Cl **01** *SC* **1.1.2.2 (d)** *P* **01.2** *L* **43-47** # **19**

Rich Seifert Networks and Commu

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

If the GMII is not intended to be an exposed interface (as stated in this subclause), then it cannot really be considered a "compatibility interface". It is not possible to measure compatibility or interoperability on unexposed interfaces.

SuggestedRemedy

I suggest one of the following:

(1) Eliminate this paragraph.

(2) Keep the paragraph, but eliminate the statement that "conformance ... is highly recommended". In addition, if the intent is to present an unexposed, optional interface as a "compatibility interface", then a fifth paragraph should be added identifying the TBI as a compatibility interface. (It is as valid as an interface point as the GMII.)

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.5** *P* **01.7** *L* **19** # **20**

Rich Seifert Networks and Commu

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

Effective Modal Bandwidth is no longer used as a term, hence it needs no abbreviation.

SuggestedRemedy

Eliminate the abbreviation for EMB.

Proposed Response *Response Status* **O**

Cl **04** *SC* **4.2.5** *P* **04.11** *L* **22** # **21**

Rich Seifert Networks and Commu

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

No space between sentences. Term is improperly hyphenated.

SuggestedRemedy

Insert a space between "... steady state." and "Upon request ...".
Eliminate the hyphen breaking up the term "TransmitLinkMgmt".

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.1 (a)** *P* **22.1** *L* **44-45** # **22**

Rich Seifert Networks and Commu

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

There is only one speed for operation of management functions across the MII.

SuggestedRemedy

Clarify the intent of this statement, that MII data transfers can occur at 10 Mb/s or 100 Mb/s, yet the management interface supports 10, 100, and 1000 Mb/s PHYs. I suspect that the best way to do this is to separate the data and management functions into separate subparagraphs.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.1.5** *P* **22.1** *L* **53** # **23**

Rich Seifert Networks and Commu

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

SuggestedRemedy

Insert the word "supported" between "... capabilities for any" and "speed of operation ...".

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.4** *P* **22.2** *L* **10** # **24**

Rich Seifert Networks and Commu

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

"Frames" are defined as data exchanges occurring at the Data Link layer. Clause 1.4 (Definitions) only define "data frames"; there is no such thing as a "management frame" defined there. The term "frame format" is used in this paragraph, but is not the "Frame Format" defined in Clause 3, and is confusing.

SuggestedRemedy

Eliminate the use of the term "management frame". Use "Management exchange" (or a similar term) instead. Use "Management exchange encapsulation" (or similar term) instead of "Management frame".

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.4** *P* **22.2** *L* **20** # **40**

Brad Booth Jato Technologies, Inc

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

Text makes no inference to 10 Mb/s.

SuggestedRemedy

Change sentence to read:
The status and control functions defined here are considered basic and fundamental to 10 Mb/s, 100 Mb/s and 1000 Mb/s PHYs.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.4** *P* **22.2** *L* **22** # **41**

Brad Booth Jato Technologies, Inc

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

Registers 0 and 1 do not select the format for registers 4 through 8. Registers 1 and 15 do it, as they are the only registers that indicate the capabilities of the PHY device.

SuggestedRemedy

Change sentence to read:
The format of these registers is selected by the bit settings of registers 1 and 15.

Proposed Response *Response Status* **O**

Cl **31B** *SC* **31B.3.7** *P* **31B.1** *L* **15** # **39**

howard frazier cisco systems

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

lack of a space in 100 Mb/s.
this should be written consistently in all clauses

SuggestedRemedy

"100Mb/s" should be "100 Mb/s"
The same change should be made on page 31B.1 line 21

Proposed Response *Response Status* **O**

Cl **31B** *SC* **31B.3.7** *P* **31B.1** *L* **15-16, 21-** # **25**

Rich Seifert Networks and Commu

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

SuggestedRemedy

Insert a space between "100" and "Mb/s" (2 places).
Delete the comma after "MII" on line 15-16.
Change "operation" to "operating" on line 21-22.

Proposed Response *Response Status* **O**

Cl **31B** *SC* **31B.3.7** *P* **31B.1** *L* **21** # **38**

howard frazier cisco systems

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

bad tense

SuggestedRemedy

"operation" should be "operating"

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.1.3** *P* **35.2** *L* **36-38** # **26**
Rich Seifert Networks and Commu

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

SuggestedRemedy

Change "... support additional rates.." to "...support additional rates using other interfaces." (2 places)

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.1.4** *P* **35.2** *L* **46-47** # **27**
Rich Seifert Networks and Commu

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

Clause 35 specifies only the GMII, not MII.

SuggestedRemedy

Change to read, "... 10 Mb/s DTEs, the GMII (like the Clause 22 MII) maximizes media independence...".

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.2.1** *P* **35.3** *L* **20-39** # **28**
Rich Seifert Networks and Commu

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

This clause (and the figure 35-2) should be GMII-only.

SuggestedRemedy

Combine the signals TXD <7:4> and TXD <3:0> into a single signal TXD <7:0>.
Combine the signals RXD <7:4> and RXD <3:0> into a single signal RXD <7:0>.
Delete the asterisks currently present on TXD <7:4> and RXD <7:4>, and the associated asterisk note.
Delete the asterisk on GTX_CLK.
Delete the signal TX_CLK, and the double-asterisk note.

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.2.2.1** *P* **35.6** *L* **32-34** # **29**
Rich Seifert Networks and Commu

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

This clause should be GMII-only.

SuggestedRemedy

Delete this subclause.

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.2.2.7** *P* **35.10** *L* **26** # **10**
Brad Booth Jato Technologies, Inc

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

RX_DV in Figure 35-8 is incorrect in its representation of when it can transition from a low to high state. RX_DV can be low for the whole preamble, or it may transition high during any of the preamble bytes as defined in 35.2.2.7. The current waveform diagram shows the RX_DV transitioning from low to high at the start of preamble or during the first two bytes of preamble.

SuggestedRemedy

Change Figure 35-8 to indicate that the RX_DV can transition at the start of preamble or during any byte of preamble. Add SFD to the RXD<7:0> and use that to indicate the RX_DV must be asserted during the SFD.

Proposed Response *Response Status* **W**

Cl **35** *SC* **35.2.2.8** *P* **35.10** *L* **42** # **9**
Brad Booth Jato Technologies, Inc

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

"transfer" should be "transfers"

SuggestedRemedy

change "transfer" to "transfers"

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.2.3.1** *P* **35.15** *L* **22** # **11**

Brad Booth — Jato Technologies, Inc

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

Inconsistency in headers 35.2.3.1, 35.2.3.2, 35.2.3.3, 35.2.3.4 and 35.2.3.5. 35.2.3.3 includes the "<data>" in the header for the text. 35.2.3.4 does the same thing with "<efd>". 35.2.3.1, 35.2.3.2 and 35.2.3.5 include the "<>" text in the first sentence describing variable.

SuggestedRemedy

Change header 35.2.3.1 to read: "35.2.3.1 Inter-frame <inter-frame>". Remove text "<inter-frame>" from line 24 on page 35.15 in sub-clause 35.2.3.1.

Change header 35.2.3.2 to read: "35.2.3.2 Preamble <preamble> and start of frame delimiter <sfd>". Remove text "<preamble>" from line 42 and "<sfd>" from line 48 on page 35.15 in sub-clause 35.2.3.2.

Change header 35.2.3.5 to read: "35.2.3.5 Carrier extension <extend>". Remove text "<extend>" from line 35 on page 35.17 in sub-clause 35.2.3.5.

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.2.3.2.1** *P* **35.16** *L* **2** # **30**

Rich Seifert — Networks and Commu

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

SuggestedRemedy

After "... transmitted serially" add, "from left to right.".

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.4.2** *P* **35.19** *L* **51-52** # **31**

Rich Seifert — Networks and Commu

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

There is a conformance requirement in this sentence that is unmeasurable. No tolerance is specified for the delay matching of the transmission lines. There is no associated PICS for this conformance requirement.

SuggestedRemedy

Either:

(1) Change "shall" to "should", if the matching is not precisely critical.
(2) Include a tolerance, measurement method, and PICS entry if the matching *is* critical, or
(3) Delete the last sentence of this paragraph.

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.4.3** *P* **35.22** *L* **38** # **12**

Brad Booth — Jato Technologies, Inc

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

Repetition of words in sentence.

SuggestedRemedy

First sentence should read:
"Clock Skew rate is the instantaneous value of the slope of the clock potential with respect to time (dV/dt), not an average value over the entire rise or fall time interval."

Proposed Response *Response Status* **O**

Cl **35** *SC* **35.4.3** *P* **35.23** *L* **21** # **13**

Brad Booth — Jato Technologies, Inc

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

Parameter notes are incorrect for tSETUP and tHOLD, DRIVER and RCVR, because both notes do not apply for DRIVER and RCVR. Note "a" only applies to RCVR, and note "b" only applies to DRIVER. This applies to both Table 35-9 and Table 35-10.

SuggestedRemedy

tSETUP(DRIVER) and tHOLD(DRIVER) descriptions should only reference note "b".
tSETUP(RCVR) and tHOLD(RCVR) descriptions should only reference note "a".

Change in Table 35-9 and 35-10.

Proposed Response *Response Status* **O**

Cl **36** *SC* **36.2.1** *P* **36.5** *L* **5-6** # **1**

Howie Johnson — Plaintree Systems Inc.

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

Comment originally submitted by Scott Mason. The comment was withdrawn by the commentor from the D3.3 balloting. The chief editor has promised Scott that he will submit this comment on Scott's behalf during the sponsor ballot:

Clause 36 is inconsistent in its description of the PCS client. At times the client is called: MAC, reconciliation sub-layer, GMII, repeater, PCS client, or combinations of these such as: MAC via reconciliation sublayer and GMII.

SuggestedRemedy

Correct the following inconsistencies:

1) Page 36.5, lines 5-6, change from:

"The PCS Service Interface allows the 1000BASE-X PCS to transfer information to and from the MAC (via the Reconciliation sublayer) or other PCS client, such as a repeater."

to

"The PCS Service Interface allows the 1000BASE-X PCS to transfer information to and from a PCS client. PCS clients include the MAC (via the Reconciliation sublayer) and repeater."

The PCS Service Interface allows the 1000BASEX PCS to transfer information to and from the MAC (via the Reconciliation sublayer) or other PCS client, such as a repeater.

2) Page 36.17, line 8, change from:

"An EPD of /T/R/R/ results in one /R/ being delivered to the PCS client (see 36.2.4.14.1)."

to

"An EPD of /T/R/R/ results in one /R/ being delivered to the MAC (see 36.2.4.14.1)."

Proposed Response *Response Status* **O**

Cl **36** *SC* **36.2.5.1.3** *P* **36.20, 36.21** *L* **21** # **17**

Thomas Dineen — LSI Logic, 1551 McCar

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

The format of the rx_Config_Reg<D15:D0> and tx_Config_Reg<D15:D0> variables seems to be unclear or unspecified. After discussions it became clear that the intended format is specified in 37.2.1.1 and 37.2.4.3.1.

Please specify by reference the format of the rx_Config_Reg<D15:D0> and tx_Config_Reg<D15:D0> variables.

Two references are required:
a) Section 36.2.5.1.3, Page 36.20, line 21 rx_Config_Reg<D15:D0>.
b) Section 36.2.5.1.3, Page 36.21, line 21 tx_Config_Reg<D15:D0>.

SuggestedRemedy

Add the following sentence to the rx_Config_Reg<D15:D0> and tx_Config_Reg<D15:D0> variable definitions as shown in Section 36.2.5.1.3.

At page 36.20, line 21, rx_Config_Reg<D15:D0> add:
"The bit format of the rx_Config_Reg<D15:D0> variable is context dependent, relative to the state of the auto-negotiation function, and is presented in sections 37.2.1.1 and 37.2.4.3.1."

At page 36.21, line 21, tx_Config_Reg<D15:D0> add:
"The bit format of the tx_Config_Reg<D15:D0> variable is context dependent, relative to the state of the auto-negotiation function, and is presented in sections 37.2.1.1 and 37.2.4.3.1."

Proposed Response *Response Status* **O**

Cl **36** *SC* **36.2.5.2.6** *P* **36.31** *L* **1** # **6**

Howie Johnson Lucent Technologies

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

Comment originally submitted by April Bergstrom. The comment was rejected during the D3.3 recirculation ballot, and the commenter approved of that disposition. The chief editor has promised to preserve this issue for further consideration during the sponsor ballot:

The variable "mr_loopback" is not defined for figure 36-9.

SuggestedRemedy

Add the following definition to 36.2.5.1.3 :

mr_loopback
A boolean that indicates the enabling and disabling of data
being loopbacked through the PHY. Loopback of data through th
PHY is enabled when Control register bit 0.14 is set to one

Values: FALSE; Loopback through the PHY is disabled
TRUE; Loopback through the PHY is enable

Proposed Response *Response Status* **O**

REJECT. This comment involves more than just the mr_loopback variable. There is a general table in clause 37 which lists the correspondence between state machine variables on clause 36 and management registers in clause 35. This item should go into that table. In addition, we could use a pointer from clause 36 to that table.
The chief editor will consider these other necessary editorial changes and resubmit them, once it is clear how to resolve the issue, as a sponsor ballot comment. The resolution of this comment will also affect comment number 1.

Cl **36** *SC* **36.3.4.2** *P* **36.38** *L* **15** # **35**

Brad Booth Jato Technologies, Inc

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

Missing a "/" or an "and" to seperate "Input output"

SuggestedRemedy

Change to:
"Figure 36-11 - Input/output valid level for AC measurements"

Proposed Response *Response Status* **O**

Cl **36** *SC* **36.3.6.2** *P* **36.40** *L* **43** # **36**

Brad Booth Jato Technologies, Inc

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

REFCLK documented in footnote, but REFCLK does not exist.

SuggestedRemedy

Change "REFCLK" to "PMA_TX_CLK".

Proposed Response *Response Status* **O**

Cl **36** *SC* **36.4** *P* **36.41** *L* **32-40** # **32**

Rich Seifert Networks and Commu

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

.

First, the draft repeatedly states that the GMII is not intended as an exposed interface. However, this paragraph says that if there is an exposed PCS interface, then it SHALL comply with the GMII requirements. This appears to be self-contradictory.

Second, the last statement of this paragraph appears to be a tautology: "...if an exposed interface is provided to the PMA, and that interface is the TBI ... it shall comply with the [TBI] requirements...". By definition, if it *didn't* comply with the requirements, then it wouldn't be a TBI!! The statement neither requires that exposed PMA interfaces comply with the TBI requirements, not does it require that the TBI be used as the exposed PMA interface. It basically says that if you want to make your interface TBI-compliant, then it must comply with the requirements for a TBI-compliant interface, which is a content-free statement.

Second, the last state

SuggestedRemedy

Either eliminate this subclause in its entirety, and any associated PICS entries, or delete all but the first sentence of this paragraph.

Proposed Response *Response Status* **O**

Cl **36A** *SC* **36A.4** *P* **36A.2** *L* **24** # **37**

Brad Booth Jato Technologies, Inc

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

Missing underscores in signal names.

SuggestedRemedy

Change to:
IPG (TX_EN and TX_ER low)

Proposed Response *Response Status* **O**

Cl **36A** *SC* **Global** *P* **Global** *L* **Global** # **33**

Edward S. Chang Unisys Corporation

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

The title, Random jitter test patterns, does not represent the contents of Clause 36A. The title means, the test patterns for random jitter (RJ) as oppose to deterministic jitter (DJ).

In fact, clause 36A includes variety of test patterns:
36A.1 High frequency test pattern -RJ (also transitio asymmetry)
36A.2 Low frequency test pattern - RJ (also PLL tracking error
36A.3 Mixed frequency test pattern - RJ and D
36A.4 Continuous random jitter test pattern - RJ and D

Obviously, the contents of Clause 36A is to provide variety of test patterns to characterize the jitter (RJ, DJ, BER) for the devices under test at different jitter conditions.

Therefore, the title should be changed to "Jitter test patterns", which will include all jitter: RJ and DJ.

Furthermore, it is recommended to explain the purposes of each tests.

SuggestedRemedy

1. At page 36A.1, line 6, change the title to "Jitter test patterns".
2. At page 36A, line 19, add "The intent of this test patter is to test (RJ) random jitter at BER of 10^-12, and the asymmetry of transition time".
3. At page 36A.1, line 28, add "The intent of this test pattern is to test low frequency RJ and PLL tracking error".
4. At age 36A, line 41, add "The intent of this test pattern is to test the combined jiter of RJ and DJ (deterministic jitter)".

Proposed Response *Response Status* **O**

Cl **37** *SC* **37.2.1.1** *P* **37.3** *L* **52** # **18**

Thomas Dineen LSI Logic, 1551 McCar

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

The format of the rx_Config_Reg<D15:D0> and tx_Config_Reg<D15:D0> variables as shown in clause 36 seems to be unclear or unspecified. After discussions it became clear that the intended format is specified in 37.2.1.1 and 37.2.4.3.1.

Please specify by reference the format of the rx_Config_Reg<D15:D0> and tx_Config_Reg<D15:D0> variables.

Two references are required.
In sections 37.2.1.1 and 37.2.4.3.1 please add references to section 36.2.5.1.3 concerning both the definitions of rx_Config_Reg<D15:D0> and tx_Config_Reg<D15:D0> variables.

SuggestedRemedy

Add the following sentence to both 37.2.1.1 and 37.2.4.3.1.

At page 37.3, section 37.2.1.1, line 55, add:
"The bit format of the rx_Config_Reg<D15:D0> and tx_Config_Reg<D15:D0> variables is context dependent, relative to the state of the auto-negotiation function, and is presented in here and in section 37.2.4.3.1."

At page 37.9, section 37.2.4.3.1, line 24, add:
"The bit format of the rx_Config_Reg<D15:D0> and tx_Config_Reg<D15:D0> variables is context dependent, relative to the state of the auto-negotiation function, and is presented here and in section 37.2.1.1."

Proposed Response *Response Status* **O**

Cl **37** *SC* **37.2.1.5.3** *P* **37.6** *L* **4** # **14**

Howard Frazier Cisco Systems, Inc

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

The text in this subclause precludes the implementation of the most useful remote fault signalling algorithm. The text states:

While sync_status = FAIL, remote fault information is not signaled.

If the input fiber to a station is broken, sync_status = FAIL. Under this condition, it would be useful for a station to signal remote fault = Link Failure, so that the remote end of the link can see that the link is broken. This allows the station which receives the remote fault indication to differentiate between a link partner which has detected a broken link, and a link partner which is stuck in a reset state (which would be indicated by the receipt of /C/ zero config words).

Furthermore, the current behavior, which reports remote fault based on loss of sync, exhibits the old "hair trigger" behavior which we have come to know and hate.

Lastly, the current behavior will report "old news". The information about a failed link will only be signalled once the link is healthy again. This is too late to be of any help, since the desireable behavior is to report sick links, rather than healthy ones that were previously sick.

SuggestedRemedy

Change text in 37.2.1.5.3 to read:

A Remote Fault encoding of 0b10 indicates that the local device has detected a Link_Failure as indicated by the condition an_sync_status = FAIL. This Remote Fault encoding is continously transmitted in the AN_ENABLE state as long as the condition an_sync_status = FAIL persists.

As a consequence of this change, the RF bits should be masked out of the comparison rx_Config_Reg<D15:0>=0 for the purposes of restarting autonegotiation.

Proposed Response *Response Status* **O**

Cl **37** *SC* **37.2.4.3** *P* **37.9** *L* **8-9** # **8**

Howie Johnson Cabletron Systems, In

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

Comment originally submitted by Benjamin Brown. The comment was rejected during the D3.3 recirculation ballot, and the commenter approved of that disposition. The chief editor has promised to preserve this issue for further consideration during the sponsor ballot:

The change to 37.2.4.3, page 9, lines 8 & 9 in d3.3 now say: "The advertised ability NP bit shall be set from the Next Page Able bit." This is wrong because the hardware can be Next Page Able and management can choose to not set the NP bit. I also can't find where this change was accepted in response to any particular comment.

This is a result of extraneous wording from an initial proposed response to several d3.2 comments associated with the Next Page Able bit. The extraneous text is most of the underlined text on D3.3 page 37.9, lines 8:9. The relevant comment is d3.2 comment #29. That comment, remedy and accepted response is as follows:

comment #29 text:
Next page operation is also controlled by the Next Page Able bit in register 6.

suggested remedy #29 text:
Update documentation to reflect control of Next Page Able bit.

response #29 text:
Accepted. The following change is made:

pg 37.10, line 1 changed to: "If the Next Page function is supported by both link ends and a next page exchange has been invoked by both link ends, then the next page exchange ends when both ends..."

SuggestedRemedy

The extraneous text, which should be removed is the first two sentences of the paragraph starting on page 37.9, lines 8. This paragraph should start with "Next page operation...". Note that this was how the same paragraph appeared in d3.2.

Proposed Response *Response Status* **O**

REJECT. This comment involves a "shall" statement, and its resolution may be more complex than initially suspected. The commenter has agreed to re-evaluate the suggested remedy, and re-submit the comment during the sponsor ballot.

Cl **37** *SC* **37.2.4.3.11** *P* **37.11** *L* **40-43** # **7**

Howie Johnson Cabletron Systems, In

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

Comment originally submitted by Benjamin Brown. The comment was rejected during the D3.3 recirculation ballot, and the commenter approved of that disposition. The chief editor has promised to preserve this issue for further consideration during the sponsor ballot:

Duplicate fix information was inserted into d3.3 as a result of resolution of d3.2 commentID #70. This duplicate fix information is extraneous and not contained in the accepted response to d3.2 comment #70. That comment, remedy and accepted response is as follows:

comment #70 text:
Add helpful text taken and modified from Clause 28.2.3.4.11 to explain that a device must send a null next page if it is willing to receive next page information but has no information to transmit.

suggested remedy #70 text:
Add the following after the sentence ending "its link partner's next page information.":

"If both devices advertise Next Page ability in their base pages, then both devices shall send at least one Next Page. If a device advertises Next Page ability and has no information to send but is willing to receive, it sends a null page."

response #70 text:
Accepted. Added the following text after the sentence ending "...its link partner's next page information.":

"If both the local device and its link partner advertise Next Page ability in their base pages, then both devices shall send at least one Next Page. If the local device advertises Next Page ability and has no next page information to send but is willing to receive next pages, and its link partner also advertises Next Page ability, it shall send Message Pages with a Null Message Code."

Added two PICS items, NP3 and NP4 to 37.5.4.2.6, Next page functions:

Item	Feature	Subclause	Status	Support	Value/Comment
NP3	Initial Next Page Exchange	37.2.4.3	NP:M	Yes [ ] N/A [ ]	Upon advertisement of NP ability by both devices
NP4	Next Page Receipt Ability	37.2.4.3	NP:M	Yes [ ] N/A [ ]	Indicated by advertising NP ability via the NP bit

Renumbered other NPx PICS entries

SuggestedRemedy

Delete item f) in 37.2.4.3.11, on page 37.11, lines 40-43.

Proposed Response *Response Status* **O**

REJECT. This comment involves a "shall" statement, and its resolution may be more complex than initially suspected. The commenter has agreed to re-evaluate the suggested remedy, and re-submit the comment during the sponsor ballot.

Cl **37** *SC* **37.2.5.1.9** *P* **37.14** *L* **29** # **5**

Howie Johnson Lucent Technologies

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

Comment originally submitted by April Bergstrom. The comment was rejected during the D3.3 recirculation ballot, and the commenter approved of that disposition. The chief editor has promised to preserve this issue for further consideration during the sponsor ballot:

The sentence "Also included in this table is the mapping of variables from the state diagram of Figure 36-9 to management function interface signals." is not needed since bit 1.2 Link Status now is mapped to xmit==DATA and not sync_status.

SuggestedRemedy

Remove the sentence "Also included in this table ..." from subclause 37.2.5.1.9 .

Proposed Response *Response Status* **O**

REJECT. This comment will likely become irrelevant as a result of the resolution of comment 2. The chief editor will take care to preserve this issue during the sponsor ballot phase so we don't forget about it.

Cl **37** *SC* **37.3.1.1** *P* **37.15** *L* **48** # **34**

Brad Booth Jato Technologies, Inc

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

The variable signal_detect was added to the variable an_sync_status in Montreal. The original comment was not a request to add this variable, but rather a question about the effects of this variable changing states and whether that should impact the an_sync_status variable. I believe that the current draft goes beyond the commentors original intent.

SuggestedRemedy

Change:
an_sync_status
Qualified version of sync_status for use by Auto-Negotiation to detect a sync_status timeout condition.
Values: OK; The variable sync_status defined in 36.2.5.1.3 is OK.
FAIL; The variable sync_status defined in 36.2.5.1.3 is FAIL for a duration greater than or equal to the link timer.

Change 36.2.5.2.4 on page 36.29, line 25:
The condition sync_status=FAIL existing for ten ms or more causes the PCS Auto-Negotiation process to begin and the PCS Transmit process to begin transmission of /C/.

Proposed Response *Response Status* **O**

Cl **37** *SC* **37.3.1.1** *P* **37.16** *L* **23-29** # **2**

Howie Johnson Seeq Technology

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

Comment originally submitted by Steve Dreyer. The comment was withdrawn by the commentor from the D3.3 balloting. The chief editor has promised Steve that he will submit this comment on Steve's behalf during the sponsor ballot:

In Montreal, the PCS group decided to qualify an_sync_status=FAIL with a signal_detect timer of a min/max duration 1us-20mS so that the link_timer could be used if desired. The current text could be interpreted to not allow that.

In addition, the text for qualification by sync_status also has some ambiguity.

SuggestedRemedy

Modify an_sync_status value definition as follows:

Values: OK; The variable sync_status defined in 36.2.5.1.3 is OK and the variable signal_detect defined in 36.2.5.1.3 is OK.

FAIL; The variable sync_status defined in 36.2.5.1.3 is FAIL for a duration of the link_timer or the variable signal_detect defined in 36.2.5.1.3 is FAIL for a duration of 1uS-20mS.

Similarly, modify the first sentence of 36.2.5.2.4, P. 36.30, L. 14-15 to:

The condition sync_status=FAIL existing for a duration of 10mS-20mS or signal_detect=FAIL existing for a duration of 1uS-20mS causes the PCS Auto-Negotiation process to begin and the PCS Transmit process to begin the transmission of /C/.

Proposed Response *Response Status* **O**

Cl **38** *SC* **38.11** *P* **38.15** *L* **25** # **15**

Howard Frazier Cisco Systems, Inc

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

It is unrealistic to specify a minimum overfilled launch modal bandwidth of 500/500 MHz*km for 50 um fiber, because this fiber is practically non-existent in the installed based of premises cable. It may be available as jumper cordage, but is it seldom if ever sold as either inside or outside plant cable. A much more common minimum overfilled launch modal bandwidth specification for 50 um fiber is 400/400 MHz*km, which appears to make up more than half the installed base of 50 um premises cable, with most cables being of equal bandwidth at 850 nm, and somewhat higher bandwidth at 1300 nm.

SuggestedRemedy

Revise Table 38-12 to reflect a minimum overfilled launch modal bandwidth of 400/400 MHz*km for 50 um fiber, and recalculate link parameters for this figure. This will almost certainly drop the maximum link span for 1000BASE-SX on 50 um fiber below 550 meters, and may even drop it below 500 meters.

Proposed Response *Response Status* **O**

Cl **38** *SC* **38.3.1** *P* **38.5** *L* **29** # **42**

Brad Booth Jato Technologies, Inc

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

Missing "r" in Laser for Transmitter type under 62.5 um MMF.

SuggestedRemedy

Change "Lase" to "Laser"

Proposed Response *Response Status* **O**

Cl **38** *SC* **38.3.1** *P* **38.6** *L* **1-15** # **16**

Thomas Dineen LSI Logic, 1551 McCar

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

From user's prospective the subclause fails to provide a sufficient description of the "Mode conditioned hybrid patch cord". Detailed information on the identification, use, and installation should be required by the standard.

1) Each end of the patch cord should be labeled as per the intended connection.
a) "To Equipment".
b) "To Building".

2) The patch cord should have an indelible label attached identifying it as an "802.3z Gigabit Ethernet Hybrid Patch Cord". Information on the intended application should be provided. A warning should be included that this hybrid patch cord is NOT usable for normal single mode or multimode patch cord applications.

This labeling should serve to produce a easy to use and install hybrid patch cord product.

SuggestedRemedy

At the top of page 38.6, subclause 38.3.1 add the following descriptive text at line 15:

"Mode conditioned hybrid patch cord assemblies shall be manufactured to include the following characteristics and product labeling:

1) Each end of the hybrid patch cord assembly shall be labeled to indicate the required connection:
a) "To Equipment" label attached to the PMD MDI connector.
b) "To Building" label attached to the multimode cable plant connector.

2) The hybrid patch cord shall include an attached indelible label specifying the following:
a) "802.3z Gigabit Ethernet Hybrid Patch Cord."
b) "This product is intended to provide conditioned laser launch for 1000BASE-SX laser transceivers operating over multimode fiber plants."
c) "This product is not usable for normal patch cord applications."

Proposed Response *Response Status* **O**

Cl **38** *SC* **38.3.1** *P* **38.6** *L* **42-47** # **3**

Howie Johnson LSI Logic, 1551 McCar

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

Comment originally submitted by Thomas Dineen. The comment was withdrawn by the commentor from the D3.3 balloting. The chief editor has promised Thomas that he will submit this comment on Thomas' behalf during the sponsor ballot:

From user's prospective the subclause fails to provide a sufficient description of the "Mode conditioned hybrid patch cord". Detailed information on the identification, use, and installation should be required by the standard.

1) Each end of the patch cord should be labeled as per the intended connection.
a) PMD MDI end.
b) Cable Plant end.

2) The patch cord should have an indelible label attached identifying it as an "802.3z Gigabit Ethernet Hybrid Patch Cord". Information on the intended application should be provided. A warning should be included that this hybrid patch cord is NOT usable for normal single mode or multimode patch cord applications.

3) The patch cord outer covering should be of a bright and unique color differentiating it from other commercial patch cord products.

This labeling should serve to produce a easy to use and install hybrid patch cord product.

SuggestedRemedy

At the bottom of page 38.6, subclause 38.3.1 add the following descriptive text:

"Mode conditioned hybrid patch cord assemblies shall be manufactured to include the following characteristics and product labeling:

1) Each end of the hybrid patch cord shall be labeled to indicate the required connection:
a) "PMD MDI" label attached to the PMD MDI connector.
b) "Multimode Cable Plant" label attached to the multimode cable plant connector.

2) The hybrid patch cord shall include an attached indelible label specifying the following:
a) "802.3z Gigabit Ethernet Hybrid Patch Cord."
b) "This product is intended to provide conditioned laser launch for 1000BASE-SX laser transceivers operating over multimode fiber plants."
c) "This product is not usable for normal patch cord applications."

3) The patch cord outer covering shall be colored "Corvette Yellow"."

Proposed Response *Response Status* **O**

Cl **38A** *SC* *P* **38.25** *L* # **43**

Brad Booth

Jato Technologies, Inc

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

Page number incorrect.

SuggestedRemedy

Change 38.25 to 38.30 to be 38A.1 to 38A.6.

Proposed Response *Response Status* **O**

Cl **38B** *SC* *P* **38.31** *L* # **44**

Brad Booth
Jato Technologies, Inc

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

Page numbering incorrect.

SuggestedRemedy

Change 38.31 and 38.32 to be 38B.1 and 38B.2.

Proposed Response *Response Status* **O**

Cl **39** *SC* **39.2.3** *P* **39.2** *L* **15** # **4**

Howie Johnson Hewlett-Packard

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

Comment originally submitted by Haluk Aytac. The comment was withdrawn by the commentor from the D3.3 balloting. The chief editor has promised Haluk that he will submit this comment on Haluk's behalf during the sponsor ballot:

Assigning fixed values to 1000BASE-CX signal detect function may be limiting the usefulness of SERDES devices for twinax copper cables. The only requirement is that signal detect, cross talk, minimum sensitivity be consistent. Of these three, cross talk can be taken to be the maximum of numbers gathered from the cable manufacturers and board designers. A SERDES from a vendor must always indicate a loss of signal below an amplitude value which is above maximum cross talk and above a guaranteed sensitivity level (given in the data sheet from this same SERDES vendor) by a certain guardband.

SuggestedRemedy

Remove the 200mV value from the spec. This is the value below which signal detect must always show loss of signal. Call this value SD_FAIL. Allow SERDES vendors determine this value in their data sheets. It must be larger than cross talk on receive side due to the transmit signal. Remove the 400mV value from the spec. Allow SERDES vendors to determine this value. Call it SD_PASS. This value must be smaller than 400mV which is the minimum sensitivity that is in this clause. It also must be larger than SD_FAIL.

Proposed Response *Response Status* **O**