual /K/ symbols respectively).

SuggestedRemedy

modify the spec to allow for clock rate compensation on a strpe that contained three /R/'s and one /D20.5/ in the encoded data stream

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Because Low Power Idle is defined as a case of IDLE, the same rules described in 48.2.4.2.3 still apply. This can be made clearer to the reader.

Add the following sentence at the end of the paragraph on line 38 of page 128:

Clock compensation may be performed during Low Power Idle according to the rules described in 48.2.4.2.3.

Cl **48** *SC* **48.2.6.1.2** *P* **128** *L* **47** # 53

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

This is not an "alias". ||LPIDLE|| is not the same as ||I||.

SuggestedRemedy

Change definition of ||LPIDLE|| to ...
"Low power idle ordered sets are a special case of Idle ordered sets (||I||) transmitted during low power idle mode as described in 48.2.4.2."

Alternately, make changes suggested for 48.2.4.2 and delete this defition altogether.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.1.3** *P* **129** *L* **10** # 56

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

What is an "enumerated variable"?

SuggestedRemedy

Change "enumerated" to "boolean".

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.1.3** *P* **129** *L* **10** # 57

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

When rx_lpi_active is FALSE it may not be "capable of receiver data" as there may be an input fault.

SuggestedRemedy

Change "capable of receiving data" to "is not in the LPI mode".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "when it is in an active state and capable of receiving data"

to "when it is in an active state and is not restricted by the LPI receive state machine"

Cl **48** *SC* **48.2.6.1.3** *P* **129** *L* **14** # 58

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

rx_lpi_fail also indicates that the link has failed during LPI.

SuggestedRemedy

Append the sentence with "or if the link has otherwise failed".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Append the sentence with "or if the link has otherwise failed during LPI".

Cl **48** *SC* **48.2.6.1.3** *P* **129** *L* **17** # 59

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

Need text to indicate the significance of rx_quiet.

SuggestedRemedy

Add the following sentence...
When this variable is TRUE it indicates that receive PCS and PMD may power-down non-essential functions.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.1.3** *P* **129** *L* **20** # 60

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

Need text to indicate the significance of tx_quiet.

SuggestedRemedy

Add the following sentence...
When this variable is TRUE it indicates that transmit PCS and PMD may power-down non-essential functions.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.1.3** *P* **129** *L* **6** # 55

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

deskew_align_status is the same as align_status used to be not as it is. Need to adopt old align_status definition for deskew_align_status and re-define align_status.

SuggestedRemedy

Delete current defintion of deskew_align_status.

Pull in definition from 802.3-2008 for align status and rename from "align_status" to "deskew_align_status":

deskew_align_status
A parameter set by the PCS Deskew process to reflect the status of the ane-to-lane code-group alignment.
Values:
FAIL; The deskew process is not complete.
OK; All lanes are synchronized and aligned.

Re-define align status as follows ...
align_status
Variable equivalent to deskew_align_status when not in LPI mode. During LPI mode align_status is overridden by the LPI receive state machine as specified in Table 48-9.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add a note as shown below to the definition of align_status:

NOTE: If the optional low power idle function is implemented, then this variable is affected by the LPI receive state machine

Delete the second and third sentence of the paragraph starting on page 129, line 5 and the copy the values definition from align_status.

Make a similar change to clause 36 and clause 49.

Cl **48** *SC* **48.2.6.1.5** *P* **129** *L* **25** # 21

Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

LPI_fail_timer is not needed anymore

SuggestedRemedy

Remove the timer.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.1.5** *P* **129** *L* **26** # 61

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

LPI_fail_timer is no longer used in this section.

SuggestedRemedy

Delete LPI_fail_timer and description.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.1.5** *P* **129** *L* **29** # 22

Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

Rx_deact_timer is no longer used

SuggestedRemedy

Remove the timer

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.1.5** *P* **129** *L* **31** # 62

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

rx_deact_time is no longer used in this section.

SuggestedRemedy

Delete rx_deact_timer and description.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.1.5** *P* **129** *L* **39** # 24

Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

During the adhoc/meetings, the decision was to have the wake timer to be for 1ms. But in the draft is point to TWR , which is only 8-9uSec. The purpose of this timer is to give the receiver a chance to gracefully recover from a wake time fault.

SuggestedRemedy

Add a row to Table 48-10 for Twtf and assign 1ms. In fact replace the TDA row for this.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change definition of rx_wf_timer:

"The timer terminal count is set to Twr" to "The timer terminal count is set to Twtf"

Replace last row of Table 48-10 with:

Twtf Wake time fault recovery time 1mS

Cl **48** *SC* **48.2.6.1.5** *P* **130** *L* **3** # 63

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

The tx_tq_timer is part of the PCS LPI transmit state machine not PMD receiver.

SuggestedRemedy

Change "PMD's receiver enters the TX_QUIET state" to "LPI transmit state machine enters the TX_QUIET state".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The same typo is in the definitions for tx_ts_timer, tx_tq_timer, and tx_tr_timer. Change the 3 instances of "receiver" to "transmitter."

Cl **48** *SC* **48.2.6.1.5** *P* **130** *L* **7** # 64

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

The tx_tr_timer is part of the PCS LPI transmit state machine not PMD receiver.

SuggestedRemedy

Change "PMD's receiver enters the TX_REFRESH state" to "LPI transmit state machine enters the TX_REFRESH state".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #63

Cl **48** *SC* **48.2.6.1.6** *P* **130** *L* **19** # 65

Brown, Matt AMCC

Comment Type **TR** *Comment Status* **A**

PMD_RXQUIET.request(rx_quiet) description not correct.

SuggestedRemedy

Delete current description and replace with the following:
"A boolean signal sent by the PCS to the PMD to indicate, when the value is TRUE, that the PMD may power down non-essential functions. The value of PMD_RXQUIET.request(rx_quiet) is equal to the rx_quiet variable as set in the LPI receive state machine.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The current definition is adequate and there was no consensus to change to the suggested remedy however it could potentially be improved and commentor is invited to suggest better alternatives.

Change "PCS/PMA" to "PCS" on lines 19 and 22 of page 130

Cl **48** *SC* **48.2.6.1.6** *P* **130** *L* **22** # 66

Brown, Matt AMCC

Comment Type **TR** *Comment Status* **A**

PMD_TXQUIET.request(tx_quiet) description not correct.

SuggestedRemedy

Delete current description and replace with the following:
"A boolean signal sent by the PCS to the PMD to indicate when the value is TRUE that the PMD must disable the driver output and may power down non-essential functions. The value of PMD_TXQUIET.request(tx_quiet) is equal to the rx_quiet variable as set in the LPI receive state machine."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 65

Cl **48** *SC* **48.2.6.2.1** *P* **131** *L* **52** # 67

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

In the notes at the bottom of Figure 48-6...
/D20.5/ is replaced in one row not column.

SuggestedRemedy

Replace "one column is replaced" with "one row is replaced".

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.2.5** *P* **134** *L* **11** # 68

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

Redundant and out of style to equate variable to Boolean value.

SuggestedRemedy

Change "reset=TRUE" to "reset"

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.2.5** *P* **134** *L* **21** # 43

Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **A**

The "loop" transitions for states TX_SLEEP, TX_QUIET and TX_REFRESH are all invalid because they would cause the timers to keep restarting (even if they didn't, they would be redundant since the state machine remains in the state unless an exit is valid.

SuggestedRemedy

Delete the "loop" transitions for states TX_SLEEP, TX_QUIET and TX_REFRESH.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.2.5** *P* **134** *L* **37** # 74

Brown, Matt AMCC

Comment Type **T** *Comment Status* **R**

In the LPI receiver state diagram in Figure 48-3, the exit criteria from RX_WTF and RX_WAKE required detection of either ||LPIDLE|| or ||IDLE||. For the latter, the length of the wake sequence is not enforced by the PCS but rather depends upon the layer above to give the correct value. This layer may be on another device so compliance may not be easy to guarantee.

SuggestedRemedy

Make the following changes to the LPI transmit state machine.
Create new timer "tx_wake_timer" with terminal count equal to required wake time TWR.
In TX_REFRESH state add the action "Start tx_wake_timer".
Change the criteria for transition from TX_REFRESH to TX_ACTIVE to "TX != LPIDLE * tx_wake_timer_done".

Response *Response Status* **C**

REJECT.

This change will require some discussion amongst interested parties and does not weigh on the "technical completeness" of the draft.

The commenter is urged to resubmit the comment during the Working Group ballot phase.

Cl **48** *SC* **48.2.6.2.5** *P* **135** *L* **10** # 70

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

In Figure 48-9b, in the transition from RX_ACTIVE state to itself the condition ||IDLE|| is unnecessary since the only purpose for this transition appears to be to keep align_status up to date.

SuggestedRemedy

Change "||IDLE|| + align_status != deskew_align_status" to "align_status != deskew_align_status".

Perhaps the intent was the following...
"!||LPIDLE|| * align_status != deskew_align_status"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "||IDLE|| + align_status != deskew_align_status" to "align_status != deskew_align_status".

Add the term "*align_status=deskew_align_status" to the transition from RX_ACTIVE to RX_SLEEP

Make the equivalent changes to clauses 36 and 49.

Cl **48** *SC* **48.2.6.2.5** *P* **135** *L* **13** # 73

Brown, Matt AMCC

Comment Type **TR** *Comment Status* **A**

In Figure 48-9b, it is possible to be stuck in RX_SLEEP state if the link partner driver continues to send anything other than ||IDLE|| and does not disable its output.

SuggestedRemedy

Create new timer rx_ts_timer with terminal time TSLRX slightly larger than TSL.
Define new timer in 48.2.6.1.5 as follows: "This timer is started when the LPI receive state machine enters the RX_SLEEP state. The timer terminal counter is set to TSLRX. When the timer reach the terminal count it will set rx_ts_timer_done = TRUE."
Add action to RX_SLEEP state "Start rx_ts_timer".
Add transition to RX_LINK_FAIL state with criteria "rx_ts_timer_done".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

A new timer is unnecessary.

In state RX_SLEEP, add action "start rx_tq_timer"

Add a transition from RX_SLEEP to RX_LINK_FAIL "rx_tq_timer_done"

Cl **48** *SC* **48.2.6.2.5** *P* **135** *L* **16** # 71

Brown, Matt AMCC

Comment Type **E** *Comment Status* **A**

In Figure 48-9b, there are two instances of ||IDLE|| where the right-hand bars appear to be "II" (two "I's") not "||" (two bars).

SuggestedRemedy

Replace IIIDLE|| with ||IDLE||.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.2.5** *P* **135** *L* **26** # 72

Brown, Matt AMCC

Comment Type **TR** *Comment Status* **R**

In Figure 48-9b, the transition from RX_WAKE to RX_QUIET when signal_detect=FAIL could be and endless loop in realitic failure conditions such as link partner driver soft failing where the signal level on the link is sporadic. The problem is caused by the timer being continually reset.

SuggestedRemedy

The suggested remedy is to create a new state that prevents the timer from being reset every time a false wake or refresh is detected.

Create a new state between RX_SLEEP and RX_QUIET.
Call the new state RX_QUIET_INIT (or other suitable name).
The transition criteria from RX_SLEEP to RX_QUIET_INIT will be "signal_detect=fail".
Within RX_QUIET_INIT state include the following action:
"Start rx_tw_timer"
The transition criteria from "RX_QUIET_INIT to "RX_QUIET" is UCT (unconditional transition).
In RX_QUIET state delete Start rx_tq_timer. (This is the key to letting the timer run.)

As a result, regardless of how many transitions occur between RX_QUIET and RX_WAKE or RX_WTF due to sporadic energy, the rx_tq_timer will time out and an fault will be detected.

Response *Response Status* **C**

REJECT.

The commentor has identified a problem with the state machine. This will be addressed in the July meeting.

Cl **48** *SC* **48.2.6.2.5** *P* **135** *L* **7** # 77
Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

rx_lpi_fail is not set to any value other than FALSE. Is this a necessary variable?

SuggestedRemedy

In RX_ACTIVE state delete "rx_lpi_fail".
Also, delete rx_lpi_fail definition on page 129.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.2.5** *P* **135** *L* **8** # 69
Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

In Figure 48-9b, need to initialize rx_quiet variable.

SuggestedRemedy

In RX_ACTIVE state add line...
"rx_quiet <= FALSE"

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.2.5** *P* **136** *L* **18** # 76
Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

TDA defined in Table 48-10 is no longer used.

SuggestedRemedy

Delete row defining TDA.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48.2.6.2.5** *P* **136** *L* **8** # 75
Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

TUL definition in Table 48-9 is incorrect. TUL is used by TX state machine, but current definition sounds like a receiver specification.

SuggestedRemedy

Replace TUL definition with "Local refresh time from signal enable to signal disable."

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **48-9b** *P* **135** *L* **96** # 15
Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

IIIDLE needs to be ||IDLE||

SuggestedRemedy

This correction is needed at two places in this state diagram.

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **Fig 48-9** *P* **132** *L* **23** # 20
Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

rx_LPI_active = FALSE

SuggestedRemedy

rx_lpi_active = FALSE

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **Fig 48-9b** *P* **135** *L* **43** # 17
Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

Arc from RX_WTF to RX_LINK_FAIL should have !rx_wf_timer_done instead of rx_tw_timer_done.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Arc from RX_WTF to RX_LINK_FAIL is OK, however:

Arc from RX_WTF to RX_ACTIVE should have !rx_wf_timer_done instead of !rx_tw_timer_done.

Cl **48** *SC* **Fig 48-9b** *P* **135** *L* **5** # 19
Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

RX_ACTIVE state should set rx_quiet <= FALSE

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.
See response to 75

Cl **48** *SC* **Fig48-9b** *P* **135** *L* # 16
Pillai, Velu Broadcom

Comment Type **E** *Comment Status* **A**

Please flip [A] and [B] to be consistent with Fig 36-9b

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **Fig48-9b** *P* **135** *L* **10** # 25
Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **R**

Transition out of RX_ACTIVE back to itself has a condition align_status!= deskew_align_status. But align_status latches deskew_align_status inside RX_ACTIVE. Hence this transition condition is meaning less.

SuggestedRemedy

Instead of the above, please use deskew_align_status = FAIL

Response *Response Status* **C**

REJECT.

Suggested remedy does not work.
This topic will be added to the agenda for the July meeting.

Comments 10, 25 & 36 bring up the same issue in clauses 36, 48 and 49 respectively

Cl **48** *SC* **Fig48-9b** *P* **135** *L* **45** # 18
Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

Arc from RX_WTF to RX_ACTIVE should be !||LPIDLE|| instead of ||IDLE||. Any recovery from RX_WTF is not guaranteed to be receiving idle codewords.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **48** *SC* **Table 48-10** *P* **136** *L* **18** # 23
Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

There is a row for Tda. But there is no debounce state, hence no need for this timer value

SuggestedRemedy

Remove the entire row

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **48.2.13.2.2** *P* **144** *L* **28** # 78
Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

What is an "enumerated variable"?

SuggestedRemedy

Change "enumerated" to "boolean".

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.1.6** *P* **139** *L* **22** # 79
Brown, Matt AMCC

Comment Type **ER** *Comment Status* **R**

Signal from PMA is signal_detect not energy_detect.

SuggestedRemedy

Change energy_detect to signal_detect.

Response *Response Status* **C**

REJECT.

The signal is, indeed, called energy_detect - see 51.8a.1 for definition.

Cl **49** *SC* **49.2.13.2.2** *P* **144** *L* **20** # 84
Brown, Matt AMCC

Comment Type **T** *Comment Status* **R**

The energy_detect variable is derived from the message PMA_SIGNAL.indication(signal_detect). Define it as such.

SuggestedRemedy

Replace definition for energy_detect with ...
"A boolean variable that indicates when energy is detected at the receiver. Set to TRUE if PMA_SIGNAL.indication(signal_detect) = OK or FALSE if PMA_SIGNAL.indication(signal_detect) = FAIL."

Response *Response Status* **C**

REJECT.

See 51.8a.1

Cl **49** *SC* **49.2.13.2.2** *P* **144** *L* **20** # 85
Brown, Matt AMCC

Comment Type **TR** *Comment Status* **A**

rx_block_lock is not accurate. rx_block_lock is equal to what was block-lock and block_lock depends on receive LPI state.

SuggestedRemedy

Replace rx_block_lock definition with the current block_lock definition:
"Boolean variable that is set true when receiver acquires block delineation."
Re-define block lock as follows:
"Boolean variable is set true when receiver acquires block delineation when receive LPI mode is not active and set based on the LPI receive state machine when receive LPI mode is active."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 55

Cl **49** *SC* **49.2.13.2.2** *P* **144** *L* **32** # 86
Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

Clarify rx_quiet definition.

SuggestedRemedy

Change "while in the RX_QUIET state" to "while the reciever is in the RX_QUIET state".

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.2.2** *P* **144** *L* **39** # 88
Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

Clarify scrambler_reset definition.

SuggestedRemedy

Change "this variable is used" to "the boolean variable is used".

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.2.2** *P* **144** *L* **39** # 89

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

Clarify scrambler_reset_enable definition.

SuggestedRemedy

Change "A variable used" to "A boolean variable used".

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.2.2** *P* **144** *L* **40** # 87

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

Clarify scrambler_reset definition.

SuggestedRemedy

Change "registers of the scrambler" to "bits of the scrambler delay line".

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.2.3** *P* **141** *L* **43** # 81

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

LI is by definition here not a special case of C type, rather its a type on its own.

SuggestedRemedy

Replace "LI type is a special case of the C type where" with "LI type is supported where".

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.2.3** *P* **143** *L* **45** # 125

McClellan, Brett Solarflare

Comment Type **TR** *Comment Status* **A** *late*

A new T_BLOCK_TYPE of LI has been introduced for use in Figure 49-14. However the text description of this block is incorrect as it describes the input vector as if it were a 65B block. The 72-bit tx_raw vector has not data/ctrl header or block type field.

SuggestedRemedy

Change the text for T_BLOCK_TYPEs I and LI to:

LI; If the optional Low Power Idle function is supported then this vector contains eight /LI/ characters, or contains four /LI/ followed by four /I/ characters.

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.2.3** *P* **143** *L* **46** # 82

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

LI is by definition here not a special case of C type, rather its a type on its own.

SuggestedRemedy

Replace "LI type is a special case of the C type where" with "LI type is supported where".

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.2.5** *P* **145** *L* **22** # 28
Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

During the adhoc/meetings, the decision was to have the wake timer to be for 1ms. But in the draft is point to TWR , which is only 11-12uSec (13-14uSec if FEC is ON). The purpose of this timer is to give the receiver a chance to gracefully recover from a wake time fault.

SuggestedRemedy

Add a row to Table 49-3 for Twtf and assign 1ms. In fact replace the TDA row for this.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change definition of rx_wf_timer:

"The timer terminal count is set to Twr" to "The timer terminal count is set to Twtf"

Replace last row of Table 49-3 with:

Twtf Wake time fault recovery time 1mS

Cl **49** *SC* **49.2.13.2.5** *P* **145** *L* **7** # 26
Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

Rx_deact timer is no longer used

SuggestedRemedy

Remove it

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.2.5** *P* **145** *L* **8** # 90
Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

rx_deact_timer is no longer used

SuggestedRemedy

Delete rx_deact_timer and definition.

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.3** *P* **147** *L* **4** # 91
Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

Incorrect use of /LI/.

SuggestedRemedy

In RX_LI state replace /LI/ with LI.

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.3.1** *P* **148** *L* **20** # 45
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **A**

The "loop" transitions for states TX_SLEEP, TX_QUIET and TX_REFRESH are all invalid because they would cause the timers to keep restarting (even if they didn't, they would be redundant since the state machine remains in the state unless an exit is valid.

SuggestedRemedy

Delete the "loop" transitions for states TX_SLEEP, TX_QUIET and TX_REFRESH.

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.3.1** *P* **148** *L* **5** # 92
Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

Redundant and out of style to equate variable to Boolean value.

SuggestedRemedy

Change "reset=TRUE" to "reset"

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.3.1** *P* **149** *L* **11** # 98

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

In Figure 49.17, in the transition from RX_ACTIVE state to itself the the criteria logic doesn't seem correct.

SuggestedRemedy

Change criteria to the following (changing OR to AND)
"R_TYPE(rx_coded) != LI * align_status != deskew_align_status"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution to comment #70

Cl **49** *SC* **49.2.13.3.1** *P* **149** *L* **21** # 93

Brown, Matt AMCC

Comment Type **TR** *Comment Status* **R**

In Figure 49-17, the transition from RX_WAKE and RX_WTF to RX_QUIET when !energy_detect could be an endless loop in realitic failure conditions such as link partner driver soft failing where the signal level on the link is sporadic or taps at wrong value. The problem is caused by the timer being continually reset.

SuggestedRemedy

The suggested remedy is to create a new state that prevents the timer from being reset every time a false wake or refresh is detected.

Create a new state between RX_SLEEP and RX_QUIET.
Call the new state RX_QUIET_INIT (or other suitable name).
The transition criteria from RX_SLEEP to RX_QUIET_INIT will be "signal_detect=fail".
Within RX_QUIET_INIT state include the following action:
"Start rx_tw_timer"
The transition criteria from "RX_QUIET_INIT to "RX_QUIET" is UCT (unconditional transition).
In RX_QUIET state delete Start rx_tq_timer. (This is the key to letting the timer run.)

As a result, regardless of how many transitions occur between RX_QUIET and RX_WAKE or RX_WTF due to sporadic energy, the rx_tq_timer will time out and a fault will be detected.

Response *Response Status* **C**

REJECT.

The commentor has identified a problem with the state machine. This will be addressed in the July meeting.

Cl **49** *SC* **49.2.13.3.1** *P* **149** *L* **21** # 94

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

Redundant and out of style to equate variable to Boolean value.

SuggestedRemedy

Replace all instances of "energy_detect=false" with "!energy_detect".
Replace all instances of "energy_detect=true" with "energy_detect".
Replace "reset=TRUE" with "reset".

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.3.1** *P* **149** *L* **21** # 97

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

rx_lpi_fail is not set to any value other than FALSE and is not defined in this Clause. Is this a necessary variable?

SuggestedRemedy

In RX_ACTIVE state delete "rx_lpi_fail"

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.3.1** *P* **149** *L* **21** # 96

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

Incorrect variable name in transition criteria from RX_ACTIVE to RX_SLEEP in Fig 49-17.

SuggestedRemedy

Change "R_TYPE(rx_raw)" to "R_TYPE(rx_coded)".

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.3.1** *P* **149** *L* **21** # 95

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

Incorrect comparison in Fig 49-17. rx_block_lock is a boolean variable.

SuggestedRemedy

Replace all instances of "rx_block_lock=OK" with "rx_block_lock".

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.3.1** *P* **149** *L* **8** # 101

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

In Figure 49-17, need to initialize rx_quiet variable.

SuggestedRemedy

In RX_ACTIVE state add line...
"rx_quiet <= FALSE"

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.3.1** *P* **150** *L* **10** # 44

Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **R**

It doesn't make sense that the refresh time is longer than the time that the receiver is allowed to recover a wake signal. This also poses problems for the receive LPI state machine.

SuggestedRemedy

Change T(ul) to 11uS

Response *Response Status* **C**

REJECT.

Reducing the refresh time will reduce the quality of the link.

Cl **49** *SC* **49.2.13.3.1** *P* **150** *L* **11** # 99

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

In Table 49-2, redefine TUL as transmitter variable.

SuggestedRemedy

Replace "from Signal_Detect asserted to" to "from start of TX_REFRESH state to start of".

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.13.3.1** *P* **150** *L* **28** # 100

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

In Table 49-3, TDA is no longer required.

SuggestedRemedy

Delete row specifying TDA.

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **49.2.4.4** *P* **139** *L* **22** # 83

Brown, Matt AMCC

Comment Type **T** *Comment Status* **R**

Energy detect is indicated through PMA_SIGNAL.indication(signal_detect).

SuggestedRemedy

Remove energy_detect line and lable from figure.

Response *Response Status* **C**

REJECT.

See 51.8a.1

Cl **49** *SC* **49.2.4.7** *P* **139** *L* **52** # 80

Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**

Clarify sentence.

SuggestedRemedy

Replace "idle control code 0x00 is replaced with 0x07" with "low power idle control character /LI/ (0x07) is sent continuously in place of /I/."

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **Fig 49-16** *P* **148** *L* **19** # 30

Pillai, Velu Broadcom

Comment Type **T** *Comment Status* **A**

SCR_RESET_2 is a redundant state as the transition out of that state is a UCT to TX_ACTIVE and scrambler_reset variable is set to false in TX_ACTIVE state. The original proposal had this state to assert 1uSec of IDLE codeword after the SCR_RESET_1 state. But that extra time is added to the T_wake Sys time budget. This serves the same purpose. Hence remove this state and rename the previous state from SCR_RESET_1 to SCR_RESET.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **Fig 49-17** *P* **149** *L* **10** # 36

Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **R**

Transition out of RX_ACTIVE back to itself has a condition block_lock!= rx_block_lock. But block_lock latches rx_block_lock inside RX_ACTIVE. Hence this transition condition is meaning less.

SuggestedRemedy

Instead of the above, please use rx_block_lock = FAIL

Response *Response Status* **C**

REJECT.

Suggested remedy does not work.
This topic will be added to the agenda for the July meeting.

Comments 10, 25 & 36 bring up the same issue in clauses 36, 48 and 49 respectively

Cl **49** *SC* **Fig 49-17** *P* **149** *L* **17** # 33

Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

Transition from RX_SLEEP to RX_ACTIVE needs be R_TYPE(rx_coded) = IDLE and not R_TYPE(rx_coded != LI. When Transmitter deactivates, received codewords may not be LI.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **Fig49-16** *P* **148** *L* **12** # 29

Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

The arrow that goes out of TX_ACTIVE for the condition T_TYPE(tx_row) != LI needs to touch the Arc that goes back to TX_ACTIVE

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **Fig49-17** *P* **149** *L* **27** # 32

Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

LPI TX state diagram designed only to go through scrambler reset only during WAKE. Hence during refresh the PCS will not detect codewords, if FEC is ON. Which means the receiver will not take the arc from RX_WAKE to RX_QUIET shown in LPI receive state diagram. The refresh time for KR PHY is 17usec and rx_tw_timer timeout is 13-14usec, hence it is guaranteed that rx_tw_timer_done will be asserted during every refresh cycle.

SuggestedRemedy

A state is needed between RX_WAKE and RX_WTF when rx_tw_timer_done is asserted. This new state (RX_REFRESH_WITH_FEC), should set Start rx_wf_timer and the transition out of it needs to be
1. An arc to RX_QUITE for energy_detect = false.
2. And arc to RX_WTF for rx_rwt_timer_done + (R_TYPE(rx_coded != LI * rx_block_lock).

Remove the arc going from RX_WTF to RX_SLEEP and also to RX_QUIET. Remove setting Start rx_wf_timer.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the value loaded into rx_tw_timer to Tul.

Cl **49** *SC* **Fig49-17** *P* **149** *L* **7** # 31

Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

RX_ACTIVE state should set rx_quiet <= FALSE

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **Figure-49-15** *P* **147** *L* # 34

Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

Rx PCS state machine resets to INIT state when rx_block_lock is lost. This can happen during Rx LPI state machine transitions into RX_QUIET state.

SuggestedRemedy

RX PCS should reset to INIT state only when (reset + r_test_mode + hi_ber + !block_lock This solution also handles the rx link fail state, where block lock is set to false.

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **Table 49-2** *P* **150** *L* **12** # 35

Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**

Value of Twl is 17 us. This was the orginal value, before the proposel to use scrambler reset to handle FEC. And this value is also more than the total T wake sys.

SuggestedRemedy

Reduce this value to 12usec.

Response *Response Status* **C**

ACCEPT.

Cl **49** *SC* **Table 49-3** *P* **150** *L* **28** # 27

Pillai, Velu Broadcom

Comment Type **ER** *Comment Status* **A**

There is a row for Tda. But there is no debounce state, hence no need for this timer value

SuggestedRemedy

Remove the entire row

Response *Response Status* **C**

ACCEPT.

Cl **55** *SC* **55.3.2.2** *P* **163** *L* **23** # 116

McClellan, Brett Solarflare

Comment Type **TR** *Comment Status* **R**

Both Clause 55 and Clause 49 share a common block encoder (64B/65B and 64B/66B). However the changes made for /LI/ are different between Clause 49 and 55. The control code for Clause 49 is 0x07 while the control code for Clause 55 ix 0x06. These clauses should maintain commonality as much as possible

SuggestedRemedy

Change the control code for /LI/ in Clause 55 to 0x07. Also make the associated changes to R_BLOCK_TYPE LI and T_BLOCK_TYPE LI.

Response *Response Status* **C**

REJECT.

This does not fix anything that is broken, however it may be a good idea. The commenter may wish to resubmit this in the working group ballot phase of this project.

Cl **55** *SC* **55.3.5.2.4** *P* **171** *L* **3** # 117

McClellan, Brett Solarflare

Comment Type **TR** *Comment Status* **A**

A new T_BLOCK_TYPE and R_BLOCK_TYPE of LI has been introduced for use in Figure 55-15a and Figure 55-16a. However the control code listed as 0x07 is incorrect. The control code for an idle control character in the 64B/65B encoder is 0x00.

SuggestedRemedy

Change the control code for LI from 0x07 to 0x00 on lines 3 and 32 on page 171.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

After a brief discussion with the commentor it was noted that there is a typo in the comment. LI should be replaced with I in the comment and the suggested remedy.

Change the control code for /I/ from 0x07 to 0x00 on line 3 on page 171.

Cl **55** *SC* **55.3.5.2.4** *P* **171** *L* **30** # 126

McClellan, Brett Solarflare

Comment Type **TR** *Comment Status* **A** *late*

Two new T_BLOCK_TYPEs of I and LI has been introduced for use in Figure 55-15a and Figure 55-16a. However the text description of these blocks is incorrect as they describe the input vector as if it were a 65B block. The 72-bit tx_raw vector has not data/ctrl header or block type field.

Furthermore, there is an error in the state machine that will cause an exit from the TX_L state to the TX_WE state if a block of /LI/ /LI/ /LI/ /LI/ /I/ /I/ /I/ /I/ is to be transmitted. The intended transition is to state TX_L only when a full block of idle is to be transmitted.

SuggestedRemedy

Change the text for T_BLOCK_TYPEs I and LI to:

C; The vector contains one of the following:

a) eight valid control characters other than /O/, /S/, /T/ and /E/ and, if the low power

idle function is supported, is not a T_BLOCK_TYPE LI defined below

all of which are not /LI/ or four /LI/ followed by four /I/;

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to 115

Cl **55** *SC* **55.3.5.4** *P* **174** *L* **17** # 115

McClellan, Brett Solarflare

Comment Type **TR** *Comment Status* **A**

The creation of the T_BLOCK_TYPE I and separation of type I from type C when low power idle is supported has broken the transmit state diagram in Figure 55-15. Transitions that only call out C will not be taken when an I block is to be transmitted. For example from state TX_C there is no transition for a type I.

SuggestedRemedy

Change state machine transitions that originally included only C to include both C and I.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
On page 171 I and LI are currently defined as special types of the C field, therefore C includes I.
While the specific example in the comment does not seem to be a problem, there are issues caused by this definition.
For example at the transitions from TX_WN to TX_C and to TX_E (Figure 55-15a), either transition could be taken since LI is a subtype of C in draft 1.4. The transitions from TX_C to TX_C and TX_C to TX_L on Figure 55-15 have a similar problem. Also on Figure 55-15a TX_L to TX_WN and TX_L to TX_WE are ambiguous (there are separate transitions on I and C, but I is a subtype of C).
In addition, it was noted that transitions from TX_C to TX_E caused by a single error followed by /LI/ will stall the 64B/65B Tx state machine in the error state. An extra transition from TX_E to TX_L when /LI/ is detected will be added to the diagram to fix this. A similar transition is required on the receive state diagram.
LI will be redefined as its own type, and not as a subtype of C.
Edited text (to be applied to R_BLOCK_TYPE):

C; The vector contains a data/ctrl header of 1 and one of the following:
a) A block type field of 0x1E and eight valid control characters, none of which are /E/ and, if the low power idle function is supported, all of which are not /LI/;

I; If the optional Low Power Idle function is supported then the I type is a special case of the C type where the vector contains a data/ctrl header of 1, a block type field of 0x1e, and eight control characters of 0x00 (/I/)
LI: If the optional Low Power Idle function is supported then the LI type occurs when the vector contains a data/ctrl header of 1, a block type field of 0x1e, and eight control characters of 0x06 (/LI/).
Edited text (to be applied to T_BLOCK_TYPE):

C; The vector contains a data/ctrl header of 1 and one of the following:
a) eight valid control characters other than /O/, /S/, /T/ and /E/; and, if the low power idle function is supported, which are not eight /LI/ characters and which are not four /LI/ control characters followed by four /I/ control characters.
I; If the optional Low Power Idle function is supported then the I type is a special case of the C type where the vector contains eight control characters of /I/
LI; If the optional Low Power Idle function is supported then the LI type occurs when the vector contains eight control characters of /LI/, or contains four /LI/ followed by four /I/ characters.
The following changes will be made to the state diagrams:
1) remove LI from transition from TX_E to TX_E on Figure 55-15
2) add transition from TX_E to TX_L conditioned on /LI/ on Figure 55-15
3) change C to (C.!I) on transition from TX_L to TX_WE on Figure 55-15a
4) change C to (C.!I) on transition from TX_WN to TX_WE on Figure 55-15a
5) change C to (C.!I) on transition from TX_WN to TX_E on Figure 55-15a
6) remove LI on transition from RX_E to RX_E on Figure 55-16.
7) Add transition from RX_E to RX_L on Figure 55-16
8) Correct a typo on Figure 55-15a : tx_lpi_done=false should be tx_lpi_active=false (tidstrom_02_1108.pdf)
Also note that the E (circle) entrance to TX_E has disappeared from the diagram and will be replaced.

Cl **55** *SC* **55.3.5.4** *P* **176** *L* **17** # 118

McClellan, Brett Solarflare

Comment Type **TR** *Comment Status* **A**

The creation of the R_BLOCK_TYPE I and separation of type I from type C when low power idle is supported has broken the receive state diagram in Figure 55-16. Transitions that only call out C will not be taken when an I block is to be transmitted. For example from state RX_C there is no transition for a type I.

SuggestedRemedy

Change state machine transitions that originally included only C to include both C and I.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #115

Cl **72** *SC* **72.6.5** *P* **209** *L* **9** # 102

Brown, Matt AMCC

Comment Type **T** *Comment Status* **A**

Clarification of Tx target level. No need to specify "maximum" value. Also, the values are trained not negotiated.

SuggestedRemedy

Replace "greater than 90% of the negotiated maximum value" with "greater than 90% of the trained peak-to-peak value".

Response *Response Status* **C**

ACCEPT.

Cl **72** *SC* **72.7.1** *P* **211** *L* **16** # 103
Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**
In table 72-6, fix deact time description.

SuggestedRemedy
Change description to "Transmitter deactivation time (TTD) from active to LPI quiet.

Response *Response Status* **C**
ACCEPT.

Also fix it in Clause 70 and Clause 71

Cl **72** *SC* **72.7.1** *P* **211** *L* **18** # 104
Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**
In table 72-6, fix act. time description.

SuggestedRemedy
Change description to "Transmitter activation time (TTA) from LPI quiet to active.

Response *Response Status* **C**
ACCEPT.

Also fix it in Clause 70 and Clause 71

Cl **72** *SC* **72.7.1** *P* **212** *L* **15** # 105
Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**
In Table 72.9, fix deact. time description.

SuggestedRemedy
Change description to "Signal detect deactivation time (TSD) from active to LPI quiet.

Response *Response Status* **C**
ACCEPT.

Also fix it in Clause 70 and Clause 71

Cl **72** *SC* **72.7.1** *P* **212** *L* **18** # 106
Brown, Matt AMCC

Comment Type **ER** *Comment Status* **A**
In Table 72.9, fix act. time description.

SuggestedRemedy
Change description to "Signal detect activation time (TSA) from LPI quiet to active.

Response *Response Status* **C**
ACCEPT.

Also fix it in Clause 70 and Clause 71

Cl **73A** *SC* *P* **250** *L* **32** # 37
Pillai, Velu Broadcom

Comment Type **TR** *Comment Status* **A**
The wording is not representative of the number of pages needed nor does it provide enough information for implementation. Suggested fix is similar to existing wording for other next pages defined in the existing annex.

SuggestedRemedy
Change wording from
"Multiple clauses use next page message code 10 to indicate that EEE technology will follow the transmission of this page [the initial, Message (formatted) next page] with at least one unformatted next pages that contain information defined in 45.2.7.13a."
to
"Multiple clauses use next page message code 10 as an identifier for EEE technology. The EEE technology code message shall consist of only a Message next page. The message code field, 000 0000 1010 shall be contained in bits 10:0 and 45.2.7.13.6:0 shall be contained in bits 22:16. The remaining field bits, 47:23 shall be sent as zero and ignored on receipt."

Response *Response Status* **C**
ACCEPT.

Cl **78** *SC* **78.1.2** *P* **228** *L* **47** # 1

Fuller, John Lawrence Berkeley Na

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

LPI Client will need additional interfaces to control the Layer 2 LLDP negotiation of Transmit Tw and Receive Tw. There are cases within 802.1 AVB standards where LPI is desired but only if the negotiated transmit wait time is held to some maximum that may or may not be less than what the Ethernet implementation could otherwise support (when AVB streams are active on the link). Other upper layer technologies may have similar constraints that will be known to the LPI Client.

SuggestedRemedy

Add following primitives:

LP_MAX_TX_WAIT.request(time)
time in usec, 0 means no restriction imposed by LPI Client

LP_MAX_RX_Wait.request(time)
time in usec, 0 means no restriction imposed by LPI Client

LP_TX_WAIT.indication(time)
time is negotiated transmit wait time in usec

LP_RX_WAIT.indication(time)
time is negotiated receive wait time in usec

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **78** *SC* **78.1.2.1.2** *P* **229** *L* **17** # 112

Grimwood, Michael Broadcom

Comment Type **T** *Comment Status* **A**

A one second timer for LP_IDLE.request assertion was applied in Clause 22 for MII but not globally to all PHYs.

SuggestedRemedy

LPI_IDLE.request shall not be set to ASSERT unless the attached link is operational (i.e. link_status = OK, see 28.2.6.1.1). LP_IDLE.request shall remain to be set to DEASSERT for 1 second following link_status changing state to OK.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

LPI_IDLE.request shall not be set to ASSERT unless the attached link is operational (i.e. link_status = OK, see 28.2.6.1.1). LP_IDLE.request shall remain set to DEASSERT for 1 second following the change of link_status to OK.

Cl **78** *SC* **78.4.2.5** *P* **238** *L* **21** # 5

Dietz, Bryan Alcatel-Lucent

Comment Type **E** *Comment Status* **A**

Suggestion to simplify language and eliminate "set of link partners".

SuggestedRemedy

The transmitting side controls the data placed on the medium connecting the transmit and receive link partners and enforces Tw_sys. The transmitting link partner shall wait for the time indicated by the Transmit Tw_sys after deasserting Low Power Idle at the xxMII before sending data frames.

The receiving link partner shall be ready to accept data based on (its echoed value of the) Transmit link partner's Tw_sys. This ensures that the link partners transition out of LPI mode and receive frames without loss or corruption.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Text in existing draft could be simplified without loss of content:
- Delete the words "Thus, ", "a set of" from the second sentence
- Delete the words "Similarly," from the third sentence

Cl **99** *SC* *P* **1** *L* **30** # 119

Thompson, Geoff
Nortel

Comment Type **ER** *Comment Status* **A**

The description on the front page is only a project description, not a draft description

SuggestedRemedy

Please expand the description to include where the draft was in the process and a result of what meeting. This sort of information has turned out to be tremendously helpful when it is necessary to go back and pull out old drafts. A macro textual description of what changes went into the particular draft is also very helpful.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Description will be expanded to include where the draft was in the process and the result of what meeting.

A macro textual description of what changes went into the particular draft may be too long to put into the abstract in general though this will be done if there are a few very significant changes.