Cl **00** *SC* *P* *L* # **103**

Rich Seifert Networks & Communic

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

Process comment: The ballot instructions indicated that there was only one outstanding negative from the last ballot. There are two: Howard Frazier and myself.

SuggestedRemedy

Indicate the ACTUAL number of outstanding negatives on future ballots, even if some are "resolved in principle".

Proposed Response *Response Status* **U**

ACCEPT.
We felt we had adequately described the situation in the ballot letter(s)--for both the initial recirculation (D4.1) and the second recirculation (D4.2). In addition, we did maintain a full archive of all comments for D4.0 and D4.1 on the website so they were accessible to all voters. That said, we agree that 802.3 should do better in the future to ensure that the ballot/comment/draft status is accurately presented to balloters.

Resolution of this comment is deemed to be beyond the scope of the Task Force.

Cl **00** *SC* *P* *L* # **101**

Rich Seifert Networks & Communic

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

I am adding my negative vote to Howard Frazier's comment #298.
Similar to Howard, I agree that the technology involved in 1000BASE-T is complex enough to mandate an existence proof before standardization. As stated, ALL successful 802.3 Physical Layer standards have had such existence proofs prior to standardization. 1000BASE-T should do the same, to achieve the same level of success.

SuggestedRemedy

See comment 298.

Proposed Response *Response Status* **W**

REJECT
Mr. Frazier's comment 298 regarding technical proof of operation was discussed at length in the 802.3 closing plenary on November 12, 1998. Subsequently, the 802.3 working group voted to modify the response made to Mr. Frazier's comment and then voted to approve advancing 802.3ab to Sponsor Ballot WITH FULL KNOWLEDGE OF MR. FRAZIER'S COMMENT (see minutes for November 98 Albuquerque primary).

FYI at least three 802.3 standards have gone forward to sponsor ballot without technical proof of operation. The 802.3ab editor is personally aware of two such instances, 100BASE-T4 and 100BASE-T2, and is reliably informed that an earlier fiber-based Ethernet PHY was approved without technical proof of operation.

Since Mr. Frazier's comment was been addressed by the Working Group on November 12, this comment is deemed out-of-scope for this recirculation. Mr. Frazier's comment will be carried forward to Sponsor Ballot.

Cl **00** *SC* *P* *L* # **35**

Brad Booth Jato Technologies

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

"code group" should be "code-group"

SuggestedRemedy

perform global search and replace

Proposed Response *Response Status* **W**

Accept, done

Cl **00** *SC* *P* **28-1** *L* # **37**

Brad Booth Jato Technologies

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

sentence unclear

SuggestedRemedy

Line 10, change to "Renumber 28.2.4.1.7 as 28.2.4.1.8, insert the following as 28.2.4.1.7, and renumber the remaining tables."

Line 19, change to "The values contained in this register are only guaranteed to be valid after the Page Received bit (6.1) has been set to logical one or once Auto-Negotiation has successfully completed, as indicated by bit 1.5."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **00** *SC* *P* **32-1** *L* # **39**

Brad Booth Jato Technologies

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

typos

SuggestedRemedy

Line 6, "parageaph2" should be "paragraph 2".
Line 8, insert comma after "Control Register".
Line 20, "32.5.3.1" should be "32.5.3.2".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* *P* **34-1** *L* # **40**

Brad Booth — Jato Technologies

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

typos

SuggestedRemedy

Line 3, "devopment" should be "development".
Line 7, "Balaned" should be "Balanced".
Line 12, space needed between "IEEE" and "802.3".
Line 18, change to "Suitable entries for Table G.4 of ISO/IEC 11801:1995 Annex G would be as follows:"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* *P* **42-1** *L* # **41**

Brad Booth — Jato Technologies

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

typos

SuggestedRemedy

Line 5, remove "transmissin distance for the link".
Line 6, insert "as" between "lengths" and "shown", and remote ending quotes.
Line 8, "42.2" should be "42.3".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* *P* *L* # **100**

Joel Goergen — Ascend Communicatio

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

Based on Comment 298 and the fact that 40.6.x.x.x indicates serious emi concerns, I can not approve this standard.

SuggestedRemedy

Proposed Response *Response Status* **U**

REJECT.
Mr. Frazier's comment 298 regarding technical proof of operation was discussed at length in the 802.3 closing plenary on November 12, 1998. After this dicussion, the 802.3 working group voted to modify the response made to Mr. Frazier's comment (see minutes for November 98 Albuquerque primary) and then voted to approve advancing 802.3ab to Sponsor Ballot WITH FULL KNOWLEDGE OF MR. FRAZIER'S COMMENT. The text and results of that motion are provided below.
Move that 802.3:
1. Accept the resolution of comments against 802.3ab D4.1;
2. Authorize the conduct of a 15day electronic-only recirculation for the purpose of having the working group review technical changes made to D4.1 to resolve the comments; and
3. Direct the chair of 802.3 to submit 802.3ab to the 802 executive committee for sponsor ballot, contingent upon a successful recirculation and no new disapprove ballots.
M: Mr. Eisler, S: Mr. Mick
Y: 44 N: 0 A: 2 Approved.
The chair ruled that item 1 of the motion will not affect the previous motion. The chair ruled that open Working Group technical comments be carried forward to Sponsor Ballot.

That said, it is NOT correct that no 802.3 standards have gone forward to sponsor ballot without technical proof of operation. The 802.3ab editor is personally aware of two such instances: 100BASE-T4 and 100BASE-T2 and is informed that an earlier fiber-based Ethernet PHY was also approved without technical proof of operation.

Since Mr. Frazier's comment was been addressed by the Working Group on November 12, this comment is deemed out-of-scope for this recirculation. Mr. Frazier's comment will be carried forward to Sponsor Ballot.

Cl **01** *SC* *P* **1-2** *L* **12** # **104**

Rich Seifert — Networks & Communic

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

Change "idepending" to "depending".

SuggestedRemedy

Self explanatory.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* *P* **1-3** *L* **17** # **105**

Rich Seifert Networks & Communic

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

IEEE 802.3 frames (as defined in Clause 3) do not contain either data modes, idle modes, or control modes. Similarly, they do not comprise reset code-groups nor an End-of-Stream delimiter.

SuggestedRemedy

Change "complete a frame" to "complete a stream".

Proposed Response *Response Status* **U**

ACCEPT.

We will correct the definition to reflect your comment. This is deemed an editorial change.

Technically, 802.3 defines a MAC Frame and a Data Frame; Clause 3 addesses the 802.3 Media access control frame structure. We could not find an "802.3 Frame" defined by the 802.3 standard.

Cl **01** *SC* **1.4.xxx** *P* **1-1** *L* **26** # **78**

Brad Booth Level One

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

comma required

SuggestedRemedy

change "For 1000BASE-T a vector..." to "For 1000BASE-T, a vector..."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.xxx** *P* **1-1** *L* **27** # **27**

Steve Pryor Compaq

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

A definition for 8B1Q4 needs to be added before the reference that appears on line 27. Before this definition of code-group, add the definition in the suggested remedy.

SuggestedRemedy

1.4.xxx 8B1Q4: For IEEE 802.3, the data encoding technique used by 1000BASE-T when converting GMII data (8B-8 bits) to four Quinary symbols (Q4) that are transmitted during one clock (1Q4).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **01** *SC* **1.4.xxx** *P* **1-1** *L* **35** # **79**

Brad Booth Level One

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

capitalize T in table and need a space between IEEE and 802.3

SuggestedRemedy

change "... using table 40-1. (See IEEE802.3 Clauses..." to "... using Table 40-1. (See IEEE 802.3 Clauses..."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.xxx** *P* **1-1** *L* **46** # **81**

Brad Booth Level One

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

missing space

SuggestedRemedy

change "IEEE802.3" to "IEEE 802.3"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.xxx** *P* **1-1** *L* **46** # **80**

Brad Booth Level One

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

change in text relative to IEEE Std. 802.3-1998

SuggestedRemedy

change "Physical Coding Sublayer" to "PCS"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.xxx** *P* **1-1** *L* **50** # **82**

Brad Booth Level One

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

wrong line number in previous comment... missing space

SuggestedRemedy

change "IEEE802.3" to "IEEE 802.3"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.xxx** *P* **1-2** *L* **1** # **83**
Brad Booth Level One

Comment Type **E** *Comment Status* **A**
change in description from IEEE Std. 802.3-1998

SuggestedRemedy
change "Physical Layer Device" to "Physical Layer entity"

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

Cl **01** *SC* **1.4.xxx** *P* **1-2** *L* **27** # **86**
Brad Booth Level One

Comment Type **E** *Comment Status* **A**
type out in full

SuggestedRemedy
change "master PHY" to "master Physical Layer"

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

Cl **01** *SC* **1.4.xxx** *P* **1-2** *L* **49** # **87**
Brad Booth Level One

Comment Type **E** *Comment Status* **A**
missing comma

SuggestedRemedy
change "Within 802.3 an eight-bit..." to "Within 802.3, an eight-bit..."

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

Cl **01** *SC* **1.4.xxx** *P* **1-2** *L* **8** # **85**
Brad Booth Level One

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

SuggestedRemedy
change "idepending" to "depending"

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

Cl **01** *SC* **1.4.xxx** *P* **1-2** *L* **8** # **84**
Brad Booth Level One

Comment Type **E** *Comment Status* **A**
change in description from IEEE Std. 802.3-1998

SuggestedRemedy
change "physical layer" to "Physical Layer"

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

Cl **01** *SC* **1.4.xxx** *P* **1-3** *L* **10** # **89**
Brad Booth Level One

Comment Type **E** *Comment Status* **A**
caps needed

SuggestedRemedy
change "data mode" to "Data mode"

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

Cl **01** *SC* **1.4.xxx** *P* **1-3** *L* **12** # **90**
Brad Booth Level One

Comment Type **E** *Comment Status* **A**
description is confusing

SuggestedRemedy
change "... arriving across the GMII interface TXD<7:0>." to "... arriving on TXD<7:0> via the GMII."

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

Cl **01** *SC* **1.4.xxx** *P* **1-3** *L* **16** # **45**
Larry Miller Nortel Networks

Comment Type **E** *Comment Status* **A**
"preceeds" - misspelled

SuggestedRemedy
Change to "precedes". Maybe run Spell Checker over whole doc!

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

Cl **01** *SC* **1.4.xxx** *P* **1-3** *L* **27-29** # **28**

Steve Pryor Compaq

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

The definition for 4D-PAM5 is incorrect. This term represents the signal encoding technique for 1000BASE-T, not the data encoding technique. The data encoding technique is 8B1Q4. This is equivalent to the MLT-3 signal encoding technique used in 100BASE-T which is different from the 4B5B data encoding technique of 100BASE-T.

SuggestedRemedy

Change the definition of 4D-PAM5 as follows:
1.4.xxx 4D-PAM5: The signal encoding technique used in 1000BASE-T. The four dimensional quinary symbols (4D) received from the 8B1Q4 data encoding are transmitted using five voltage levels (PAM5). Four symbols are transmitted in parallel each symbol period.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **01** *SC* **1.4.xxx** *P* **1-3** *L* **38** # **106**

Rich Seifert Networks & Communic

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

Change "methods" to "method".

SuggestedRemedy

Self explanatory.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.xxx** *P* **1-3** *L* **42-44** # **107**

Rich Seifert Networks & Communic

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

The definition of multi-port device is based on the number of connectors. It is possible to have a device with multiple MDI connectors that really comprises only a single port (just with multiple MDI options). (One example is a 100BASE-TX/FX device). Such a device would be a "multi-port" device by your definition, yet should not be considered such for determining Master/Slave resolution.

SuggestedRemedy

Change definitions to:
"A device with multiple instances of a PMA-MDI pair", and
"A device with a single instance of a PMA-MDI pair."

Proposed Response *Response Status* **U**

ACCEPT.
This is deemed an editorial change.

Cl **01** *SC* **1.4.xxx** *P* **1-3** *L* **8** # **88**

Brad Booth Level One

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

"a number of carrier extend code-groups" has no meaning

SuggestedRemedy

change "a number of carrier extend code-groups." to "carrier extend code-groups."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* *P* **22-1** *L* # **36**

Brad Booth Jato Technologies

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

typos

SuggestedRemedy

Line 3, convert "table" to "Table".
Line 5, put MASTER/SLAVE Control Register in quotes.
Line 13, "22.2.4.7.7" should be "22.2.4.3.7"
Line 15, change "by" to "for".
Line 22, change "provdes bit values by" to "provides bit values for"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **28** *SC* **40CH.3** *P* **28B-4** *L* **40** # **17**

Erik Dickens Texas Instruments

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

Replacement table 28C-1 - is in the wrong annex--this seems to be a dupluicate of portions of table 28C1

SuggestedRemedy

remove

Proposed Response *Response Status* **C**

ACCEPT.

Cl **28B** *SC* *P* **28B-1** *L* # **43**
Brad Booth Jato Technologies

Comment Type **E** *Comment Status* **A**
bad grammar... :-)

SuggestedRemedy
Line 18, change "Setting Bit A5, A6 or both..." to "Setting Bith A5 or A6...", and remove the second "both".
Line 21, change "table" to "Table".

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

Cl **28B** *SC* *P* **28B-3** *L* **6** # **44**
Brad Booth Jato Technologies

Comment Type **E** *Comment Status* **A**
see below...

SuggestedRemedy
change "Local Resolution" to "Local Device Resolution".

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

Cl **28B** *SC* *P* **28B-4** *L* # **42**
Brad Booth Jato Technologies

Comment Type **E** *Comment Status* **A**
page 28B-4 is unnecessary and confusing...

SuggestedRemedy
delete page

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
There is an editorial error that will be corrected

Cl **28B** *SC* **40CH.2** *P* **28B-4** *L* **24** # **24**
Erik Dickens Texas Instruments

Comment Type **E** *Comment Status* **A**
TYPO:

SuggestedRemedy
Change "priority. full-duplex" to "priority. Full-duplex"

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

Cl **28C** *SC* *P* **28C-1** *L* # **46**
Brad Booth Jato Technologies

Comment Type **E** *Comment Status* **A**
see below...

SuggestedRemedy
line 42, change to "28C.10 - Message Code #8 - 1000BASE-T technology message code"

line 45, change "(the initial, Message (formatted) Next Page)" to "[the initial, Message (formatted) Next Page]" to follow conventions use in paragraphs of 28C.

line 46, change "4.5.1.1" to "40.4.1.1"

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

Cl **28C** *SC* **28C.10** *P* **28C-1** *L* **47** # **20**
Erik Dickens Texas Instruments

Comment Type **E** *Comment Status* **A**
Typo resulting in incorrect reference of 4.5.1.1

SuggestedRemedy
Correct reference to 40.5.1.1

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

Cl **28C** *SC* **40CH Annex 28C** *P* **28C-1** *L* **34** # **18**
Erik Dickens Texas Instruments

Comment Type **E** *Comment Status* **A**
Message code number is "9 ...."

SuggestedRemedy
Change to "9"

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
We will review the table to ensure that the meaning is clear

Cl **28C** *SC* **40CH Annex 28C** *P* **28C-1** *L* **36** # **19**

Erik Dickens Texas Instruments

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

Message code number is ".....2047"

SuggestedRemedy

Change to "2047"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
We will review the table to ensure that the meaning is clear

Cl **28D** *SC* *P* **28D-1** *L* # **47**

Brad Booth Jato Technologies

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

see below...

SuggestedRemedy

line 15, change "(40.1.4.4)" to "(40.4.1)"
line 17, change "(40.5.1.1)" to "(40.4.1.2)"
line 23, change end of sentence to "... MASTER or SLAVE operation. (40.4.5)"
line 28, change "(40.5)" to "(40.4)"
line 35, change "!GigT" to "1GigT"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **28D** *SC* **40CH Annex 28D** *P* **28D-1** *L* **15** # **21**

Erik Dickens Texas Instruments

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

Incorrect reference to 40.1.4.4

SuggestedRemedy

Correct reference to 40.5.1

Proposed Response *Response Status* **C**

ACCEPT.

Cl **28D** *SC* **40CH Annex 28D** *P* **28D-1** *L* **17** # **22**

Erik Dickens Texas Instruments

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

Incorrect reference to 40.5.1.1. This reference does not contain the information implied.

SuggestedRemedy

Correct reference to 40.5.1.2

Proposed Response *Response Status* **C**

ACCEPT.

Cl **28D** *SC* **40CH Annex 28D** *P* **28D-1** *L* **24** # **23**

Erik Dickens Texas Instruments

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

Incorrect reference to 40.5.1.1. This reference does not contain the information implied.

SuggestedRemedy

Believe correct reference is 40.5.1

Proposed Response *Response Status* **C**

ACCEPT.

Cl **28D** *SC* **40CH Annex 28D** *P* **28D-1** *L* **28** # **25**

Erik Dickens Texas Instruments

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

Sentence states changes to registers 0-8 as defined in 28.2.4 and 32.5.2. Section 32.5.2 contains registers 9 & 10.

SuggestedRemedy

Correct sentence from "registers 0-8" to "registers 0-10"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **28D** *SC* **40CH Annex 28D** *P* **28D-1** *L* **35** # **26**

Erik Dickens Texas Instruments

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

TYPO

SuggestedRemedy

Change !GigT to 1GigT

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* *P* **30-1** *L* # **38**

Brad Booth — Jato Technologies

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

typos

SuggestedRemedy

Line 7, the word "specified" should be "defined", and the words "asdefined" should be "as specified".

Line 13, change "100BASE-T2 or 1000BASE-T" to "MASTER/SLAVE", and change "MII register" to "MII management register".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30B** *SC* *P* **30B-1** *L* # **91**

Brad Booth — Level One

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

change descriptions need to be update for IEEE Std. 802.3-1998

SuggestedRemedy

line 3, remove sentence

line 5, change "Change two instances in AutoNegTechnology of..." to "In 30B.2, change two instances in AutoNegTechnology of..."

line 7, change sentence to read "Delete footnote #61 and associated pointer. Re-number all footnotes."

line 9, change to read:
Change three instances in TypeValue of "... to be defined in Clause 40." to read "... as specified in Clause 40."

line 12, delete.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* *P* **40-40** *L* **44-51** # **111**

Rich Seifert — Networks & Communic

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

There is a serious problem with the use of the variable name "tranmsmitting". As I read it, this is the same variable defined in Clause 4, as part of the interface between the MAC and the Physical Layer. This signal is generated by the MAC and used by the PHY. The impression given here is that this is a local variable, since it is shown as a "variable" rather than an "interface message".

There is a further problem, however. The interface specified by Clause 4 to the Physical Layer is not directly available to 1000BASE-T. Since 1000BASE-T defines its upper-layer service interface through the GMII, it cannot have access to the "transmitting" primitive, since this signal is present only on the other side of the Reconciliation Sublayer.

Also, the term "packet" is used in the definition, which is incorrect.

SuggestedRemedy

Generate the same logical signal as "transmitting" from the signals on the GMII (i.e., TXEN, TXD, etc.). In the event that you are actually using this as a local variable (i.e., if I am mistaken that this is the same signal from Clause 4) then a name change is needed.

Also, change "packet" to frame" in the definition.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
The transmitting variable used in clause 40 IS NOT the same variable referred to in Clause 4. The Clause 40 "transmitting" variable is an internal variable used within the PCS to indicate that the PCS is, indeed, transmitting. (As such it is parallel to the local variable "receiving" that is also used inside the Clause 40 PCS.)

To avoid any confusion, we will rename these local variables. The 802.3 chair has ruled that this is an editorial change.

Cl **40** *SC* *P* **40.5** *L* # **102**

Rich Seifert — Networks & Communic

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

As a courtesy to Bob Noseworthy, I am submitting his comment as an official ballot comment. He has raised enough concern with subclause 40.5 to warrant official action. His comments are well documented in the paper posted to the 802.3ab reflector in:
"Problems with 40.5 Management.pdf", dated 11/27/98

SuggestedRemedy

See Bob Noseworthy's posting to the 802.3ab reflector titled, "40.5 Management.pdf", dated 11/27/98.

(Note to editor: The web-based comment submission method does not allow attachments. This is a serious deficiency, especially as the ballot instructions REQUIRE use of this form. Without accepting attachments, one would have to re-type in any such document.)

Proposed Response *Response Status* **C**

ACCEPT
The solution to Mr. Noseworthy's concerns cited in your comment have been addressed by editorial changes to the standard which move the Add-On state machines described in 40.5 to an informative annex and insert clarifying text into 40.5 to explain that: a) this solution is a suggested way of implementing Auto-Negotiation so that it will support the transmission of Next Pages in addition to those Next Pages required to configure 1000BASE-T operation and b) implementors who do not wish to send (or support the sending) of Next Pages (in addition to those required for 1000BASE-T configuration) can use the standard Auto-Negotiation functions defined in Clause 28. This solution was developed in part to address your outstanding TR comment #109 against D4.0.

Mr. Noseworthy helped to develop this solution and chose not to submit a comment regarding the email you cite in your comment. Since a) Mr. Noseworthy elected not to submit a comment with regard to the issues you raise, b) he has indicated that he is satisfied that the editorial changes proposed will resolve his concerns, and c) this comment (#102) speaks specifically to Mr. Noseworthy's concerns and not your's, we deem our resolution to be an acceptable response to your comment.

Cl **40** *SC* **28C.10** *P* **28C-1** *L* **42** # **149**

Bob Noseworthy — UNH IOL

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

List full name in section title, as with 28C.9

SuggestedRemedy

Change "28C.10 --- Message Code #8 - 1000BASE-T"
to
"28C.10 --- Message Code #8 - 1000BASE-T technology message code"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **28D.5** *P* **28D-1** *L* **35** # **150**

Bob Noseworthy — UNH IOL

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

typo

SuggestedRemedy

change "!GigT" to "1GigT"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **30.13.3** *P* **40-102** *L* **1** # **140**

Brad Booth — Level One

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

update heading

SuggestedRemedy

change to read:
"40.13.3 PICS pro forma table for clause conventions"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **30.13.3** *P* **40-102** *L* **6** # **139**

Brad Booth — Level One

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

removal of shall results in removal of PICS entry

SuggestedRemedy

remove CCO1, change CCO2 to CCO1

Proposed Response *Response Status* **W**

This comment was withdrawn by Mr. Booth.

Cl **40** *SC* **40.1..6** *P* **40-7** *L* **27** # **137**

Brad Booth — Level One

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

"shall" is not required

SuggestedRemedy

change "... state diagram shall prevail." to "... state diagram prevails."

Proposed Response *Response Status* **W**

This comment was withdawn by Mr. Booth

Cl **40** *SC* **40.1.1** *P* **40-1** *L* **31** # **31**
Robert Campbell Lucent

Comment Type **E** *Comment Status* **A**
Provide reference for repeater

SuggestedRemedy
Add `(Clause 41)' after `repeater'.

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

Cl **40** *SC* **40.1.1** *P* **40-1** *L* **31** # **30**
Robert Campbell Lucent

Comment Type **E** *Comment Status* **A**
Provide reference for GMII

SuggestedRemedy
Add `(Clause 35)' after `GMII'.

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

Cl **40** *SC* **40.1.1** *P* **40-1** *L* **37** # **32**
Robert Campbell Lucent

Comment Type **E** *Comment Status* **A**
Is Clause 28 correct?

SuggestedRemedy
Should Clause 37 be the reference instead of Clause 28 or should both clauses be referenced?
I assume it should be Clause 37.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
We will review the cited text and ensure that the appropriate reference is used.

Cl **40** *SC* **40.1.2** *P* **40-1** *L* **39-43** # **48**
Brad Booth Jato Technologies

Comment Type **E** *Comment Status* **A**
try to follow clause 24 and 36, see below...

SuggestedRemedy
Change to:
40.1.2 Relationship of 1000BASE-T to other standards

Figure 40-1 depicts the relationships among the 1000BASE-T sublayers (shown shaded), the CSMA/CD MAC and reconciliation layers, and the ISO/IEC 8802-2 LLC.

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

Cl **40** *SC* **40.1.3** *P* **40-5** *L* # **49**
Brad Booth Jato Technologies

Comment Type **E** *Comment Status* **A**
change description of figure

SuggestedRemedy
Change figure description to read "Figure 40-3 - Functional block diagram"

Page 40-3, line 2, change last sentence to read "Figure 40-3 shows the functional block diagram."

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

Cl **40** *SC* **40.1.3.1** *P* **40-3** *L* # **50**
Brad Booth Jato Technologies

Comment Type **E** *Comment Status* **A**
change title to caps

SuggestedRemedy
Change "Physical coding sublayer" to "Physical Coding Sublayer"

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

Cl **40** *SC* **40.1.3.1** *P* **40-3** *L* **40-44** # **29**

Steve Pryor Compaq

Comment Type **E** *Comment Status* **R**

The use of 8B1Q4 and 4D-PAM5 are inconsistent. These terms are essential for explanation of how our encoding works. There has been confusion distinguishing between data and signal encoding. This paragraph uses 4D-PAM5 when it should be using 8B1Q4 to describe the data encoding.

SuggestedRemedy

Change "The process of converting data bits to ...quinary symbols." to "The process of converting data bits to code-groups is called 8B1Q4, which refers to 8 bits converted to a quinary quartet that is transmitted during one symbol period. The quinary quartet is converted for transmission using a 4D-PAM5 signal encoding, which refers to four amplitude modulated signals using five voltage levels.

Proposed Response *Response Status* **C**

REJECT.
After discussion of this issue in November the group voted to consistently use 4D-PAM5 to refer to the encoding technique. Steve was not present at this meeting and it is possible that the subtle destinction between data and signal encoding was lost. Since Steve cannot attend the December interim, we suggest this comment be submitted at sponsor ballot so it can be considered by the group at the January interim.

Cl **40** *SC* **40.1.3.2** *P* **40-6** *L* **12** # **51**

Brad Booth Jato Technologies

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

change title to caps

SuggestedRemedy

Change "Physical medium attachment" to "Physical Medium Attachment"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.1.3.2** *P* **40-6** *L* **19** # **33**

Steve Pryor Compaq

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

When describing the PMA signal encoding function of generating five level PAM, the term, 4D-PAM5, should be mentioned. This creates an equivalence to using the 8B1Q4 term when describing the PCS data encoding function.

SuggestedRemedy

Change "as described in 40.4.3.2. The receivers are" to "as described in 40.4.3.2. This signal encoding technique is referred to as 4D-PAM5. The receivers are"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.1.4** *P* **40-6** *L* **45** # **6**

Thomas Joergensen Intel

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

BI-DB should be BI_DB

SuggestedRemedy

Replace with BI_DB

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.1.4** *P* **40-6** *L* **47** # **7**

Thomas Joergensen Intel

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

The reference to blind start-up should be replaced with just "start-up" as we have no other references to blind start-up.

SuggestedRemedy

Replace "blind start-up" with "start-up"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.1.5** *P* **40-7** *L* # **138**

Brad Booth Level One

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

compatibility considerations should be in 40.9

SuggestedRemedy

remove 40.1.5 and renumber 40.1.6 to 40.1.5

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **40** *SC* **40.10.2.2** *P* **40-95** *L* **35** # **16**

Thomas Joergensen Intel

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

Reference to MII should be GMII

SuggestedRemedy

Change reference to GMII.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.12.1** *P* **40-98** *L* # **133**

Brad Booth Level One

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

subclause incorrectly defined and associated text is incomplete... also, the GMII is not an exposed interface.

SuggestedRemedy

Change to be:
"40.12.1 MDI to GMII delay contraints

Every 1000BASE-T PHY associated with a GMII shall comply with the bit time delay constraints specified in Table 40-13 for half duplex operation and Table 40-14 for full duplex operation. These figures apply for all 1000BASE-T PHYs. For any given implementation, the assertion and deassertion delays on CRS shall be equal."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.12.1** *P* **40-98** *L* **13-15** # **152**

Bob Noseworthy UNH IOL

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

The term "Exposed GMII" is undefined. Suggest similar wording as in 36.5.1

SuggestedRemedy

Change 40.12.1 to
"40.12.1 MDI to GMII delay contraints"
Change first sentence to:
"Every 1000BASE-T PHY associated with a GMII shall comply with the bit delay constraints specified in tables 40-13 and 40-14."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.12.1** *P* **40-98** *L* **51** # **151**

Bob Noseworthy UNH IOL

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

The title for Table 40-14 should be on the same page as the table

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.12.2** *P* **40-98** *L* # **134**

Brad Booth Level One

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

subclause incorrectly defined and associated text is incomplete... also, the GMII is not an exposed interface.

SuggestedRemedy

Change to be:
"40.12.2 DTE delay constraints (half duplex mode)

Every DTE with a 1000BASE-T PHY shall comply with the bit time delay constraints specified in Table 40-15 for half duplex operation. These figures apply for all 1000BASE-T PHYs."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.12.2** *P* **40-99** *L* **13-15** # **153**

Bob Noseworthy UNH IOL

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

The term "Unexposed GMII" is undefined. Suggest similar wording as in 36.5.2

SuggestedRemedy

Change 40.12.2 to
"40.12.2 DTE delay contraints"
Change first sentence to:
"Every DTE with a 1000BASE-T PHY shall comply with the bit delay constraints specified in table 40-15."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.13** *P* *L* # **141**

Brad Booth Level One

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

PICS feature and value/comment fields need to be cleaned up.

SuggestedRemedy

perform cleanup

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **40** *SC* **40.13** *P* *L* # **142**

Brad Booth Level One

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

PICS feature fields should use simpler explanations.

SuggestedRemedy

simplify feature text

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Text is extracted directly from the standard. We will review feature text.

Cl **40** *SC* **40.13.2** *P* **40-101** *L* # **136**

Brad Booth Level One

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

need re-write of capabilities and options

SuggestedRemedy

for *GMII, feature should read "PHY associated with GMII" and remove comment

remove *PCS, *PMA and ANs... they are all required

add *DTE, feature "DTE with PHY not associated with GMII", subclause 40.12.2, optional

add *FDX, feature "PHY supports full duplex mode", subclause 40.12, optional

add *HDX, feature "PHY supports half duplex mode", subclause 40.12, optional

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **40** *SC* **40.2** *P* **40-8** *L* **all** # **52**

Brad Booth Jato Technologies

Comment Type **E** *Comment Status* **R**

The description provided does not describe the 1000BASE-T service primitives and interfaces. It describes the PMA service interface; therefore, this section should be moved into the PMA portion of the document.

SuggestedRemedy

Change "40.2 1000BASE_T Service Primitives and Interfaces" to "40.3.1 PMA Service Interface"

Change top of page 40-15 to read:
"40.2 Physical Coding Sublayer (PCS)

40.2.1 PCS Service Interface (GMII)

The PCS Service Interface allows the 1000BASE-T PCS to transfer information to and from a PCS client. PCS clients include the MAC (via the Reconciliation sublayer) and repeater. The PCS Interface is precisely defined as the Gigabit Media Independent Interface (GMII) in Clause 35.

In this clause, the setting of GMII variables to TRUE or FALSE is equivalent, respectively, to asserting or de-asserting them as specified in Clause 35."

Renumber 40.3 PCS functional specifications to 40.2.2.

Change "40.4 PMA functional specifications and service interface" to "40.3 Physical Medium Attachment (PMA) sublayer"

Change "40.4.1 PMA functional specifications" to "40.3.2 PMA functional requirements"

Renumber all subclauses and figures to correspond to the change.

Proposed Response *Response Status* **C**

REJECT.
This subclause was created as the result of direction from teh Task Force at the September interim to create a subclause that list all signals passing across interfaces. We believe this subclause whould be in a consistent place in this and all future clauses. This is best accomplised by providing it with an unique identify.

Cl **40** *SC* **40.2.4** *P* **40-10** *L* # **124**

Brad Booth Level One

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

could reference text used in clause 28.

SuggestedRemedy

change to read:
"This primitive allows the Auto-Negotiation algorithm to enable and disable operation of the PMA sublayer as specified in clause 28.2.6.2."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.2.4.2** *P* **40-10** *L* **30** # **92**

Brad Booth Level One

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

No specification as to what the nominal rate PMA_UNITDATA.indicate messages are generated.

SuggestedRemedy

Add sentence to the end of paragraph: "The nominal rate of the PMA_UNITDATA.indicate primitive is 125 MHz, as governed by the recovered clock."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.2.5** *P* **40-11** *L* # **125**

Brad Booth Level One

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

could reference text used in clause 28.

SuggestedRemedy

change to read:
"This primitive is generated by the PMA sublayer to indicate the status of the underlying medium as specified in clause 28.2.6.1."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.2.5.1** *P* **40-11** *L* **19** # **8**

Thomas Joergensen Intel

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

The PMA_LINK.indicate can only have two values: FAIL or OK.
Line 19 suggest three values:FAIL, READY or OK.

SuggestedRemedy

Replace "..one of three values:FAIL, READY, or OK." with
"..one of two values: FAIL or OK."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.2.5.1** *P* **40-11** *L* **25** # **122**

Brad Booth Level One

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

missing description of READY

SuggestedRemedy

add description of READY as per clause 28.2.6.1.1

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.2.6.2** *P* **40-14** *L* **42-44** # **109**

Rich Seifert Networks & Communic

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

The subclause states that the PCS Receive generates a primitive on the basis of signals received at the MDI. The PCS does not have access to the MDI, and therefore cannot generate a primitive based on such signals.

The same problem exists in 40.2.8.2 (p40-15) regarding PMA_REMRXSTATUS.request.

SuggestedRemedy

Change the MDI references to the signals which the PCS (and PMA) really does use to generate the indicated primitive. I understand that the signals seen are *indirectly* dependent on the MDI, but them so is EVERY signal on the channel!

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
We will consult with Mr. Seifert and modify the text to more accurately desribe the generation of these signals. This is deemed an editorial change.

Cl **40** *SC* **40.3.1.2** *P* **40-16** *L* **20** # **9**

Thomas Joergensen Intel

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

TXD should be TXD<7:0>

SuggestedRemedy

Replace TXD with TXD<7:0>

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.2** *P* **40-31** *L* **42-45** # **57**

Brad Booth Jato Technologies

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

subclause "40.3.2 PCS - GMII interface" is not required.

SuggestedRemedy

delete

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **40** *SC* **40.3.4.1** *P* **40-35** *L* **30** # **155**

Brad B ooth

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

xmt_err is not defined for use in the receive state machine

SuggestedRemedy

change description to read:
"... during normal data transmission or reception, as specified..."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.4.3** *P* **40-36** *L* **5-7** # **58**

Brad Booth Jato Technologies

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

expand definition of symb_timer

SuggestedRemedy

change to read:
symb_timer

A continuous free-running timer.

Values: The condition symb_timer_done becomes true upon timer expiration.

Restart when: Immediately after expiration; timer restart resets the condition symb_timer_done.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.4.4** *P* **40-36** *L* # **93**

Brad Booth Level One

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

need references for where the messages are described

SuggestedRemedy

add reference to PMA_UNITDATA.indicate and PMA_UNITDATA.request that refers them to the subclause that describes them

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.5** *P* **40-37** *L* # **63**

Brad Booth Jato Technologies

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

.indicate messages are not required if the messages are status or control messages

SuggestedRemedy

change "PMA_LINK.indicate(NOT_OK)" to "link_status = FAIL" or "link_status != OK"

change "PMA_TXMODE.indicate(SEND_N)" to "tx_mode = SEND_N"

change "PMA_TXMODE.indicate(!SEND_N)" to "tx_mode != SEND_N"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.5** *P* **40-38** *L* **20** # **62**

Brad Booth Jato Technologies

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

DATA cannot be assigned to tx_symb_vector as DATA makes no representation of the encoding required.

SuggestedRemedy

In TRANSMIT DATA state, change "tx_symb_vector <= DATA" to "tx_symb_vector <= ENCODE(TXD<7:0>)"

Define in the Functions the following:

"ENCODE()
In the PCS Transmit process, this function takes as its argument GMII TXD<7:0> and returns the corresponding tx_symb_vector. ENCODE follows the rules outlined in 40.2.3.3.5."

Note: 40.2.3.3.5 is the new reference based upon previous comment.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.5** *P* **40-39** *L* # **67**

Brad Booth Jato Technologies

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

Exit transition out of RECEIVE is wrong. The ELSE exit transition should be assigned to the transition to DATA ERROR. The transition to PREMATURE END should be based on idles. Otherwise, there can be no transition to PREMATURE END.

SuggestedRemedy

change transition from RECEIVE to PREMATURE END to be "check_end=FALSE * check_idle=TRUE"

change transition from RECEIVE to DATA ERROR to be "ELSE"

change transition from PREMATURE END to IDLE to be "PUDI"

Proposed Response *Response Status* **W**

Withdrawn by Mr. Booth

Cl **40** *SC* **40.3.5** *P* **40-39** *L* # **66**

Brad Booth Jato Technologies

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

Transition out of NON-IDLE DETECT using PUDI and RXn-1 could be confusing. PUDI is used to shift RXn to RXn-1, and RXn+1 to RXn. It is also used in the state transition. If it is used for the transition before the data is shifted, the state machine will always transition to BAD SSD.

SuggestedRemedy

remove transition from NON-IDLE DETECT to BAD SSD

change transition from NON-IDLE DETECT to CONFIRM SSD2 VECTOR to be "PUDI"

change transition from CONFIRM SSD2 VECTOR to BAD SSD to be "(RXn-1)!=SSD1 + (RXn)!=SSD2"

change transition from CONFIRM SSD2 VECTOR to SSD1 VECTOR to be "(RXn-1)=SSD1 * (RXn)=SSD2"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.5** *P* **40-39** *L* # **65**

Brad Booth Jato Technologies

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

Entry into LINK FAILED state takes the state machine immediately to IDLE without waiting for PUDI. Entry to LINK FAILED state sets receiving to FALSE which causes the condition for entry into IDLE to be met, so the state machine transitions immediately to IDLE.

SuggestedRemedy

change entry to IDLE from "pcs_reset=ON + (PMA_RXSTATUS.indicate(NOT_OK) + link_status=FAIL) * receiving=FALSE" to "pcs_reset=ON"

change entry to LINK FAILED from "(PMA_RXSTATUS.indicate(NOT_OK) + link_status=FAIL) * receiving=TRUE" to "(loc_rcvr_status=NOT_OK + link_status=FAIL) * PUDI"

change actions inside LINK FAILED state to:
IF receiving=TRUE
THEN
receiving <= FALSE
RX_ER <= TRUE
ELSE
RX_ER <= FALSE
RX_DV <= FALSE

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.5** *P* **40-39** *L* # **68**

Brad Booth — Jato Technologies

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

Timing issue with using check_idle and PUDI in transition statement.

SuggestedRemedy

add state after BAD SSD called WAIT FOR IDLE, transition from BAD SSD to WAIT FOR IDLE is "check_idle=TRUE", transition from WAIT FOR IDLE to IDLE is "PUDI"

Proposed Response *Response Status* **W**

Withdrawn by Mr. Booth

Cl **40** *SC* **40.3.5** *P* **40-39** *L* **42** # **64**

Brad Booth — Jato Technologies

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

DATA cannot be assigned to RXD<7:0> because it represents the set of all valid data.

SuggestedRemedy

change "RXD<7:0> <= DATA" to "RXD<7:0> <= DECODE(RXn-1)"

define in the Functions:

"DECODE
In the PCS Receive process, this function takes as its argument the value of rx_symb_vector and returns the corresponding GMII RXD<7:0> octet. DECODE follows the rules outlined in 40.2.3.4.1."

Note: 40.2.3.4.1 refers to the renumber due to a previous comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **40** *SC* **40.4.3** *P* **40-45** *L* **28** # **70**

Brad Booth — Level One

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

Change in description is needed.

SuggestedRemedy

change the header "PMA interface messages" to "MDI" and remove the paragraph that starts with "The messages between..."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.4.1** *P* **40-46** *L* # **71**

Brad Booth — Level One

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

Unnecessary to call link_control and link_status, link_control_[1GigT] and link_status_[1GigT]

SuggestedRemedy

remove "_[1GigT]"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.4.1** *P* **40-46** *L* **30** # **143**

Bob Noseworthy — UNH IOL

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

When the "link_status_[1GigT]" variable was added to D4.2 (see comment #78 against D4.1), it appears to have mistakenly overwritten the original "link_status" variable, which should not have been removed.

SuggestedRemedy

Restore the original "link_status" variable, with the reference to clause 28 removed (as the link_status_[1GigT] variable communicates to clause 28)
"
link_status
The link status parameter as communicated by the Link Monitor function through the PMA_LINK.indicate primitive.
Values: FAIL: No valid link established.
OK: The Link Monitor function indicates that a valid 1000BASE-T link is established. Reliable reception of signals transmitted from the remote PHY is possible.
"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.4.1** *P* **40-46** *L* **34** # **123**

Brad Booth — Level One

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

missing description of READY

SuggestedRemedy

add description of READY as per clause 28.2.6.1.1

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.5.1** *P* **40-48** *L* **36** # **74**

Brad Booth Level One

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

Note not required.

SuggestedRemedy

remove

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.5** *P* **40-50** *L* **3** # **95**

Brad Booth Level One

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

GMII doesn't provide management functions

SuggestedRemedy

delete "the Gigabit Media Independent Interface (Clause 35),"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.5.2** *P* **40-55** *L* **16** # **10**

Thomas Joergensen Intel

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

mr_parallel_detect_fault does not point to a box

SuggestedRemedy

Move mr_parallel_detect_fault so that it point to the Register 6 box

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.5.2** *P* **40-67** *L* # **154**

Colin Mick

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

Based on discussions with Bob Noseworthy, John Creigh, Gary Huff, Andy Costallano, Mark Feuerstraeter and Tam Ross, it is clear that the optional add-on interface to support sending additional Next pages (that is, pages in addition to those required for proper configuration for 1000BASE-T operation) is unclear.

1. If no additional Next Pages are to be sent, Auto-Negotiation as defined in Clause 28, is sufficient to support proper configuration for 1000BASE-T operation.

2. The add-on state machines provide only any example of an implementation that could be used to support sending additional next pages.

SuggestedRemedy

Follow the recommendations made by Bob Noseworthy, John Creigh, Gary Huff, Andy Costallano, Mark Feuerstraeter and Tam Ross. This would entail moving the Add-On State Machines to an informative annex and added text to reflect the content of my comment to 40.5.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.5.4.1** *P* **40-69** *L* **40-50** # **115**

Rich Seifert Networks & Communic

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

My ballot comment (from the last ballots) on this same section has not been resolved. It is still unclear what the relationship is between Clause 28 and this "add on". Clause 28 already handles the Base Page messaging, yet this paragraph says that the add-on is responsible for sending the Base Page and next pages. This implies that this is a *replacement* for clause 28, and not an add-on. Otherwise, the Base Page would be sent twice.

SuggestedRemedy

Clarify the relationship between the add-on and the state machine in clause 28.

Proposed Response *Response Status* **U**

ACCEPT.
This has been accomplished as per the solution defined in our response to your comment #102 which is reproduced below.

The solution to Mr. Noseworthy's concerns, which includes no technical changes to the standard, moves the Add-On state machines described in 40.5 to an informative annex. Clarifying text has been inserted into 40.5 to explain that:
a) this solution is a suggested way of implementing Auto-Negotiation so that it will support the transmission of Next Pages in addition to those Next Pages required to configure 1000BASE-T operation and
b) implementors who do not wish to send (or support the sending) of Next Pages (in addition to those required for 1000BASE-T configuration) can use the standard Auto-Negotiation functions defined in Clause 28.

We believe this solution resolves all the issues you raised with this comment. Since the solution entails no technical changes to the draft, it is deemed an editorial change.

Cl **40** *SC* **40.5.4.2** *P* **40-59** *L* **29** # **14**

Thomas Joergensen Intel

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

Text do not fit inside box.

SuggestedRemedy

Make box bigger to fit text.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.5.5** *P* **40-60** *L* **17** # **98**

Brad Booth Level One

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

missing a space

SuggestedRemedy

change to read "... Table 40-5 is..."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.6.1.1.1** *P* **40-62** *L* **14** # **5**

Robert Campbell Lucent

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

Wordsmith `connectorized with connectors'.

SuggestedRemedy

Change `connectorized' to `terminated'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.6.1.1.1** *P* **40-63** *L* **9** # **15**

Thomas Joergensen Intel

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

In Table 40-6 the cable segments are called 1, 2, 3 and 4.
Everywhere else in the text the segments are called C1, C2, C3 and C4

SuggestedRemedy

Name the segments C1, C2, C3 and C4 in table 40-6.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **40** *SC* **40.6.1.2.4** *P* **40-78** *L* **15** # **99**

Brad Booth Level One

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

is there a resolution for the editor's note so that it can be removed prior to sponsor ballot?

SuggestedRemedy

get resolution prior to sponsor ballot

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **40** *SC* **40.6.1.2.5** *P* **40-94** *L* **24** # **60**

John Creigh Broadcom

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

The text has been changed with the removal of the shall which leaves a grammatically incorrect statement that really should have a shall on it.

SuggestedRemedy

Hopefully this is an editorial error. If so then the text should be corrected back to the original form.

Proposed Response *Response Status* **C**

ACCEPT.
The editorial change has been cleaned up.

Cl **40** *SC* **40.6.1.2.5** *P* **40-94** *L* **33** # **61**

John Creigh Broadcom

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

The text has been changed with the removal of the shall which leaves a grammatically incorrect statement that really should have a shall on it.

SuggestedRemedy

Hopefully this is an editorial error. If so then the text should be corrected back to the original form.

Proposed Response *Response Status* **C**

ACCEPT.
The editorial change has been cleaned up.

Cl **40** *SC* **40.6.1.3.1** *P* **40-95** *L* **40-50** # **116**

Rich Seifert Networks & Communic

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

The resolution to my earlier comment regarding BER and frame length is incorrect. The stated BER and FLR still do not correspond. Rather than use "1000 bits" (as recommended in my earlier comment), you used "100 octets", which is not the same thing. The same comment applies to 40.6.1.3.4.

SuggestedRemedy

Either change "100 octets" to "1000 bits" or to "125 octets".

Proposed Response *Response Status* **U**

REJECT.

The values specified are not present as being equivalent to the BER but, rather, as appropriate responses to specific test situations.

This issue was discussed at length in the Task Force meetings at the November 98 plenary. The commentor was in the room, presented this issue to the group, and participated in the resulting discussion. The values shown in draft 4.2 represent the collective decision of those participating in this discussion.

Cl **40** *SC* **40.6.1.3.3** *P* **40-95** *L* **24** # **117**

Rich Seifert Networks & Communic

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

There is no verb in this sentence.

SuggestedRemedy

Change to "The clamp should be located ...".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.6.1.3.3** *P* **40-96** *L* **1** # **59**

John Creigh Broadcom

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

The values voted on at the Nov. meeting were not correctly inserted in the text. The correct voltages are 1.0 Vrms (1.414 Vpeak).

SuggestedRemedy

Put the correct numbers in.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.7.2** *P* **40-86** *L* **25** # **121**

Tam Ross Level One Communica

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

I thought we had already resolved this at a previous interim, but the sentence: "The transmission parameters contained in this section are specified to ensure a Category 5 link segment of at least 100 meters will provide a reliable medium" clearly states that links of less than 100 meters need not work. I don't think this is what anyone had in mind.

SuggestedRemedy

Change "of at least 100 meters"
to "of up to at least 100 meters"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.7.2.3** *P* **40-101** *L* **18-19** # **120**

Rich Seifert Networks & Communic

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

My comment from the earlier ballot regarding this section has not been resolved. The problem is that it is not clear that some existing "Cat 5 certified" cable plants may not meet the requirements of 1000BASE-T. The agreement of the Task Force was to put some wording "right up front" (40.1) indicating this fact. This did not happen in Draft 4.2.

SuggestedRemedy

Add the agreed-upon text, or eliminate the additional return loss requirement, or modify the 1000BASE-T signaling system to operate properly with all existing Cat-5 certified cable plants.

Proposed Response *Response Status* **U**

REJECT.
This issue was discussed at length in the Task Force meetings conducted as part of the November 98 802 Plenary. This text--and other text dealing with the cable standards used to specify 1000BASE-T links--was referred to a cable subgroup for tuning. The text shown in D4.2 was prepared by this cable subgroup and was approved by the Task Force in formal vote on November 11. (All changes were subsequently approved by the 802.3 Working Group in a formal vote on Nov. 12.)

That said, 802.3ab precisely follows the precedent established in previous 802.3 clauses where additional performance parameters have been specified to augment those provided by ISO/IEC 11801 and ANSI/TIA/EIA-568. (For example, see 100BASE-T4.) This has been done by specifying the relevant cabling standard and specifying additional requirements in the 802.3 clause. In this case, 802.3ab has worked very closely with TIA TR 41.8.1 to ensure that the test specifications developed by 802.3ab are included in relevant TIA documents (e.g., ANSI/TIA/EIA TSB-95, which is currently in final balloting and addenda to ANSI/TIA/EIA-568-A:1995.)

Cl **40** *SC* **40.7.2.3** *P* **40-101** *L* **18-19** # **119**

Rich Seifert Networks & Communic

Comment Type **E** *Comment Status* **R**

My comment from the earlier ballot regarding this section has not been resolved. The problem is that it is not clear that some existing "Cat 5 certified" cable plants may not meet the requirements of 1000BASE-T. The agreement of the Task Force was to put some wording "right up front" (40.1) indicating this fact. This did not happen in Draft 4.2.

SuggestedRemedy

Add the agreed-upon text, or eliminate the additional return loss requirement, or modify the 1000BASE-T signaling system to operate properly with all existing Cat-5 certified cable plants.

Proposed Response *Response Status* **C**

This comment replaced by 120

Cl **40** *SC* **40.7.3.2.1** *P* **40-87** *L* **44** # **13**

Robert Campbell Lucent

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

Source of far-end crosstalk is at near end rather than far end.

SuggestedRemedy

Change `far end' to `near end'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.8.2** *P* **40-106** *L* **12** # **118**

Rich Seifert Networks & Communic

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

In the list, the phrase "independent of the value of TX_EN" is really a qualifier on "defined in 22.2.4.1.5", and not a separate entity.

SuggestedRemedy

Delete the comma between "22.2.4.1.5." and "independent".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.8.3** *P* **40-91** *L* # **129**

Brad Booth Level One

Comment Type **E** *Comment Status* **R**

Description of auto-crossover should be part of a PMD sublayer description instead of an MDI description. I believe that state machines cannot be implemented in the MDI, only within a PHY sublayer.

SuggestedRemedy

Move state machine and associated text into a seperate subclause prior to the MDI specification.

Proposed Response *Response Status* **C**

REJECT.
Duplicate of 128

Cl **40** *SC* **40.8.3** *P* **40-91** *L* # **128**

Brad Booth Level One

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

Description of auto-crossover should be part of a PMD sublayer description instead of an MDI description. I believe that state machines cannot be implemented in the MDI, only within a PHY sublayer.

SuggestedRemedy

Move state machine and associated text into a seperate subclause prior to the MDI specification.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
We will check with other standards experts to determine if it is appropriate to have a state machine in the MDI section. If there is some reason that it is not appropriate, then we will follow the proposed remedy.

Cl **40** *SC* **40.8.3.1.2** *P* **40-92** *L* # **127**

Brad Booth Level One

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

linkpulse is described, yet there is no indication how linkpulse is passed from the auto-negotiation algorithm to the automatic mdi/mdi-x state machine

SuggestedRemedy

add message to clause 28 that permits the passing of this variable

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.8.3.1.2** *P* **40-92** *L* **29** # **126**

Brad Booth Level One

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

description of variable is different than the value description

SuggestedRemedy

select which is correct "link_status=READY" or "link_status!=FAIL" and use selection

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.8.3.1.3** *P* **40-92** *L* **51** # **34**

Erik Dickens Texas Instruments

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

Incorrect clause reference 14.2.3.3

SuggestedRemedy

Correct clause reference to 14.2.3.2

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.8.3.1.3** *P* **40-93** *L* # **131**

Brad Booth Level One

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

POWER_ON and RESET are undefined in state machine variable list

SuggestedRemedy

add definitions

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.8.3.1.3** *P* **40-93** *L* # **130**

Brad Booth Level One

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

format of timer description is inconsistent with that used in 40.3.4.3

SuggestedRemedy

Change to read:
"A_timer

An asynchronous (to the Auto-Crossover State Machine) free running timer which provides for a relatively arbitrary reset of the state machine to its initial state. This timer is used to reduce the probability of a lock-up condition where both nodes have an identical seed initialization at the same point in time.

Values: The condition A_timer_done becomes true upon timer expiration.

Duration: This timer shall have a period of 1.3s +/-25%.

Initialization of A_timer is implementation specific."

"sample_timer

This timer provides a long enough sampling window to ensure detection of Link Pulses or link_status, if they exist at the receiver.

Values: The condition sample_timer_done becomes true upon timer expiration.

Duration: This timer shall have a period of 62 +/-2ms."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.9** *P* **40-94** *L* # **132**

Brad Booth Level One

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

subclause contains irrelevant information

SuggestedRemedy

change subclause to be "40.9 Compatibility considerations"

remove first and second paragraphs

move third paragraph into the auto-crossover description in 40.8.3

add new paragraph:
"There is no requirement for a compliant device to implement or expose any of the interfaces specified for the PCS or PMA. Implementations of a GMII shall comply with the requirements as specified in Clause 35."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **40** *SC* **40B** *P* **40-127** *L* **1** # **11**

Robert Campbell Lucent

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

Use of `@' symbol.

SuggestedRemedy

Change `@' to symbol for approximate.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40B** *P* **40-127** *L* **11** # **12**

Robert Campbell Lucent

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

Is Clause 40B.3 the correct number?

SuggestedRemedy

Unable to locate 40B.1 and 40B.2, therfore 40B.3 should be changed to 40B.1.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40B.3** *P* **40-127** *L* **48** # **3**

Robert Campbell Lucent

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

The `0.2-0.3 meters' dimension is not required.

SuggestedRemedy

Remove the `0.2-0.3 meters' dimension.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40B.3** *P* **40-128** *L* **14** # **4**

Robert Campbell Lucent

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

Hybrid whould be balun.

SuggestedRemedy

Change `hybrid' to `balun'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40B.3** *P* **40-128** *L* **22** # **2**

Robert Campbell Lucent

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

Change value in table for differential voltage to agree with motion passed at the plenary meeting. The value should be equal to 20 mVpp at 30 MHz.

SuggestedRemedy

Change `2.25 + 17.5(f/30) mVpp' to `2.2 + 17.8(f/30) mVpp'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40B.3** *P* **40-128** *L* **32** # **1**

Robert Campbell Lucent

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

Change value to agree with previously specified value.

SuggestedRemedy

Change `0.075' to `7.5'. to agree with previously specified value.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40CH Annex 28B** *P* **28B-1** *L* **42** # **145**

Bob Noseworthy UNH IOL

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

sentance ends with a comma "resolution,"

SuggestedRemedy

change to "resolution."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40CH Annex 28B** *P* **28B-1** *L* **42** # **146**

Bob Noseworthy UNH IOL

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

sentence ends with a comma "resolution,"

SuggestedRemedy

change to "resolution."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40CH Annex 28B** *P* **28B-2** *L* **23** # **148**

Bob Noseworthy UNH IOL

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

With the addition of bit A6 and Table 28B-3, the statement is incomplete:
"The PAUSE function shall be enabled if both the Local Device and the Link Partner have bit A5 set and the Highest Common Denominator is a full duplex technology."

SuggestedRemedy

Change quoted sentence (line 23) to read:
"The PAUSE function shall be enabled according to Table 28B-3 only if the Highest Common Denominator is a full duplex technology."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40CH Annex 28B** *P* **28B-2** *L* **24-28** # **147**
Bob Noseworthy UNH IOL

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

Statements are contradictory.
"There is no priority resolution associated with the PAUSE operation."
"Priority resolution for pause priority shall be resolved as specified by table 28B-3."

SuggestedRemedy

Delete this sentence (last sentence of line 24)
"There is no priority resolution associated with the PAUSE operation."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40CH.2** *P* **28B-4** *L* **1-53** # **144**
Bob Noseworthy UNH IOL

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

Page seems to be a remnant of D4.1 and should be removed.
The text listed on this page is correctly listed on pages 28B-2 and 28C-1

SuggestedRemedy

Remove page 28B-4

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **F40-10a** *P* **40-39** *L* # **156**
Brad Booth

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

check_idle has no associated value

SuggestedRemedy

change two instances of "PUDI * check_idle" to "PUDI * check_idle=TRUE"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Fig 40-10a** *P* **40-39** *L* # **157**
Brad Booth

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

inconsistent format of hexadecimal numbers, follow what is used in Figure 40-9

SuggestedRemedy

change instances of "0x"' to "0x"... remove the '

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Fig 40-15** *P* **40-46** *L* **12** # **53**
John Creigh Broadcom

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

Missing label on transition from "SSD1 Vector" to "SSD2 Vector, Error".

SuggestedRemedy

Add "STD * tx_error=TRUE" to transition.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Fig 40-22** *P* **40-53** *L* **29** # **54**
John Creigh Broadcom

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

Extra dot on config line near PMA Receive

SuggestedRemedy

Remove extra dot.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Fig 40-23** *P* **40-60** *L* **18** # **55**
John Creigh Broadcom

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

Extra left parenthesis before "OK" on loc_rcvr_status=(OK + line.

SuggestedRemedy

Remove extra left parenthesis.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Fig 40-5** *P* **40-7** *L* **42-44** # **108**

Rich Seifert Networks & Communic

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

The figure shows the signals to Cl 28 Auto-Negotiation as being part of the MDI. This is incorrect.

Also, one net has two names: "PMA_TXENSTATUS.request(tx_enable)" and "tx_enable".

SuggestedRemedy

Separate the Clause 28 signals into a separate grouping that is obviously different from the MDI.

Delete the "tx_enable" signal name.

Proposed Response *Response Status* **U**

ACCEPT.

You are referring to the diagram showing the division of responsibility between the 1000BASE-T PCS and PMA. The problem you cite is that Auto-Negotiation is shown implicitly rather than explicitly. We will revise Figure 40-5 to insert a box showing Auto-Negotiation between the PMA and the MDI so that BI_DA:BI_DD are shown passing from the PMA through Auto-Negotiation to the MDI. PMA.Link.request and PMA.LINK.indicate will be shown as passing from the PLA to Auto-Negotiation.

This is deemed an editorial change. As such, we will replicate this change in the PMA Reference Diagram.

Cl **40** *SC* **Figure 40-13** *P* **40-42** *L* # **69**

Brad Booth Level One

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

Figure needs to be corrected.

SuggestedRemedy

change "PMA_CONFIG.indicate(config)" to "config"
change "PMA_TXMODE.indicate(tx_mode)" to "tx_mode"
change "PMA_TXENSTATUS.request(tx_enable)" to "TX_EN"
change "PMA_REMRXSTATUS.request(rem_rcvr_status)" to "rem_rcvr_status"
change "PMA_LINK.indicate(link_status)" to "link_status"
change "PMA_RXSTATUS.indicate(loc_rcvr_status)" to "loc_rcvr_status"

add arrow into PHY CONTROL from the PMA Service Interface and name it "scr_status"

remove arrow "PMA_UNITDATA.request(tx_symb_vector)" going into PMA RECEIVE

connect "Clause 28: PMA_LINK.indicate(link_status)" arrow to the "link_status" arrow

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **40** *SC* **Figure 40-13** *P* **40-44** *L* **-51** # **112**

Rich Seifert Networks & Communic

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

The signal "PMA_TXMODE.indicate(!SEND_N) is not defined in the interface messages for this state diagram.

SuggestedRemedy

Add the primitive to the message definitions.

Proposed Response *Response Status* **U**

ACCEPT.
This will be corrected. The correction is deemed an editorial change,

Cl **40** *SC* **Figure 40-14** *P* **40-48** *L* # **72**

Brad Booth Level One

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

full message names not required if messages are not time-sensitive

SuggestedRemedy

change "PMA_LINK.request(DISABLE)" to "link_control=DISABLE"
change "PMA_LINK.request(ENABLE)" to "link_control=ENABLE"
change "PMA_SCRSTATUS.request(OK)" to "scr_status=OK"
change "PMA_REMRXSTATUS.request(OK)" to "rem_rcvr_status=OK"
change "PMA_REMRXSTATUS.request(NOT_OK)" to "rem_rcvr_status=NOT_OK"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Figure 40-14** *P* **40-48** *L* # **73**

Brad Booth Level One

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

typo

SuggestedRemedy

change "loc_rcvr_status=(OK" to "loc_rcvr_status=OK"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Figure 40-15** *P* **40-49** *L* # **77**

Brad Booth Level One

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

text at bottom of figure should be made into a note

SuggestedRemedy

change "maxwait_timer is started in..." to "NOTE - The timer maxwait_timer is started in..."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Figure 40-15** *P* **40-49** *L* # **76**

Brad Booth Level One

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

entry condition into LINK DOWN can be simplified

SuggestedRemedy

change "pma_reset=ON + link_control_[1GigT]=DISABLE + link_control_[1GigT]=SCAN_FOR_CARRIER" to "pma_reset=ON + link_control_[1GigT]!=ENABLE"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
We will review the proposed remedy to ensure that it does not represent a technical change. If the proposed remedy results in a technical change, it will not be applied and the commentor will be advised to resubmit the comment at sponsor ballot. If the proposed remedy is deemed to not represent a technical change and is appropriate, the change will be made.

Cl **40** *SC* **Figure 40-15** *P* **40-49** *L* # **75**

Brad Booth Level One

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

use of "_[1GigT]" in state machine is confusing

SuggestedRemedy

remove "_[1GigT]" and add note at the bottom of figure:
"NOTE - The variables link_control and link_status are designated as link_control_[1GigT] and link_status_[1GigT], respectively, by the Auto-Negotiation Arbitration state diagram (Figure 28-16)."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **40** *SC* **Figure 40-22** *P* **40-53** *L* # **114**

Rich Seifert Networks & Communic

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

The lines and arrows on the PMA service interface are misaligned. The arrow indicating the extent of the PMA does not reach the PMA service interface. The word "PMA" is not centered.

SuggestedRemedy

Self explanatory.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Figure 40-22** *P* **40-53** *L* # **113**

Rich Seifert Networks & Communic

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

The signals to Cl 28 Auto-Negotiation are incorrectly grouped with the MDI.

SuggestedRemedy

Move the Clause 28 signals to an interface separate from the MDI.

Proposed Response *Response Status* **U**

ACCEPT.

You are referring to the PMA Reference Diagram. This diagram reproduces approximately half of the diagram showing the division of responsibility between the 1000BASE-T PCS and PMA. This issue you raise here you also addressed with Comment 108.

The problem you cite is that Auto-Negotiation is shown implicitly rather than explicitly. We will revise Figure 40-22 to insert a box showing Auto-Negotiation between the PMA and the MDI so that BI_DA:BI_DD are shown passing from the PMA through Auto-Negotiation to the MDI. PMA.Link.request and PMA.LINK.indicate will be shown as passing from the PLA to Auto-Negotiation.

This is deemed an editorial change. It replicates the change previously made in response to Comment 108.

Cl **40** *SC* **Figure 40-5** *P* **40-15** *L* # **56**

Brad Booth Jato Technologies

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

Figure is incorrect. Figure shows a seperate block for PCS Collision Presence, yet COL is generated by the PCS Transmit. Signal "transmitting" is missing from the figure. Full message primitives are not required for the status or control signals, only for the data signals.

SuggestedRemedy

change "PMA_CONFIG.indicate(config)" to "config"
change "PMA_TXMODE.indicate(tx_mode)" to "tx_mode"
remove "PMA_TXENSTATUS.request(tx_enable)"
change "PMA_LINK.indicate(link_status)" to "link_status"
change "PMA_RXSTATUS.indicate(loc_rcvr_status)" to "loc_rcvr_status"
change "PMA_REMRXSTATUS.request(rem_rcvr_status)" to "rem_rcvr_status"
change "PMA_SCRSTATUS.request(scr_status)" to "scr_status"

remove block "PCS COLLISION PRESENCE"
move COL output to PCS TRANSMIT block
change so that "tx_error" and "tx_enable" only go to PCS TRANSMIT
generate "transmitting" to go from PCS TRANSMIT to PCS CARRIER SENSE
make receiving go to PCS TRANSMIT
remove one of the "config" inputs and draw a line to the other
make TX_EN an output on the PMA SERVICE INTERFACE
remove short arrow at bottom of the diagram

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **40** *SC* **Figure 40-7** *P* **40-17** *L* # **110**

Rich Seifert Networks & Communic

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

Similar to Figure 40-5, this figure shows the Cl 28 Auto-Negotiation signals as part of the MDI.

SuggestedRemedy

Move the Clause 28 signals to an interface separate from the MDI.

Proposed Response *Response Status* **U**

ACCEPT.

This is related to the problem you addressed with Comments 108 and 113. The problem you cite is that Auto-Negotiation is shown implicitly rather than explicitly. We will revise Figure 40-7 to insert a box showing Auto-Negotiation between the PMA and the MDI so that BI_DA:BI_DD are shown passing from the PMA through Auto-Negotiation to the MDI. PMA.Link.request and PMA.LINK.indicate will be shown as passing from the PLA to Auto-Negotiation. In addition, we will extend the MANAGEMENT BOX so that it connects the Auto-Negoriation box in addition to the PCS and PMA boxes.

This is deemed an editorial change.

Cl **40** *SC* **Figure 40-9** *P* **40-38** *L* **50** # **94**

Brad Booth Level One

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

Note is not required because description of PUDR is elsewhere in the text

SuggestedRemedy

delete the note

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Table 40-14** *P* **40-98** *L* # **135**

Brad Booth Level One

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

table heading on seperate page from table

SuggestedRemedy

make sure table and associated heading are on the same page

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Table 40-3** *P* **40-50** *L* **31** # **96**

Brad Booth Level One

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

"1000BASE-)"?

SuggestedRemedy

change to "1000BASE-T)"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Table 40-3** *P* **40-51** *L* **19** # **97**

Brad Booth Level One

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

unnecessary "port"

SuggestedRemedy

change "Multiport device port" to "Multiport device"

Proposed Response *Response Status* **C**

ACCEPT.