Comment ID 170 **Topic**
Name Amrit Kalla
Email
Phone
Fax
Co.

Cl 00 **SC** **P** **L**

Comment Type E **Comment Status** A

add more informative material to the T.O.C.

SuggestedRemedy

Proposed Response **Response Status** C

ACCEPT.

Comment ID 171 **Topic**
Name Chris DiMinico
Email
Phone
Fax
Co. DEC

Cl 00 **SC** **P** **L**

Comment Type E **Comment Status** A

T.O.C. entry for clause 40 is incorrect.

SuggestedRemedy

In the T.O.C, the title of
clause 40 should refer to "4-pair 100-ohm category 5 PHY",
not to "UTP PHY"

Proposed Response **Response Status** C

ACCEPT, with editorial chagne to spell the numeral 4, "four-pair..."

Comment ID 169 **Topic**
Name Geoff Thompson
Email
Phone
Fax
Co. Bay Networks

Cl 00 **SC** **P** **L**

Comment Type E **Comment Status** A

All editorial notes in clauses 01-30 regarding previously approved
IEEE 802.3 documents are wrong.

SuggestedRemedy

Need to show .x and .y with *1997* dates, not 1996.

Proposed Response **Response Status** C

ACCEPT
Changes complete in clauses: 01, 02, 03, 05, 06
Remaining to be done: 04, 30, 30A, 30B

Comment ID 16 **Topic**
Name Howie Johnson
Email howiej@sigcon.com
Phone 425 556 0800
Fax 425 881 6149
Co. Signal Consulting

Cl 01 **SC** 1.2 **P** 01.2 **L** 14

Comment Type E **Comment Status** A

Brackets in figure 1-1 show funny little boxes

SuggestedRemedy

Copy good-looking brackets from fig. 2-1

Proposed Response **Response Status** C

ACCEPT

Comment ID 183 **Topic**
Name Steve Swanson
Email swansonse@corning.com
Phone +1 607 974 4252
Fax +1 607 974 4941
Co. Corning Inc

Cl 01 **SC** unknown **P** unknown **L** unknown

Comment Type E **Comment Status** A

There are no clause 38 references included in the standard.

SuggestedRemedy

Add the attached clause 38 references to clause 1.

Proposed Response **Response Status** C

Comment ID 6 **Topic**
Name Larry Rubin
Email lhrubin@jatotech.com
Phone (512)342-0770x217
Fax (512)342-0776
Co. Jato Technologies

Cl 04 **SC** 4.4.2.4 **P** **L** 21

Comment Type T **Comment Status** A

Please disregard my previous comment concerning a 65536 value for burstlimit requiring a 17 bit counter. I failed to realize ths was bits, not bytes, and since MACs count bytes, this only requires a 14 bit counter. The number of bits does, of course, have to be a multiple of 8.

SuggestedRemedy

Proposed Response **Response Status** C

This comment withdraws comment # 5.

Comment ID 5 **Topic**
Name Larry Rubin
Email lrubin@jatotech.com
Phone (512)342-0770x217
Fax (512)342-0776
Co. Jato Technologies

Cl 04 **SC** 4.4.2.4 **P** **L** 21

Comment Type T **Comment Status** R

If the new burstLimit is 65536 bytes, it will require 17 bit counters to implement.

SuggestedRemedy

If the new burstLimit were set at 65535, more typical 16 bit counters could be used to implement this.

Proposed Response **Response Status** Z

Withdrawn by comment 6.

Comment ID 15 **Topic**
Name Howie Johnson
Email howiej@sigcon.com
Phone 425 556 0800
Fax 425 881 6149
Co. Signal Consulting

Cl 04 **SC** 4 **P** 4.2 **L** 18

Comment Type E **Comment Status** A

Brackets in figure 4-1 show funny little boxes

SuggestedRemedy

Copy good-looking brackets from fig. 2-1

Proposed Response **Response Status** W

Accepted. Fix in D3.1.

Comment ID 10 **Topic**

Name Bob Grow
Email bob@xlnt.com
Phone 619-487-9320
Fax 619-487-9768
Co. XLNT

Cl 22 **SC** 22.2.4.2.15 **P** 22.6 **L** 27

Comment Type T **Comment Status** A

The jabber function should behave the same at 1000 Mb/s as it does at 100 Mb/s.

SuggestedRemedy

Replace the second paragraph of the current 22.2.4.2.14 (renumbered as
22.2.4.15) with the following:

PHYs specified for operation at speeds of 100 Mb/s and above do not
incorporate a Jabber Detect function, as this function is defined to be
performed in the repeater unit at these speeds. Therefore, PHYs specified
for operation at speeds of 100 Mb/s and above shall always return a value
of zero in bit 1.1.

Also add to the PICS modifications on page 22.8 line 37:

MF51 All PHYs operating at rates of 100 Mb/s or above return 0 for
jabber detect 22.2.4.2.15 M -- Yes (1.1 always = 0 for all
PHYs operating at rates of 100 Mb/s or above)

Proposed Response **Response Status** W

Accept.

Comment ID 11 **Topic**

Name Bob Grow
Email bob@xlnt.com
Phone 619-487-9320
Fax 619-487-9768
Co. XLNT

Cl 22 **SC** 22.2.4. **P** 22. **L**

Comment Type E **Comment Status** A

It is not clear to me why 22.2.4.3.6 of 802.3u was removed by 802.3x &
802.3y. It is the only place where two rows of Table 22-6 are described
and is an appropriate location to indicate the distinct register definitions of clause 28 and clause 37.

SuggestedRemedy

Add:
22.2.4.3.9 PHY specific registers
A particular PHY may provide a subset of or additional registers beyond those defined above. Register addresses 16 through 31 (decimal) may be used to provide vendor-specific functions or abilities. The definition of registers 4 through 14 are dependent on the version (clause 28 or clause 37) of Auto-Negotiation protocol used by the PHY.

Proposed Response **Response Status** C

Accept.

Comment ID 123 **Topic**
Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 22 **SC** 22.2.4.2.12 **P** 57 **L**

Comment Type E **Comment Status** A

Clause 22, 802.3u.

Under Jabber Detect section, it is mentioned that PHY's for 100 Mb/s do not incorporate jabber. 1000 Mb/s operation should be added.

SuggestedRemedy

Add 1000 Mb/s operation to list of PHY's that don't incorporate jabber.

Proposed Response **Response Status** W

Accept, duplicate, see response to comment 10.

Comment ID 7 **Topic**
Name Devendra Tripathi
Email devendra.tripathi@xaqti.com
Phone 408-487-0806
Fax
Co. XaQti Corporation

Cl 22 **SC** 22.7 **P** 22.3 **L** 17

Comment Type E **Comment Status** A

The use of bit 5 of control register to select a particular type of 1000 Mb/s medium
for auto-negotiation is not consistent with the same at 10 or 100 Mb/s. As of now, this is left for vendors to decide. Unless this issue is tackled in full (that is how to pick a particular transmision medium at selected speed), it is advisable to leave it as such.

SuggestedRemedy

Remove the bit 5 (auto-negotiation selection) from control register.

Side effect: The table 37-9 (pp 37.17), the definition of mr_an_enable needs to be changed too. I suggest here, to use the link speed along with bit 12 of control register.

Proposed Response **Response Status** W

Remove bit description from table, remove new subsection describing the bit, change the bit back to reserved (table and reserved paragraph), and correct the section numbering instructions.

Comment ID 172 **Topic**
Name SambaMurthy
Email
Phone
Fax
Co. XaQti

Cl 30 **SC** 30.3.1.1.23 **P** 30.24 **L** 6,9

Comment Type E **Comment Status** A

Length field has been changed to Length/Type field as per 802.3x standard.

SuggestedRemedy

Replace "length" field with "length/type" field and also include the reference to subclause 3.2.6 of the 802.3x standard.

Proposed Response **Response Status** C

Accepted. Fix in D3.1.

Comment ID 173 **Topic**
Name Sumesh kaul
Email skaul@baynetworks.com
Phone 408-495-3418
Fax 408-495-129
Co. Bay Networks

Cl 30 **SC** 30.3.1.1.24 **P** 30.24 **L** 15

Comment Type E **Comment Status** A

Since type field has been defined in 802.3x, there should be a reference to that section of the document.

SuggestedRemedy

Right after Type field insert the reference to subclause 3.2.6 of the 802.3x standard.

Proposed Response **Response Status** C

Accepted. Fix in D3.1.

Comment ID 18 **Topic**
Name Howie Johnson
Email howiej@sigcon.com
Phone 425 556 0800
Fax 425 881 6149
Co. Signal Consulting

Cl 34 **SC** 34.1 **P** 34.2 **L** 14

Comment Type E **Comment Status** A

Brackets in figure 34-1 show funny little boxes

SuggestedRemedy

Copy good-looking brackets from fig. 2-1

Proposed Response **Response Status** C

ACCEPT

Comment ID 88 **Topic**

Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.2 **P** 35.7 thro **L**

Comment Type TR **Comment Status** D

The format and content of the GMII signal definitions is inconsistent.
If the definitions are incremental to the MII definitions as suggested
in 35.1.1.e, page 3, then redundant information should be removed from
the GMII definitions. If the GMII definitions are standalone, then
complete definitions are needed.

In addition, the order in which information is presented in the definitions is inconsistent which makes them harder to use.

SuggestedRemedy

I will assist Bob Grow with remedy once the question of incremental
or standalone definitions is answered.

Proposed Response **Response Status** Z

This comment will be resubmitted as a WG ballot comment

Comment ID 90 **Topic**

Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.2.2 **P** 35.7 **L** 34-37

Comment Type TR **Comment Status** A

GTX_CLK is defined as the timing reference for certain signals, but
there is no statement as to when the value of those signals is sampled by the GMII receiver.

SuggestedRemedy

Add the sentence

"The values of TX_EN, TX_ER and TXD are sampled by the PHY on the rising edge of GTX_CLK."

Proposed Response **Response Status** C

Replace first paragraph of 35.2.2.2 with:
GTX_CLK is a continuous clock, used for operation at 1000 Mb/s. GTX_CLK provides the timing reference for the transfer of the TX_EN, TX_ER, and TXD signals from the Reconciliation sublayer to the PHY. The values of TX_EN, TX_ER and TXD are sampled by the PHY on the rising edge of GTX_CLK. GTX_CLK is sourced by the Reconciliation sublayer.

Comment ID 91 **Topic**

Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.2.3 **P** 35.7 **L** 45-48

Comment Type TR **Comment Status** A

RX_CLK is defined as the timing reference for certain signals, but there is no statement as to when the value of those signals is sampled by the GMII receiver.

SuggestedRemedy

Add the sentence

"The values of RX_DV, RX_ER and RXD are sampled by the reconciliation layer on the rising edge of RX_CLK."

Proposed Response **Response Status** C

Replace the first and second paragraphs of 35.2.2.3 with:

RX_CLK is a continuous clock which provides the timing reference for the transfer of the RX_DV, RX_ER and RXD signals from the PHY to the Reconciliation sublayer. RX_DV, RX_ER and RXD are sampled by the Reconciliation sublayer on the rising edge of RX_CLK. RX_CLK is sourced by the PHY.

The frequency of RX_CLK may be derived from the received data or it may be that of a nominal clock (e.g., GTX_CLK). When derived from the received data RX_CLK shall have a frequency equal to one-eighth of the data rate of the received signal, which is nominally 125 MHz.

Comment ID 89 **Topic**

Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.2.3 **P** 35.7 **L** 46-47 46-

Comment Type TR **Comment Status** A

The issue in lines 47-48 is the frequency of RX_CLK. There is no need to discuss the "RX_CLK reference".

SuggestedRemedy

Replace the sentence beginning on line 47 with

"The frequency of RX_CLK may be derived from the received data or it may be that of a nominal GTX_CLK."

Proposed Response **Response Status** C

See response to comment 91.

Comment ID 93 **Topic**

Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.2.3 **P** 35.8 **L** 2

Comment Type TR **Comment Status** D

How does this definition of the frequency of RX_CLK interact with the
MII definitions, i.e. bit_rate/8 versus bit_rate/4?

SuggestedRemedy

Proposed Response **Response Status** Z

This is covered in 35.2.

Comment ID 92 **Topic**

Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.2.3 **P** 35.8 **L** 1-2

Comment Type TR **Comment Status** A

The statement that "While RX_DV is asserted, RX_CLK shall be synchronous
with the recovered data and ..." is curious. By definition RXD is synchronous with RX_CLK. And if the "recovered data" reference is not
to RXD, then I doubt that there is a way of enforcing the shall.

SuggestedRemedy

Delete the phrase.

Proposed Response **Response Status** C

See response to comment 91.

Comment ID 94 **Topic**

Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.2.5 **P** 35.9 **L** 13-29

Comment Type TR **Comment Status** A

There is no explicit indication that values of TXD in table 35-1 are
in hex.

SuggestedRemedy

Explicitly indicate that the values of TXD in table 35-1 are in hex.

Proposed Response **Response Status** C

Move last sentence of the last paragraph of 35.2.2.5 to the end of the preceding paragraph (to 35.9L7) for topical consistency. Add new sentence to last paragraph (35.9L9):

The encodings of TXD<7:0> in the table are in hexidecimal.

Comment ID 98 **Topic**

Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.2.8 **P** 35.13 **L** 3-20

Comment Type TR **Comment Status** A

There is no explicit indication that values of TXD in table 35-2 are
in hex.

SuggestedRemedy

Explicitly indicate that the values of TXD in table 35-2 are in hex.

Proposed Response **Response Status** C

(Assume comment refers to RXD not TXD.) Move last sentence of the last paragraph of 35.2.2.8 to the end of the fourth paragraph (to 35.12L14) for topical consistency. Add new sentence to last paragraph (35.12L53):

The encodings of RXD<7:0> in the table are in hexidecimal.

Comment ID 101 **Topic**

Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.3.2.1 **P** 35.17 **L** 1-4

Comment Type TR **Comment Status** A

LSB of SFD is not identified.

SuggestedRemedy

Identify LSB of SFD.

Proposed Response **Response Status** C

Move the second paragraph 35.16L49 to follow the SFD example and edit to read:

In the preceding example, the preamble and SFD are displayed using the bit order they would have if transmitted serially. This means that for each octet the leftmost bit represents the LSB of the octet, and the rightmost bit the octet MSB.

Comment ID 99 **Topic**

Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.3.2.1 **P** 35.16 **L** 44

Comment Type TR **Comment Status** A

The phrase "and when originally generated by the MAC" is curious. The MAC I believe generates one version of the preamble and never changes it. The word "originally" is not needed.

SuggestedRemedy

Remove the word "originally"

Proposed Response **Response Status** C

Accept.

Comment ID 103 **Topic**

Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.4.1 **P** 35.20 **L** 42-54

Comment Type TR **Comment Status** A

Much of the material in these three paragraphs is redundant and the
rest needs reorganization.

SuggestedRemedy

Replace the 3 paragraphs with the following:

"All AC timing measurements are made at the GMII receiver input pins and use the Vil_ac_max and Vih_ac_min thresholds."

Setup and hold time measurements are made with both the "data"
and the "clock" supplied to the GMII receiver inputs through the test circuits shown in Figure 35-21. One copy of the circuit is used to supply the "clock" and a second copy is used to supply the "data". The transmission lines in the two circuits shall be matched in delay.

The setup and hold time specifications shall be met under all combinations of worst case GMII driver supply potential and ambient temperature variation, worst case GMII driver process variation and worst case transmission line impedance variation.

The GTX_CLK and RX_CLK signal timing parameters are illustrated
in Figure 35-17.

Figure 35-18 shows the timing relationship for the signals at the input of a GMII receiver."

Proposed Response **Response Status** C

Accept with modifiation. Accepted text also requires addition of PICs items for matched delay and setup and hold times. Text:

All AC timing measurements are made at the GMII receiver input pins and use the VIL_AC(max) and VIH_AC(min) thresholds.

Setup and hold time measurements are made with both the "data" and

the "clock" supplied to the GMII receiver inputs through the test circuits shown in Figure 35-20. One copy of the circuit is used to supply the "clock" and a second copy is used to supply the "data". The transmission lines in the two circuits shall be matched in delay.

The setup and hold time specifications shall be met under all combinations of worst case GMII driver supply potential and ambient temperature variation, worst case GMII driver process variation, worst case transmission line impedance variation and worst case termination network component impediance variation.

The GTX_CLK and RX_CLK signal timing parameters are illustrated in Figure 35-17. Figure 35-18 shows the timing relationship for the signals at the input of a GMII receiver.
at the end of the last sentence of the third paragraph of the Suggested Remedy "and worst case termination component impediance variation."

Comment ID 104 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.4.1 **P** 35.21 **L** 1-40

Comment Type TR **Comment Status** A

Figures need corrections.

SuggestedRemedy

Delete Figure 35-19 as it is no longer needed.

Correct the labels on the thresholds in Figures 35-17 and 35-18 to read Vih_ac_min and Vil_ac_max.

Proposed Response **Response Status** C

Accept

Comment ID 107 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.4.2.1 **P** 35.23 **L** 38-51

Comment Type TR **Comment Status** A

Propose changes to Tpd, Tsetup, Thold and notes 1 and 2 of Table 35-9.

SuggestedRemedy

Delete Tpd.
Change Thold from 1.00 ns max to 1.50 ns min.
change Tsetup from 2.00 ns max to 2.5 ns min.
Add the following note

"GMII receivers shall require setup and hold times not exceeding 2.00 ns and 1.00 ns respectively for correct operation.

Proposed Response **Response Status** W

Accept with modification. Delete tPD, change tSETUP to 2.50 and tHOLD to 0.50. Replace note 2 with: "GMII receivers require setup and hold times not exceding 2.00 ns and 0.00 ns respectively for correct operation.

Comment ID 106 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.4.2.1 **P** 35.23 **L** 21-34

Comment Type TR **Comment Status** A

Propose changes to Tpd, Tsetup, Thold and notes 1 and 2 of Table 35-8.

SuggestedRemedy

Delete Tpd.
Change Thold from 1.00 ns max to 1.50 ns min.
change Tsetup from 2.00 ns max to 2.5 ns min.
Add the following note

"GMII receivers shall require setup and hold times not exceeding 2.00 ns and 1.00 ns respectively for correct operation.

Proposed Response **Response Status** C

Accept with modification. Delete tPD, change tSETUP to 2.50 and tHOLD to 0.50. Replace note 2 with: "GMII receivers require setup and hold times not exceding 2.00 ns and 0.00 ns respectively for correct operation.

Comment ID 109 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.4.2.1 **P** 35.22 **L** 13-23

Comment Type TR **Comment Status** A

Change template 0.500 V. and 1.900 Volt limits to Vil_ac_max and Vih_ac_min
respectively for consistency.

SuggestedRemedy

See comment.

Proposed Response **Response Status** C

Accept with modification. Voltages in comment are modified because of other changes, and editorial presentation of names is changed (subscript and capatilize IL_AC and put max in parenthesis).

Comment ID 110 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.4.2.1 **P** 35.22 **L** 32

Comment Type TR **Comment Status** A

Text does not clearly state that test must be passed under worst case
conditions of several parameters.

SuggestedRemedy

Insert after ""'GMII Receiver Input Potential Template'""

under all combinations of worst case GMII driver supply potential and ambient temperature variation, worst case GMII driver process variation and worst case transmission line impedance variation.

Proposed Response **Response Status** C

Accept. Add to end of last sentence "and worst case termination component impediance variation.

Comment ID 105 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.4.2.1 **P** 35.23 **L** 2-13

Comment Type TR **Comment Status** A

Propose that data rise and fall time specifications and note 1 be deleted from Table 35-7 and that Vil_ac and Vih_ac be added.

SuggestedRemedy

Delete data rise and fall time specs and note 1.
Add Vil_ac with a max value of 0.500 Volts.
Add Vih_ac with a min value of 1.900 Volts.

Proposed Response **Response Status** C

Accept with modifications. Vil_ac(max) Input Low Voltage AC of 0.70 V, Vih_ac(min) Input High Voltage of 1.90 V. Change condition description in other entries to refer to these names instead of voltage levels, and change "data path" to "clock" (two occurances) in the third paragraph.

Comment ID 122 **Topic**
Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 35 **SC** 35.4.2.1 **P** 35.23 **L** 27-28, 43

Comment Type TR **Comment Status** A

Tables 35-8, 35-9.

The tHIGH and tLOW times in these two tables compute to a duty cycle of approx. 30-70%. Draft D2.1 had the duty cycles specified at 40-60%. Couldn't find a comment in D2.1 comment database mentioning this change. Why did it change? Not sure whether I agree or disagree, would like to know justification.

SuggestedRemedy

Proposed Response **Response Status** W

The numbers were discussed and selected during 802.3z working group meetings. The 40-60% numbers in D2.1 were primarily an artifact from MII definitions where the 40-60% was driven by nibble wide operation with the 4b/5b code.

Comment ID 38 **Topic**

Name Bruce D. Miller
Email miller@baynetworks.com
Phone (508) 916-8177
Fax (508) 670-8153
Co. Bay Networks

Cl 35 **SC** 35.4.2.1 **P** 35.22 **L**

Comment Type T **Comment Status** A

This one is a bit of a nit...The GMII Receiver Input Potential Template
shows a window of permissable edge rates; there is no statement about
mandating monotonicity in the transition region. Since the template
is valid for clocks, this is requisite for proper system operation.

SuggestedRemedy

Add a disclaimer that indicates that the template is for bounding the
edge transition times, nonmonotonic behavior in the transition region
is not permissable for clocks.

Proposed Response **Response Status** C

Accept in principle. Add a slew rate specification to the AC Specifications for transition region of >= 0.6v/ns.

Comment ID 37 **Topic**

Name Bruce D. Miller
Email miller@baynetworks.com
Phone (508) 916-8177
Fax (508) 670-8153
Co. Bay Networks

Cl 35 **SC** 35.4.2.1 **P** 35.22 **L**

Comment Type T **Comment Status** A

The "GMII point-to-point transmission line test topology" shows that
all signal integrity measurements will be made in an environment of
a uniform 1 ns transmission line. Most system implementors will try
to keep this length to a minimum. There is no explicit statement that
the GMII interconnects can be other than 1 ns.

SuggestedRemedy

Add wording to indicate that while the test topology is a 1 ns transmission line, actual implementations are not mandated to adhere
strictly to this delay/length.

Proposed Response **Response Status** C

Accept. add SuggestedRemedy from "The test topology..." as new paragraph.

Comment ID 36 **Topic**
Name Bruce D. Miller
Email miller@baynetworks.com
Phone (508) 916-8177
Fax (508) 670-8153
Co. Bay Networks

Cl 35 **SC** 35.4.2.1 **P** 35.22 **L**

Comment Type T **Comment Status** A

The "GMII Point to Point Transmission Line Test Topology" differs from
that proposed in the interim meeting. Specifically, the GMII receiver
load is shown as a lumped 5 pf capacitor. Given that the template only
bounds edge rates on the slow end, edge rates can be as fast as technology/design allows.

The presentation which Bill Quackenbush made in the interim meeting
showed that signal integrity was extremely dependent upon the actual
receiver loading characteristics and the measurement point.

SuggestedRemedy

1. Modify Figure 35-21 to include a representation of the receive parasitics (the presentation had an L - C representation. Show the measurement point at the same point that a receiver would sample the
waveform.

2. Add wording indicating that manufacturers shall disclose their receiver electrical parasitic models to be considered GMII compliant.

Proposed Response **Response Status** Z

Withdrawn. May resubmit with another Remedy.

Comment ID 46 **Topic**
Name Dan Essig
Email essig@brooktree.com
Phone +1 619 535 3615
Fax +1 619 452 1813
Co. Rockwell Semiconductor Systems

Cl 35 **SC** 35.4.2.2 **P** 35.24 **L** 18

Comment Type T **Comment Status** R

Vcc conditions should be removed from the table.
- Reason: Vcc not used previously and specified levels should not be a
function of Vcc.

SuggestedRemedy

Remove the two "Vcc=Min" and two "Vcc=Max" from the Conditions columns
of the table.

Proposed Response **Response Status** W

Refers to the driver Vcc specifications set by the vendor.

Comment ID 112 **Topic**
Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 35 **SC** 35.1.3 **P** 35.3 **L** 27

Comment Type E **Comment Status** A

Remove "-" before "Rates".

SuggestedRemedy

Proposed Response **Response Status** W

The hyphen is a strikethrough. No change necessary.

Comment ID 2 **Topic**
Name Gerard Nadeau
Email grn@iol.unh.edu
Phone 603-862-4822
Fax 603-862-1915
Co. UNH InterOperability Lab

Cl 35 **SC** 35.2.1.1.1 **P** 35.4 **L** 47

Comment Type E **Comment Status** A

add: TX_ER and TX_CLK to list.

SuggestedRemedy

"Map the primitive PLS_DATA.request to the GMII signals TXD<7:0>, TX_EN, TX_ER, TX_CLK, and GTX_CLK."

Proposed Response **Response Status** W

It is appropriate to add TX_ER but not TX_CLK. TX_CLK is not used in GMII
mode, only in MII mode, which is specified by clause 22 and its PLS service
primitive mappings. Replace 35.2.1.1.1 with:

Map the primitive PLS_DATA.request to the GMII signals TXD<7:0>, TX_EN, TX_ER, and GTX_CLK."

Comment ID 153 **Topic**
Name Maui GMII meeting
Email
Phone
Fax
Co.

Cl 35 **SC** 35.2.2.2 **P** 35.7 **L** 39

Comment Type E **Comment Status** A

Second sentence of second paragraph is redundant

SuggestedRemedy

Delete it.

Proposed Response **Response Status** C

Accept.

Comment ID 97 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.2.8 **P** 35.12 **L** 52-53

Comment Type E **Comment Status** A

The sentence "These signals shall transition synchronously with ..."
is redundant.

SuggestedRemedy

Remove it.

Proposed Response **Response Status** C

Accept.

Comment ID 96 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.2.8 **P** 35.12 **L** 1-14

Comment Type E **Comment Status** A

The specification of the value of RXD in certain instances is inconsistent.
In line 2, a specific value is given; in line 13, a specific value is not
given.

SuggestedRemedy

Remove specific values for RXD and refer to the appropriate table.

Proposed Response **Response Status** C

35.12L2 -- ... signal while driving the specific value listed in Table 35-2 onto RXD<7:0>.

Comment ID 154 **Topic**
Name Maui GMII meeting
Email
Phone
Fax
Co.

Cl 35 **SC** 35.2.2.8 **P** 35.13 **L** 10

Comment Type E **Comment Status** A

Remove "indication" from False Carrier description.

SuggestedRemedy

See comment.

Proposed Response **Response Status** C

Accept.

Comment ID 155 **Topic**
Name Maui GMII meeting
Email
Phone
Fax
Co.

Cl 35 **SC** 35.2.2.9 **P** 35.13 **L** 41

Comment Type E **Comment Status** A

The break mark on CRS is not in line with others.

SuggestedRemedy

Move it.

Proposed Response **Response Status** C

Acept.

Comment ID 115 **Topic**
Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 35 **SC** 35.2.3.2.1 **P** 35.16 **L** 54

Comment Type E **Comment Status** A

Reference 7.2.3.3 pertains to AUI and is not a good reference for SFD.

SuggestedRemedy

Replace "7.2.3.3" with "4.2.6".

Proposed Response **Response Status** C

Accept.

Comment ID 113 **Topic**
Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 35 **SC** 35.2.5 **P** 35.19 **L** 34

Comment Type E **Comment Status** A

Wrong reference for 37.2.4,

SuggestedRemedy

Replace "37.2.4" with "37.2.6".

Proposed Response **Response Status** W

Accept.

Comment ID 111 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.4.2 **P** 35.22 **L** 5

Comment Type E **Comment Status** A

The clause heading 35.4.2 "General Electrical Characteristics" does
not seem needed.

SuggestedRemedy

Delete it.

Proposed Response **Response Status** C

Accept. Renumber 35.4.2.1 to 35.4.2 and 35.4.2.2 to 35.4.3.

Comment ID 44 **Topic**
Name Dan Essig
Email essig@brooktree.com
Phone +1 619 535 3615
Fax +1 619 452 1813
Co. Rockwell Semiconductor Systems

Cl 35 **SC** 35.4.2.1 **P** 35.23 **L** 46

Comment Type E **Comment Status** A

The wrong clock signal is referenced for the setup and hold times.

SuggestedRemedy

Replace "GTX_CLK" with "RX_CLK" in tSETUP and tHOLD descriptions.

Proposed Response **Response Status** W

Accept, duplicate of 108.

Comment ID 102 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.4.2.2 **P** 35.24 **L** 1-27

Comment Type E **Comment Status** A

The DC characteristics are the last section in 35.4. They should be at
the beginning.

SuggestedRemedy

Move 35.4.2.2 to follow immediately after the first paragraph of 35.4
and before the subclause "Signal Timing Characteristics".

Proposed Response **Response Status** C

Accept, correct all references to tables and figures in 35.4.

Comment ID 47 **Topic**
Name Dan Essig
Email essig@brooktree.com
Phone +1 619 535 3615
Fax +1 619 452 1813
Co. Rockwell Semiconductor Systems

Cl 35 **SC** 35.4.2.2 **P** 35.24 **L** 5

Comment Type E **Comment Status** R

The phrase "data path signal" is used but I don't find a definition of
this term in the draft. The specific signals should be listed.

SuggestedRemedy

Add a sentence, "These specifications apply to TXD<7:0>, TX_EN, TX_ER,
GTX_CLK, TX_CLK, COL, RXD<7:0>, RX_ER, RX_CLK, CRS, RX_DB, MDC, MDIO."

Proposed Response **Response Status** W

Remedy needs modification. MDC and MDIO are management path signals specified in clause 22.

Comment ID 45 **Topic**
Name Dan Essig
Email essig@brooktree.com
Phone +1 619 535 3615
Fax +1 619 452 1813
Co. Rockwell Semiconductor Systems

Cl 35 **SC** 35.4.2.2 **P** 35.24 **L** 3-10

Comment Type E **Comment Status** R

The wording refers to "Physical layer" only but specifications apply
to link layer also.

SuggestedRemedy

On page 35.24 lines 4, 5, and 7: Change "Physical layer" to "physical
or link layer".

Proposed Response **Response Status** W

Reject. The DC specifications are only related to the PHY, which includes PMD per figure 35-1.

Comment ID 95 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.2.7 **P** 35.11 **L** 22

Comment Type **Comment Status** R

Statement "that data on RXD<7:0> is synchronous to RX_CLK" is true by definition and redundant.

SuggestedRemedy

Remove clause.

Proposed Response **Response Status** C

Reject. Some redundancy is good.

Comment ID 100 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.2.3.2.1 **P** 35.16 **L** 53

Comment Type **Comment Status** A

Insert the word "immediately" before the phase "follows the preamble"
for greater precision.

SuggestedRemedy

See suggestion.

Proposed Response **Response Status** C

Accept.

Comment ID 108 **Topic**
Name Bill Quackenbush
Email wlq@cisco.com
Phone 1 (408) 526-4696
Fax 1 (408) 527-5172
Co. cisco systems, inc.

Cl 35 **SC** 35.4.2.1 **P** 35.23 **L** 45-47

Comment Type **Comment Status** A

Setup and hold times should be relative to RX_CLK.

SuggestedRemedy

Change GTX_CLK to RX_CLK in Tsetup and Thold specs.

Proposed Response **Response Status** W

Accept.

Comment ID 40 **Topic**

Name Scott Mason
Email smason@plaintree.com
Phone +1 613 831 8300
Fax + 1 613 831 3283
Co. Plaintree Systems

Cl 36 **SC** Fig. 36-7b **P** 36.30 **L** 24

Comment Type TR **Comment Status** A

The comment also applies to clause 35, page 35.6, subclause 35.2.1.5.
Sorry - the web comment form does not have a field for this data.

The PCS describes valid end delimiters as /T//R//R/ or /T//R//K28.5/. However, in D3.0 figure 36.7b, the receive PCS ends the current frame when it receives /V/. When /V/ is received, the PCS signals carrier-extend error. Although the frame is terminated, the PCS client is required to associate the carrier-extend error with the preceding frame.

SuggestedRemedy

The arc from state RECEIVE to state EXTEND_ERR in D3.0 figure 36-7b should instead go to state RX_DATA_ERROR.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. Resolved per the resolution of comment 39.

Comment ID 39 **Topic**

Name Scott Mason
Email smason@plaintree.com
Phone +1 613 831 8300
Fax + 1 613 831 3283
Co. Plaintree Systems

Cl 36 **SC** Fig. 36-7b **P** 36.30 **L** 24

Comment Type TR **Comment Status** A

The comment also applies to clause 35, page 35.6, subclause 35.2.1.5.
Sorry - the web comment form does not have a field for this data.

The PCS describes valid end delimiters as /T//R//R/ or /T//R//K28.5/. However, in D3.0 figure 36.7b, the receive PCS ends the current frame when it receives /T/. When the two code-groups following /T/ are not /R//R/ or /R//K28.5/, the PCS signals carrier-extend error. Although the frame is terminated, the PCS client is required to associate the carrier-extend error with the preceding frame.

SuggestedRemedy

The arc from state EPD_CHECK_END to state EXTEND_ERR in D3.0 figure 36-7b should instead go to state RX_DATA_ERROR.

With this change, when a data code-group became corrupted to /T/, the PCS would clearly indicate a data error to its client. Also, when an end delimiter became corrupted, the PCS would clearly indicate a data error to its client. The PCS would continue to recover from a missing or corrupted end delimiter, via the state "EARLY_END".

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. The following changes are made:

Delete state EPD1_CHECK_END.

Add a transition from state RECEIVE to state TRR+EXTEND on the condition that check_end =3D /T/R/R/.

Add a transition from state RECEIVE to state TRI+RRI on the condition that check_end =3D /T/R/K28.5/ * EVEN.

Add a state EARLY_END_EXT.

Add a transition from state RECEIVE to state EARLY_END_EXT on the condition that check_end =3D /R/R/R/.

In state EARLY_END_EXT, set RX_ER <=3D TRUE.

Add a transition from state EARLY_END_EXT to state EPD2_CHECK_END under the condition SYNC_UNITDATA.indicate.

In state PACKET_BURST_RRS, set RX_DV <=3D FALSE and set RXD<7:0> <=3D 0000 1111.

Change the transition from state RECEIVE to state EARLY_END to become the condition that:
EVEN * (check_end =3D /K28.5/D/K28.5/ + check_end =3D /K28.5/D21.5/D0.0/ + check_end =3D /K28.5/D2.2/D0.0/).

Delete the transition from state EARLY_END to state RCV_C_CODE.

Change the transition from state EARLY_END to state IDLE_K to become SYNC_UNITDATA.indicate.

Change the transition from state RECEIVE to state RX_DATA_ERROR to become "ELSE".

Comment ID 41 **Topic**

Name Scott Mason
Email smason@plaintree.com
Phone +1 613 831 8300
Fax + 1 613 831 3283
Co. Plaintree Systems

Cl 36 **SC** Fig. 36-7b **P** 36.30 **L** 24

Comment Type TR **Comment Status** R

The comment also applies to clause 35, page 35.6, subclause 35.2.1.5. Sorry - the web comment form does not have a field for this data.

The PCS describes valid end delimiters as /T//R//R/ or /T//R//K28.5/. However, in D3.0 figure 36.7b, the receive PCS ends the current frame when it receives /V/. When /V/ is received, the PCS signals carrier-extend error. Although the frame is terminated, the PCS client is required to associate the carrier-extend error with the preceding frame.

SuggestedRemedy

The arc from state RECEIVE to state EXTEND_ERR in D3.0 figure 36-7b should instead go to state RX_DATA_ERROR.

Proposed Response **Response Status** Z

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Duplicate of comment 40.

Comment ID 204 **Topic**

Name Bob Noseworthy
Email ren@iol.unh.edu
Phone 603 862 4342
Fax 603 862 1915
Co. UNH InterOperability Lab

Cl 36 **SC** 36.2.4 **P** 36.7 **L** 1

Comment Type T **Comment Status** A

The "shall" is not referenced in the PICS.

"The definition of the 8B/10B transmission code in this standard shall be identical to that specified in ANSI X3.230-1994 (FC-PH) Clause 11."

SuggestedRemedy

Add PICS reference to 36.7.4.1.3 Code group functions
Item - CGx
Feature - 8B/10B transmission code
Subclause - 36.2.4
Status - M
Support - Yes[]
Comment - Identical to ANSI X3.230-1994=09

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. An alterate remedy was selected as follows:

In 36.2.4, replace "shall be" in the first sentence on page 36.7 with "is".

In 36.7.4.1.1, delete item PCS5.

Comment ID 205 **Topic**

Name Bob Noseworthy
Email ren@iol.unh.edu
Phone 603 862 4342
Fax 603 862 1915
Co. UNH InterOperability Lab

Cl 36 **SC** 36.2.4.2 **P** 36.8 **L** 5

Comment Type T **Comment Status** A

The "shall" is not referenced in the PICS.

"The contents of a packet shall be transmitted sequentially beginning with the ordered_set used to denote the Start_of_Packet (the SPD delimiter) and proceeding code_group by code_group from left to right within the definition of the packet until the ordered_set used to denote the End_of_Packet (the EPD delimiter) is transmitted."

SuggestedRemedy

Add PICS reference to 36.7.4.1.3 Code group functions
Item - CGx
Feature - Transmission order
Subclause - 36.2.4.2
Status - M
Support - Yes[]
Comment - sequential code_groups from SPD to EPD=09

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. An alterate remedy was selected as follows:

In 36.2.4.2, line 5, replace "shall be" with "is".

Comment ID 19 **Topic**

Name Howie Johnson
Email howiej@sigcon.com
Phone 425 556 0800
Fax 425 881 6149
Co. Signal Consulting

Cl 36 **SC** 36.2.4.7 **P** 36.10 **L** 6

Comment Type T **Comment Status** R

My reading of 36.2.4.4 indicates that the entry for D0.0 does not normally flip disparity, however, in the event of a preceeding data error it may do so. The rules stipulate that after having received D0.0- disparity is set to (-), and after having received D0.0+ disparity is set to (+), regardless of the previous value of disparity.

Table 36-3 should reflect this interpretation of the disparity rules.

SuggestedRemedy

Insert a column before column 6 in table 36-1(a-e) The new column header is: Set- RD The new value column is: "same" (for those balanced words whose codings are identical in the (-) and (+) columns, "-" for those words which set the disparity to (-). and "+" for those words which set the disparity to (+).
Change the heading of column 9 to read: Set+ RD The new value in that column is: "same" (for those balanced words whose codings are identical in the (-) and (+) columns, "-" for those words which set the disparity to (-). and "+" for those words which set the disparity to (+).

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
For valid code groups, the tables are always accurate. Invalid code-groups are not included in the table. The following changes are intended to clarify the calculation of running disparity by the receiver and transmitter:

Change the heading of 36.2.4.4 to: Running disparity rules.

Add to the end of 36.2.4.4: "For valid code groups, the results of the running disparity calculations, relative to the beginning running disparity, are indicated in the Ending RD column of tables 36-1 and 36-2."

Change the first sentence of 36.2.4.6 from "The column ..." to "The column in tables 36-1 and 36-2 ...".

Comment ID 206 **Topic**
Name Bob Noseworthy
Email ren@iol.unh.edu
Phone 603 862 4342
Fax 603 862 1915
Co. UNH InterOperability Lab

Cl 36 **SC** 36.2.4.7.1 **P** 36.9 **L** 53

Comment Type T **Comment Status** A

The "shall" is not referenced in the PICS.

"c) The second code_group of all multi-code_group ordered_sets shall be a data code_group."

SuggestedRemedy

Add PICS reference to 36.7.4.1.4 Ordered set functions
Item - OSx
Feature - Second code group of a multi-code group ordered set contains a data code_group
Subclause - 36.2.4.7.1
Status - M
Support - Yes[]
Comment -

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. An alterate remedy was selected by straw poll of 10 to 2 as follows:

In 36.2.4.7.1, item a, replace "shall consist" with "consists".

In item b, replace "shall be" with "is always".

In the first sentence of item c, replace "shall be" with "is always".

In the third sentence of item c, replace "shall provide" with "provides".

Comment ID 14 **Topic**
Name scott murphy
Email murph@alteon.com
Phone (408) 360-5518
Fax (408) 360-5501
Co. Alteon Networks

Cl 36 **SC** 36.2.5.2.2 **P** 36.30 **L**

Comment Type T **Comment Status** A

Figure 36-7b - PCS receive state diagram, part b is inconsistant in its handling of a states transitions back to itself. States False_Carrier and Extend_Err show explicit transitions back to themselves, while states Packet_Burst_RRS and TRI+RRI do not.

SuggestedRemedy

Remove the explicit transistions from FALSE_CARRIER and EXTEND_ERR back to themselves.

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted per the suggested remedy.

Comment ID 208 **Topic**

Name Bob Noseworthy
Email ren@iol.unh.edu
Phone 603 862 4342
Fax 603 862 1915
Co. UNH InterOperability Lab

Cl 36 **SC** 36.2.5.2.6 **P** 36.32 **L** 11

Comment Type T **Comment Status** A

Clarify meaning of the following shall statement:
"Acquisition of synchronization shall insure the alignment
of multi-code_group ordered_sets to even-numbered code_group boundaries."

Also, is this testable/observable, if so, add to PICS or remove shall.

SuggestedRemedy

Reword in the spirit of the following:
"Aquisition of synchronization shall insure that the alignment of properly=
received
multi
code_group ordered_sets occur on even-numbered code_group boundaries."

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by
motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. An alternate remedy was selected as follows:
In 36.2.5.2.6, line 11, replace "shall insure" with "insures".

Comment ID 209 **Topic**

Name Bob Noseworthy
Email ren@iol.unh.edu
Phone 603 862 4342
Fax 603 862 1915
Co. UNH InterOperability Lab

Cl 36 **SC** 36.3.7 **P** 36.42 **L** 53

Comment Type T **Comment Status** A

Missing "shall" from PICS
"Loopback mode shall be provided by the transmitter and receiver of a device=
as a
diagnostic test function to the device."

SuggestedRemedy

Add PICS reference to 36.7.4.1.7 PMA functions
Item - PMA6
Feature - Loopback mode
Subclause - 36.3.7
Status - M
Support - Yes[]
Comment -

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by
motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted per suggested remedy.

Comment ID 210 **Topic**

Name Bob Noseworthy
Email ren@iol.unh.edu
Phone 603 862 4342
Fax 603 862 1915
Co. UNH InterOperability Lab

Cl 36 **SC** 36.3.7 **P** 36.43 **L** 21

Comment Type T **Comment Status** A

Missing "shall" from PICS
"A device shall be explicitly placed in Loopback mode (i.e., Loopback mode is not the normal mode of operation of a device)."

SuggestedRemedy

Add PICS reference to 36.7.4.1.7 PMA functions
Item - PMAx
Feature - Loopback mode entry
Subclause - 36.3.7
Status - M
Support - Yes[]
Comment - must be explicitly set

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. An alternate remedy was selected as follows:

In 36.3.7, page 36.42, line 53, change "Loopback mode shall be provided" to "Loopback mode shall be provided as specified in this subclause"

In line 54, change "shall be" to "are".

On page 36.43, line 21, change "shall be" to "is".

Comment ID 211 **Topic**

Name Bob Noseworthy
Email ren@iol.unh.edu
Phone 603 862 4342
Fax 603 862 1915
Co. UNH InterOperability Lab

Cl 36 **SC** 36.3.7.1 **P** 36.43 **L** 30

Comment Type T **Comment Status** A

Missing "shall" in PICS
"Under such conditions, decoded information shall not be presented by the receiver to the GMII until synchronization has been reestablished."

Also, why does this only apply to loopback mode? It seems this type of statement is necessary any time sync_status=3DFAIL.

SuggestedRemedy

Add PICS reference to 36.7.4.1.9 PMA receive functions
Item - PRAx
Feature - Loss of synchronization
Subclause - 36.3.7.1
Status - M
Support - Yes[]
Comment - data not presented to GMII in loopback mode

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. An alternate remedy was selected as follows:
In 36.3.7.1, delete the last sentence.

Comment ID 12 **Topic**

Name Bob Grow
Email bob@xlnt.com
Phone 619-487-9320
Fax 619-487-9768
Co. XLNT

Cl 36 **SC** 36.5.1 **P** 36.44 **L**

Comment Type T **Comment Status** R

36.5.1 Should not be normative. The GMII is not an external interface, and therefore cannot be conformance tested. These delay numbers are for the clause 42 delay budget. Replace the paragraph with suggestion below.

SuggestedRemedy

The delay assumptions for 1000BASE-X PHYs are specified in table 36-9. This table applies for all 1000BASE-X PMDs.

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
In clause 35, the electrical characteristics are mandatory when the GMII is used. We agree with this. We do not see a difference between the delay constaints and the electrical characteristics and believe that both should be mandatory when the GMII is used. Rather than make 36.5.1 informative, we believe that 35.2.4 should be mandatory.

Comment ID 20 **Topic**

Name Howie Johnson
Email howiej@sigcon.com
Phone 425 556 0800
Fax 425 881 6149
Co. Signal Consulting

Cl 36 **SC** 36A.4 **P** 36A.2 **L** 44

Comment Type T **Comment Status** A

The math is wrong. Looks like a typo. 774 does not equal 2 + 12*64, however, 774 does equal 2 + 12*64 + 4

SuggestedRemedy

Delete closing parenthesis after the word sequence.
Add closing parenthesis at the end of the sentence (line 45).

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted in principle. The quantity 774 actually includes the FCS. The accepted change is to correct the quantity of data octets to 770.

Comment ID 21 **Topic**

Name Howie Johnson
Email howiej@sigcon.com
Phone 425 556 0800
Fax 425 881 6149
Co. Signal Consulting

Cl 36 **SC** 36A.4 **P** 36A.2 **L** 51

Comment Type T **Comment Status** A

On P36A.3/L1 what is supposed to be the second data octet is erroneously labelled the "last byte of the modified RPAT".

SuggestedRemedy

Change line 51 to read:

DISPARITY FLIP: The first two octets of data in the continuous random test pattern packet

BE 5

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. Replace text on page 36A.2, lines 51 through 55, and page 36.A3, lines 1 through 3, with the provided text.

Comment ID 200 **Topic**

Name Kevin Daines
Email kdaines@packetengines.com
Phone 509-922-9190
Fax 509-922-9185
Co. Packet Engines

Cl 36 **SC** 36A.4 **P** 36A.2 **L** 49

Comment Type T **Comment Status** A

The start delimiter should be D5 and not 5D.

SuggestedRemedy

Change PREAMBLE/SFD of "5D" to "D5" in lines 32 and 49.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted per suggested remedy.

Comment ID 43 **Topic**

Name Arthur Low
Email alow@plaintree.com
Phone +1 613 831 8300
Fax +1 613 831 3283
Co. Plaintree Systems

Cl 36 **SC** Fig 36-7b **P** 36.30 **L** 44

Comment Type T **Comment Status** R

For each error in the data stream, the receive PCS branches to state RX_DATA_ERROR where it sends a single data error to the PCS client, then returns to monitoring the receive stream. However, when an error occurs during extension, the receive PCS latches-up in state EXTEND_ERR. I believe that RX_DATA_ERROR represents the most appropriate model and that the operation of EXTEND_ERR would be improved if it was consistent with that model.

SuggestedRemedy

Remove the current exit conditions from state EXTEND_ERR. Add an arc from state EXTEND_ERR to state EPD2_CHECK_END on the condition SYNC_UNITDATA.indicate.

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
If it ain't broke, don't fix it.

Comment ID 8 **Topic**

Name Dalit Sagi
Email dalit.sagi@gpsemi.com
Phone 408-461-6243
Fax 408-4385576
Co. GEC Plessey semi

Cl 36 **SC** fig 36-7b **P** 36.30 **L** 34

Comment Type T **Comment Status** A

if AN is disabled and the partner starts to send C codes the RCV state machine will be locked in C codes forever.

SuggestedRemedy

Add an arc from RCV_C_CODE state back to IDLE_K when an_enable =3D FALSE * SYNC_UNITDATA.indicate (/K28.5/*EVEN) so if AN disabled and the ANEG SM will stay inactive - the RCV will not stay in the C code state.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. Add a transition from state RCV_C_CODE to state IDLE_K on the condition that:
mr_an_enable =3D FALSE * SYNC_UNITDATA.indicate([/K28.5/] * EVEN)

Comment ID 42 **Topic**

Name Scott Mason
Email smason@plaintree.com
Phone +1 613 831 8300
Fax +1 613 831 3283
Co. Plaintree Systems

Cl 36 **SC** Fig 36-7b **P** 36.30 **L** 24

Comment Type T **Comment Status** A

Optimization.

The end delimiter can become corrupted. Also, the transmit PCS does not send an end delimiter when its client sends data immediately followed by carrier-extend error propogation.

When not bursting, the receive PCS recovers context following a missing or corrupted end delimiter by detecting the IDLE stream in the inter-frame gap. A similar capability can be provided during bursts by recognizing /R//R//R/ as the burst inter-frame gap fill. At all times, receiving /R//R//R/ without a preceding end delimiter is a clear indication that the end delimiter was missing or corrupted. Recovery on detection of /R//R//R/ would prevent single errors from affecting two frames of a burst.

SuggestedRemedy

In figure 36-7b, add a state EARLY_END_EXT. Add an arc from state RECEIVE to state EARLY_END_EXT under the condition check_end=3D/R//R//R/. In state EARLY_END_EXT, set RX_ER <=3D TRUE in order to signal a data error to the PCS client. Add an arc from state EARLY_END_EXT to state EPD2_CHECK_END under the condition SYNC_UNITDATA.indicate.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. Resolved per the resolution of comment 39.

Comment ID 203 **Topic**

Name Stephen Haddock
Email shaddock@extremenetworks.com
Phone 408 683 2812
Fax 408 342 0990
Co. Extreme Networks

Cl 36 **SC** Tables 36-9 and **P** 36.44 **L** 35

Comment Type T **Comment Status** A

Contents of the tables do not reflect the full bit budget allocated to the PHY, and are inconsistent with the values used to calculate the maximum topologies in clause 41.

SuggestedRemedy

Contents of Table 36-9 "Max" column should be:
TX_EN sampled to MDI Ouput 128
MDI input to CRS assert 144
MDI input to CRS deassert 144
MDI input to COL assert 144
MDI input to COL deassert 144
TX_EN sampled to CRS assert 16
TX_EN sampled to CRS deassert 16

Table 36-9 "Min" column should be blank (remove question marks).

Contents of Table 36-10 "Max" column should be:
MAC transmit start to MDI output 184
MDI input to MDI output 440
(worst case nondeferred transmit)
MDI input to collision detect 240
MDI input to MDI output Jam 440
(worst case collision response)

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted per suggested remedy.

Comment ID 114 **Topic**

Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 36 **SC** 36.1.7 **P** 36.4 **L** 45

Comment Type E **Comment Status** A

Reference Clause 14.2.3.2 is not in 802.3u.

SuggestedRemedy

Replace "802.3u" with "802.3"

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted per suggested remedy.

Comment ID 116 **Topic**
Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 36 **SC** 36.2.4.7 **P** 36.9 **L** 42-45

Comment Type E **Comment Status** A

Statement that "all other undefined ordered_sets may result in a false carrier...." is misleading. False carrier is a specific case where a device is in idle and gets a non-idle codeword that is not an /S/. This paragraph is talking about what happens when a k28.5 is followed by an invalid codeword, which is really nothing or little to do with false carrier.

SuggestedRemedy

Delete sentence starting with "All other undefined ordered set may result in false carrier...." or reword.

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. The following changes are made:

Delete the second paragraph of 36.2.4.7.

Add to the end of 36.2.4.12 the following sentence:

"An ordered set which consists of two code_groups, the first of which is /K28.5/ and the second of which is a data code_group other than /D21.5/ or /D2.2/, shall be treated as an /I/ ordered_set."

Changed 36.7.4.1.4 PICS entry OS1 to reference 36.2.4.12 instead of 36.2.4.7.

Comment ID 117 **Topic**
Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 36 **SC** 36.2.4.9 **P** 36.15 **L** 47-55

Comment Type E **Comment Status** A

Second paragraph points out that a comma code can be generated across word boundaries with a /K28.7/ + /other specific codes/. While this statement is true, it is misleading/confusing because the Clause 36 protocol wants to avoid such a situation for synchronization reasons.

SuggestedRemedy

Either delete paragraph in Lines 52-55 or add a sentence to the end stating that "A comma across the boundaries of any two adjacent code_groups will cause loss of synchronizaiton, so ordered_sets which produce this result are not allowed."

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. Add the following sentence to the end of the last paragraph of 36.2.4.9:

"A comma across the boundaries of any two adjacent code_groups may cause code_group realignment (see 36.3.2.4)."

Comment ID 118 **Topic**
Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 36 **SC** 36.2.5.1.3 **P** 36.22 **L** 30

Comment Type E **Comment Status** A

Replace "rx_Config_Reg" with "rx_Config_Reg<D15:D0>".

SuggestedRemedy

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. Corrected per comment text.

Comment ID 212 **Topic**
Name Rich Taborek
Email rich_taborek@amdahl.com
Phone 408-746-6533
Fax 408-746-7000
Co. Amdahl Corporation

Cl 36 **SC** 36.2.5.2.2, figure **P** 36.30 **L**

Comment Type E **Comment Status** A

Simplify the transition condition from state EPD_CHECK_END to EXTEND_ERR to= "ELSE"

SuggestedRemedy

Simplify the transition condition from state EPD_CHECK_END to EXTEND_ERR to= "ELSE"

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted per the suggested remedy.

Comment ID 202 **Topic**
Name Ben Brown=09
Email bbrown@ctron.com
Phone 1 603 337 5025
Fax 1 603 337 5207
Co. Cabletron Systems

Cl 36 **SC** 36.2.5.2.6 **P** 33 **L** 31

Comment Type E **Comment Status** A

The 2_good_cgs is not well specified. Also, the 2_good_cgs needs to be 4_good_cgs to detect misaligned /C/.

SuggestedRemedy

Delete the function 2_good_cgs from figure 36-9 and 36.2.5.1.4.
In 36.2.5.2.6, lines 14 and 15, replace "two using the 2_good_cgs function" with "four code_groups".
Delete all transitions on 2_good_cgs.
Add new counter subclause and to it, new counter good_cgs.
To figure 36.9 add the states: SYNC_ACQUIRED_2A, SYNC_ACQUIRED_3A, and SYNC_ACQUIRED_4A.
Add a transition from state SYNC_ACQUIRED_2A to state SYNC_ACQUIRED_3 on the condition:

```
PMA_UNITDATA.indicate *
(
  rx_code_group =3D /COMMA/ * rx_even =3D TRUE +
  rx_code_group =3D /INVALID/
)
```

Add a transition from state SYNC_ACQUIRED_2A to state SYNC_ACQUIRED_1 on the condition:

```
PMA_UNITDATA.indicate * good_cgs =3D 3 *
not (
     rx_code_group =3D /COMMA/ * rx_even =3D TRUE +
     rx_code_group =3D /INVALID/
   )
```

Add a transition from state SYNC_ACQUIRED_2A to state SYNC_ACQUIRED_2A on the condition ELSE.
Add a transition from state SYNC_ACQUIRED2 to state SYNC_ACQUIRED_2A on the condition ELSE.
In state SYNC_ACQUIRED_2, add an assignment good_cgs <=3D 0.
In state SYNC_ACQUIRED_2A, add the assignments good_cgs <=3D good_cgs + 1= and
rx_even <=3D !rx_even.
In state SYNC_ACQUIRED_2A, add the message SYNC_UNITDATA.indicate.
Add a transition from state SYNC_ACQUIRED_3A to state SYNC_ACQUIRED_4 on the condition:

```
PMA_UNITDATA.indicate *
(
  rx_code_group =3D /COMMA/ * rx_even =3D TRUE +
```

rx_code_group =3D /INVALID/
)
Add a transition from state SYNC_ACQUIRED_3A to state SYNC_ACQUIRED_2 on the condition:
PMA_UNITDATA.indicate * good_cgs =3D 3 *
not (
rx_code_group =3D /COMMA/ * rx_even =3D TRUE +
rx_code_group =3D /INVALID/
)
Add a transition from state SYNC_ACQUIRED_3A to state SYNC_ACQUIRED_3A on the condition ELSE.
Add a transition from state SYNC_ACQUIRED3 to state SYNC_ACQUIRED_3A on the condition ELSE.
In state SYNC_ACQUIRED_3, add an assignment good_cgs <=3D 0.
In state SYNC_ACQUIRED_3A, add the assignments good_cgs <=3D good_cgs + 1= and
rx_even <=3D !rx_even.
In state SYNC_ACQUIRED_3A, add the message SYNC_UNITDATA.indicate.
Add a transition from state SYNC_ACQUIRED_4A to state LOSS_OF_SYNC on the condition:
PMA_UNITDATA.indicate *
(
rx_code_group =3D /COMMA/ * rx_even =3D TRUE +
rx_code_group =3D /INVALID/
)
Add a transition from state SYNC_ACQUIRED_4A to state SYNC_ACQUIRED_3 on the condition:
PMA_UNITDATA.indicate * good_cgs =3D 3 *
not (
rx_code_group =3D /COMMA/ * rx_even =3D TRUE +
rx_code_group =3D /INVALID/
)
Add a transition from state SYNC_ACQUIRED_4A to state SYNC_ACQUIRED_4A on the condition ELSE.
Add a transition from state SYNC_ACQUIRED4 to state SYNC_ACQUIRED_4A on the condition ELSE.
In state SYNC_ACQUIRED_4, add an assignment good_cgs <=3D 0.
In state SYNC_ACQUIRED_4A, add the assignments good_cgs <=3D good_cgs + 1= and
rx_even <=3D !rx_even.
In state SYNC_ACQUIRED_4A, add the message SYNC_UNITDATA.indicate.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted per suggested remedy.

Comment ID 207 **Topic**

Name Bob Noseworthy
Email ren@iol.unh.edu
Phone 603 862 4342
Fax 603 862 1915
Co. UNH InterOperability Lab

Cl 36 **SC** 36.2.5.2.6 **P** 36.32 **L** 16

Comment Type E **Comment Status** A

Redundant "shall": identical to statement on line 3

"The PCS shall implement the Synchronization process as depicted in figure 36-9 including compliance with the associated state variables as specified in 36.2.5.1."

SuggestedRemedy

strike sentance on line 16 quoted above.

modify line 3 to read:
"The PCS shall implement the Synchronization process as depicted in figure=

36-9 including compliance with the associated state variables as specified in 36.2.5.1."

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. An alternate remedy was selected as follows:

In 36.2.5.2.6, delete the first sentence in the first paragraph
and move the last sentence to become the first sentence.

In line 11, replace "shall enter" with "enters".

Comment ID 214 **Topic**

Name Rich Taborek
Email rich_taborek@amdahl.com
Phone 408-746-6533
Fax 408-746-7000
Co. Amdahl Corporation

Cl 36 **SC** 36.3.1.5, figure 3 **P** 36.30 **L**

Comment Type E **Comment Status** A

Remove extraneous term "mr_page_rx <=3D FALSE" from states AN_RESTART and ABILITY_DETECT.

SuggestedRemedy

Remove extraneous term "mr_page_rx <=3D FALSE" from states AN_RESTART and ABILITY_DETECT.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted per the suggested remedy.

Comment ID 201 **Topic**

Name John Wolcott=09
Email john_wolcott@ccm.jf.intel.com
Phone 1 503 264 9167
Fax 1 503 264 9903
Co. Intel

Cl 36 **SC** 36A.1 **P** 36A.1 **L** 31

Comment Type E **Comment Status** A

There are two periods at the end of the line.

SuggestedRemedy

Strike the redundant period.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted per suggested remedy.

Comment ID 119 **Topic**

Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 37 **SC** 37.2.1.3 **P** 37.5 **L** 46-47

Comment Type TR **Comment Status** R

The current definition for the PAUSE=3D1, ASM-DIR=3D1 case can cause an erroneous result. For example, a NIC may want to receive Pause frames but not send them. To do this, according toTable 37-5, the NIC would have to set Pause=3D1, ASM_DIR=3D1.This can produce a wrong result if the remote= link
partner also sends a 11, because then the NIC would be forced to enable both receive and transmit Pause, something it doesn't want to do for system reasons. The problem is due to defining the PAUSE=3D1, ASM_DIR=3D1= in
Table 35-2 to cover both symmetric and receive pause, instead of just receive pause only.

SuggestedRemedy

Change capability for PAUSE=3D1, ASM_DIR=3D1 to "Asymmetric PAUSE toward= local
device". Change Table 37-5 results to reflect this new definition.

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Rejected. No node is forced to send pause frames. For this application, symmetric pause and asymmetric pause toward local device are equivalent. See table 37-2.

Comment ID 121 **Topic**

Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 37 **SC** 37.2.6.1.1 **P** 37.14 **L** 14-17

Comment Type TR **Comment Status** R

This paragraph seems to say that when a device has Autonegotation disabled, the base page in Register 5 would control the operational modes that the device should be in (Full/Half Duplex, Pause, Offline etc.). However, Clause 22 says on P. 22.4, L18-25 (of D3) that Register 0 controls the operation of full and half duplex when AutoNegotation is off. = This
seems to be a conflict.

It would make sense to follow the old Fast Ethenet way (Register 0 rules when AutNeg=3Ddisabled), but Register 0 doesn't contain all the necessary bits for gigabit, such as PAUSE, ASYM_DIR, RF (Offline), and any new bits that will be defined later.

SuggestedRemedy

Open for discussion.

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.

No consensus reached on the issue of Manual Configuration. This comment will be re-submitted as a P802.3z Working Group ballot comment by the P802.3z PCS Sub-Task Force editor, Rich Taborek.

Comment ID 13 **Topic**

Name Devendra Tripathi
Email devendra.tripathi@xaqti.com
Phone +1 408 487-0806
Fax +1 408 487-0801
Co. XaQti Corporation

Cl 37 **SC** **P** 14,15,25 **L**

Comment Type T **Comment Status** R

1. The bit 11 (15:0 convention) of 37-6 (advertisement register) is marked as reserved. This bit is the source of the toggle bit of the first next page register. (The subsequest ones are invert of previous ones.)

2. The bit 11 (15:0 convention) of 37-7 (link partner ability register) is marked as reserved. This bit is the source of the toggle bit of the first next page register of the link partner.

3. The time 10 ms for link timer done was defined such that if link partner re-starts the autonegotiation, the base register saved for long enough time that the host may be able to read it via MDC-MDIO interface. Also it was going to provide long time so that both link partners may get in sync before auto-negotiation data transfer starts. During the remaining part of the transaction, this condition does not hold good becuase of hand shake nature of the protol. Inspite of that we kept the same link_timer_done in the branch from COMPLETE_ACK to NEXT_PAGE_WAIT for the sake of simplicity and to avoid another timer. This proves to be very costly from simulation and debugging point of view. We see a few quick pulses and then long gap. Please note that the use of same timer just simplifies the documentation because in implementation same timer can any way used for smaller duration. Also in clause 28, the corresponding requirement was 6-8 cycles only.

4. The "INVALID" condition in the main branch leading to AN_ENABLE state makes the state machine too delicate. Given that autonegotiation process is lenthy and elaborate one it is not advisable to trigger it based on some single bit errors. Since sync_status variable is already there to take care of invalid codes and since invalid codes will not be used for any any state transitions, it can be easily removed.

SuggestedRemedy

1. The bit 11 (15:0 convention) of 37-6 table should be named as toggle bit and it should be a read write bit.

2. The bit 11 (15:0 convention) of table 37-7 should be named as toggle bit and it should be a read only bit.

3. I propose to replace, in the branch from COMPLETE_ACK to NEXT_PAGE_WAIT, the term link_timer_done by "ack_finished" (as was in D2.1) and defined ack_finished as a variable which becomes true after remaining 8-16

acknowledge cycles are over. The implementer can easily map this requirement into timer.

4. Remove the "INVALID" condition from the main branch entering the state AN_ENABLE.

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.

1. Rejected. Operation is identical to clause 28. The toggle bit is derived from a reserved bit. Correct operation is assured for either value of the bit. Operation is adequately described by the text.

2. Rejected. Operation is identical to clause 28. The toggle bit is derived from a reserved bit. Correct operation is assured for either value of the bit. Operation is adequately described by the text.

3. Rejected. Timer issues were resolved and timers accepted by motion at Ft. Lauderdale interim.

4. Rejected. Without the INVALID message, invalid code_groups would not be detected by the auto-negotiation function. The current operation allows auto-negotiation to complete even in the presence of a high bit error rate, relative to required bit error rate.

Comment ID 1 **Topic**

Name Benjamin Brown
Email bbrown@ctron.com
Phone +1 603 337 5025
Fax +1 603 337 5208
Co. Cabletron Systems

Cl 37 **SC** 37 **P** 43D **L** Fig. 37-6

Comment Type T **Comment Status** A

The variable rx_Config_Reg is used in state COMPLETE_ACKNOWLEDGE for several different purposes. All of these purposes, except one, should use the value of rx_Config_Reg which was valid with acknowledge_match. The exception is the transition to state AN_ENABLE. This transition should use the current value of rx_Config_Reg.

SuggestedRemedy

Create a new variable, np_rx, which is assigned a value upon entry to state COMPLETE ACKNOWLEDGE, the same way the variable toggle_rx is assigned, but using bit 15 rather than 11. Then use this new variable in the transitions to states NEXT_PAGE_WAIT and IDLE_DETECT, instead of the variable rx_Config_Reg<NP>. This way, rx_Config_Reg can always contain a current value and the toggle_rx and np_rx variables will hold values associated with the acknowledge_match,

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. The following changes are made:

Add a new variable, np_rx to 37.3.1.

In 37.3.1.5, figure 37-6, state COMPLETE_ACKNOWLEDGE, add an assignment= np_rx <=3D rx_Config_Reg<NP> Change the transition from state COMPLETE_ACKNOWLEDGE to state IDLE_DETECT to become the condition: link_timer_done * tx_Config_Reg<NP> =3D 0 * np_rx =3D 0

Change the transition from state COMPLETE_ACKNOWLEDGE to state NEXT_PAGE_WAIT to become the condition: link_timer_done * mr_np_loaded=3DTRUE * (tx_Config_Reg<NP>=3D1 + np_rx=3D1=)

Comment ID 53 **Topic**
Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 4342
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.1.4.2.2, **P** 37.4, 37. **L**

Comment Type T **Comment Status** R

Table 37-9 on page 37.17 defines Clause 37 - Manual Configuration as bits 0.12 and 0.5 both being set to 0.

37.1.4.2.2 states that Manual Configuration is "recommended" if GMII Management is not present.

But, the PICS in 37.5.3.1 list Manual Configuration as Optional. It would appear to be mandatory, at least if GMII Management is in use.

SuggestedRemedy

Make support for Manual Configuration Mandatory, or at least, Mandatory if GMII Management is present.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.

No consensus reached on the issue of Manual Configuration. This comment will be re-submitted as a P802.3z Working Group ballot comment by the P802.3z PCS Sub-Task Force editor, Rich Taborek.

Comment ID 49 **Topic**
Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 4342
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.2.1.4.3 **P** 37.7 **L** 3,4

Comment Type T **Comment Status** R

How can a remote fault indication of Link_Failure ever be transmitted?
Upon detection of sync_status=3DFAIL, AN will reset and send
tx_Config_Reg<D15:D0>=3D0. Thus, a non-zero Config Reg can only be sent=
once
sync_status=3DOK and link_timer has expired.

SuggestedRemedy

Allow a remote fault indication to be sent during the AN_ENABLE and
AN_RESTART states. ie: change the Config Reg setting to
tx_Config_Reg<D15:D14>=3D0 and tx_Config_Reg<D11:D0>=3D0
This may also require all ability_match=3DTRUE*rx_Config_Reg<D15:D0>=3D0 to=
be
changed as well.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Rejected. Replace the text of 37.2.1.4.3 with:

"A Remote Fault encoding of 0b10 indicates that the local device has=
detected
a Link_Failure condition indicated by loss of synchronizaton. While
sync_status =3D FAIL, remote fault information is not signalled. When
sync_state becomes TRUE, stored remote fault information is signalled."

Comment ID 4 **Topic**

Name Bob Noseworthy
Email ren@iol.unh.edu
Phone 603-862-4342
Fax 603-862-1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.2.3.3 **P** 37.10 **L** 40-44

Comment Type T **Comment Status** R

The Selector Field is referenced but never defined.

SuggestedRemedy

strike all references to Selector Field and reference annex 28C for definition of Message Codes

Proposed Response **Response Status** Z

Withdrawn.

Comment ID 48 **Topic**

Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 4342
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.2.6 **P** 37.13 **L** 43, 44

Comment Type T **Comment Status** R

"Where no physical embodiment of the GMII exists, an equivalent to management registers 0,1,4,5,6,7,8 and 15 are recommended to be provided." The problem, as I see it, is that there are several cases where specific management registers are referenced for mandatory behavior (Aneg complete bit 1.5 // AN Next Page // etc)

SuggestedRemedy

replace "are recommended to be provided." to "shall be provided", I see this as a necessity for testing purposes as the meaning of, and access to, "bit 1.5", and any other management register, would then be consistent across any implementation

alternative remedy - convert all references to management functionality to an appropriate Optional reference

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.

No consensus reached on the issue of Manual Configuration. This comment will be re-submitted as a P802.3z Working Group ballot comment by the P802.3z PCS Sub-Task Force editor, Rich Taborek.

Comment ID 9 **Topic**
Name Howard Frazier
Email hfrazier@cisco.com
Phone +1 408 527 7607
Fax +1 408 527 8254
Co. Cisco Systems

Cl 37 **SC** 37.3.1.5 **P** 37.25 **L** 8

Comment Type T **Comment Status** A

I believe that a single bit error can cause a loss of synchronization, which will cause the Auto-Negotiation state machine to transition to AN_ENABLE, which will restart Auto-Negotiation. This will have the effect of destroying additional packets beyond the packet which encountered the single bit error.

The problem arises because a single bit error can result in an arbitrarily long sequence of disparity errors, and such a sequence will result in a transition to the LOSS_OF_SYNC state in the synchronization state diagram. Synchronization may not be re-acquired until the next inter-packet gap interval. This behavior is expected, and it is known that this sequence of events can occur. I have identified several patterns which can cause this when a single bit error is introduced.

The delimiters, IDLE sequences, and coding rules for Fibre Channel and Gigabit Ethernet have been chosen such that a single bit error should not corrupt more than one packet. Unfortunately, the behavior of the Auto-Negotiation state machine makes it a near certainty that a loss of synchronization will cause the loss of multiple packets.

SuggestedRemedy

I suggest the addition of a timer to the transition conditions which restart Auto-Negotiation. Note that such a timer was actually employed in D1, but was deleted as a result of Motion #6 during the closing sesssion at the San Diego meeting. The use of a timer will eliminate the "hair trigger" response of Auto-Negotiation to a single bit error.

Specifically, I suggest that sync_status=3DFail be qualified by a timer or counter which will ensure that the condition sync_status=3DFail persists for at least the maximum duration of a burst of packets before this condition is used to restart Auto-Negotiation. The minimum duration would be 78 microseconds. For the sake of implementation convenience, the link_timer, which has a duration of 10 (+10/-0) milliseconds could be used. This would ensure that the link was truly broken before Auto-Negotiation was restarted.

One way to accomplish this in the standard is to create a new variable, called an_sync_status, which could have the following definition:

an_sync_status

Qualified version of sync_status for use by Auto-Negotiation

Values: TRUE when the variable sync_status defined in 36.2.5.1.3 is TRUE.
FALSE when the variable sync_status defined in 36.2.5.1.3 is FALSE for a duration of greater than or equal to link_timer.

My observation is that this essentially represents a re-triggerable watch-dog timer which will re-start Auto-Negotiation whenever the link dies.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. The following changes are made:

Add the specified variable an_sync_status to 37.3.1 defined as follows:

an_sync_status
Qualified version of sync_status for use by Auto-Negotiation to detect a sync_status timeout condition.
Values: TRUE; The variable sync_status defined in 36.2.5.1.3 is TRUE.
FALSE; The variable sync_status defined in 36.2.5.1.3 is FALSE for a duration of greater than or equal to link_timer.

In 37.3.1.5, figure 37-6, replace the condition sync_status =3D FAIL with= the condition
an_sync_status =3D FALSE in the global entry to state AN_ENABLE.

Comment ID 50 **Topic**

Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 4342
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.5.3.1, 37 **P** 37.27, 37 **L**

Comment Type T **Comment Status** R

Remote fault functionality is not included in PICS

SuggestedRemedy

Editors Note: Please add a suggested remedy.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
IEEE P802.3z PCS Sub-Task Force alloted comment resolution time expired prior to the resolution of ths comment. This comment will be re-submitted as a P802.3z Working Group ballot comment by the P802.3z PCS Sub-Task Force editor, Rich Taborek.

Comment ID 58 **Topic**

Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 4342
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.5.3.2.1, **P** 37.28 **L** 17, 32

Comment Type T **Comment Status** R

CR4 and TX3 appear to reference the same functionality, which is covered in AN8, the Auto-Negotiation state diagram.

SuggestedRemedy

strike CR4 or TX3, or both.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
IEEE P802.3z PCS Sub-Task Force alloted comment resolution time expired prior to the resolution of ths comment. This comment will be re-submitted as a P802.3z Working Group ballot comment by the P802.3z PCS Sub-Task Force editor, Rich Taborek.

Comment ID 55 **Topic**

Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 4342
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.5.3.2.6, **P** 37.29, 37 **L**

Comment Type T **Comment Status** R

In CR6 - The Next Page bit will be set for as long as the station has next pages to transmit, not just for a duration of link_timer.

The functionality referenced in CR6 is covered in AN8 - Auto-Negotiation state diagram

Similarly for CR5, the functionality referenced is covered in AN8

SuggestedRemedy

strike Item CR5 and CR6

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
IEEE P802.3z PCS Sub-Task Force alloted comment resolution time expired prior to the resolution of ths comment. This comment will be re-submitted as a P802.3z Working Group ballot comment by the P802.3z PCS Sub-Task Force editor, Rich Taborek.

Comment ID 56 **Topic**
Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 4342
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.5.3.2.7 **P** 37.30 **L** 6

Comment Type T **Comment Status** R

MR1 "Register Usage", the comment specifies that "Eight dedicated registers" must be used. I do not see how the presence of 8 distinct registers can be externally verified.

SuggestedRemedy

Strike, or restate the comment as "Management Registers 0,1,4,5,6,7,8 and= 15 are
accessible"

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
IEEE P802.3z PCS Sub-Task Force alloted comment resolution time expired prior to the resolution of ths comment. This comment will be re-submitted as a P802.3z Working Group ballot comment by the P802.3z PCS Sub-Task Force editor, Rich Taborek.

Comment ID 51 **Topic**
Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 1915
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.2.1.4.3 **P** 37.7 **L** 4

Comment Type E **Comment Status** A

Incorrect reference to 36.2.6.2.2

SuggestedRemedy

Change reference to 36.2.5.2.6 "Synchronization" or 36.2.5.1.3 "Variables"

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. Change to refer to both see 36.2.5.1.3 and 36.2.5.2.6.

Comment ID 3 **Topic**
Name Bob Noseworthy
Email ren@iol.unh.edu
Phone 603-862-4342
Fax 603-862-1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.2.3.3.6 **P** 37.12 **L** 9,10

Comment Type E **Comment Status** R

clarify definition by adding reference to bit D11

SuggestedRemedy

logic zero =3D previous value of bit D11 of transmitted Config_Reg value equalled logic one.
logic one =3D previous value of bit D11 of the transmitted Config_Reg value equalled logic zero.

Proposed Response **Response Status** Z

Withdrawn.

Comment ID 215 **Topic**
Name Rich Taborek
Email rich_taborek@amdahl.com
Phone 408-746-6533
Fax 408-746-7000
Co. Amdahl Corporation

Cl 37 **SC** 37.2.4.1 **P** 37.9 **L** 11

Comment Type E **Comment Status** A

Extraneous =D2and the=D3 in the first sentence

SuggestedRemedy

Remove extraneous =D2and the=D3 from the first sentence

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted per the suggested remedy.

Type: TR/technical required T/technical E/editorial
Comment: X/received D/dispatched for consideration A/accepted R/rejected
Response: O/open W/written S/sent to commentor for review C/closed U/unsatisfied Z/withdrawn

Comment ID 120 **Topic**
Name Steve Dreyer
Email sdreyer@seeq.com
Phone
Fax
Co. Seeq Technology

Cl 37 **SC** 37.2.5.3.1 **P** 37.11 **L** 39-51

Comment Type E **Comment Status** A

Figures 37-3 and 37-4 have extra vertical lines in the wrong places.

SuggestedRemedy

Proposed Response **Response Status** W

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Only the mailed copies exhibit this error. Figure 37-2 is also affected.
This problem has been verified to not exist in the source files and online PDF files.

Comment ID 213 **Topic**
Name Rich Taborek
Email rich_taborek@amdahl.com
Phone 408-746-6533
Fax 408-746-7000
Co. Amdahl Corporation

Cl 37 **SC** 37.2.6.1.1, 37.2.6 **P** 37.14, 37 **L**

Comment Type E **Comment Status** A

Incorrect cross references to Clause 35 management registers.

SuggestedRemedy

Corrected cross references to Clause 22 management registers which= previously
referenced Clause 35.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Accepted per the suggested remedy.

Comment ID 54 **Topic**
Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 4342
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.5.3.1, 37 **P** 37.27, 37 **L**

Comment Type E **Comment Status** A

In the PICS, Items CC4 and MR5 are duplicates

SuggestedRemedy

strike one.

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. The following changes are made:

In 37.5.3.1, change item CC4 to become mandatory.

In 37.3.5.2.7, delete item MR5.

Comment ID 52 **Topic**
Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 4342
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.5.3.2 **P** 37.27 **L** 37,38

Comment Type E **Comment Status** A

AN6 - Management Registers requirements is a duplicate of Item MR2
AN7 should be listed under 37.5.3.2.7 Management Registers

SuggestedRemedy

Change Item to "Management Register Support", Mandatory (??), and correct item numbering error. This may be a duplicate of CC2 however, in which case, strike AN6.

Move current Item AN7 to Management Registers, and correct subclause reference (should be 37.2.6.1.4)

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
Agreed. The following changes are made:

In 37.2.5.3.12, line 35, change "shall hold" to "holds".

In 37.5.3.2.7, delete item MR2.

Comment ID 59 **Topic**
Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 4342
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.5.3.2.2, **P** 37.28 **L** 30, 41

Comment Type E **Comment Status** R

TX2 and RX1 Subclause references are incorrect

SuggestedRemedy

change TX2 reference from 37.2.3.1 to 37.2.3
change RX1 reference from 36.2.5.2.1 to 36.2.5.2.2

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
IEEE P802.3z PCS Sub-Task Force alloted comment resolution time expired prior to the resolution of ths comment. This comment will be re-submitted as a P802.3z Working Group ballot comment by the P802.3z PCS Sub-Task Force editor, Rich Taborek.

Comment ID 57 **Topic**
Name Bob Noseworthy=09
Email ren@iol.unh.edu
Phone 1 603 862 4342
Fax 1 603 862 1915
Co. UNH InterOperability Lab

Cl 37 **SC** 37.5.3.2.5 **P** 37.29 **L** 32, 33

Comment Type E **Comment Status** R

Clarify Feature name for NP6 "Unformatted Page Ordering"

SuggestedRemedy

Rename NP6 "Message Code Referencing Unformatted pages"

Proposed Response **Response Status** C

Response generated by IEEE P802.3z PCS Sub-Task Force and accepted by motion by P802.3z Task Force on July 9,1997 in Maui, HI.
IEEE P802.3z PCS Sub-Task Force alloted comment resolution time expired prior to the resolution of ths comment. This comment will be re-submitted as a P802.3z Working Group ballot comment by the P802.3z PCS Sub-Task Force editor, Rich Taborek.

Comment ID 149 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 10.1 **P** 38.17 **L** 44

Comment Type T **Comment Status** A

#16

Maintaining polarity needs to be specific.

SuggestedRemedy

Move sentence two from subclause 38.10.2 (line 3) to this subclause. Presently the text describing the positions of the Tx and Rx ports in a receptacle are informative. They must be normative to ensure polarity maintenance within a structured cabling environment.

Proposed Response **Response Status** W

Accept moving sentence to line 38, page 38.17 as modified - "The receive= side
of the receptacle shall be located on the left when viewed looking into the= optical
ports with the keys on the bottom surface.

Comment ID 148 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 10.1 **P** 38.17 **L** 43

Comment Type T **Comment Status** A

#15

Reference to "easy connection and reconnection" is meaningless because it is non-specific.

SuggestedRemedy

Delete text.

Proposed Response **Response Status** W

OK, section has been deleted

Comment ID 134 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 2.1 **P** 38.3 **L** 42

Comment Type T **Comment Status** A

#1

The present definition of the standard reference point for the PMD sublayer= is
the system bulkhead. The bulkhead is taken to mean the standard SC
receptacle defined in Figure 38-5. The standard reference points for the= PMD
sublayer should not be defined at the system bulkhead for the transmitter. = The
reference point should instead be the output from a short (=9C 5 m) patch= cord
attached to the receptacle. This definition is in line with previous= definitions
(10BASE-F) and with structured cabling systems. The reference point for the=

optical receiver should be at the output of standard SC connector= terminating the
exit end of the fiber media that will be plugged into the receiver's SC= receptacle.

SuggestedRemedy

Modify paragraph 1 to read:
For purposes of system conformance, the PMD sublayer is standardized at the=

following points. The optical transmit signal is defined at the output end= of a 2
meter patch cord (TP2) connected to the transmitter receptacle defined in
38.10.1. The optical receive signal is defined at the output of the cable= plant
(TP3) connected to the receiver receptacle defined in 38.10.1.

Modify Figure 38-1 to reflect the above changes. The system bulkheads should=

be at the edges of the boxes labeled Optical PMD Transmitter and Optical PMD=

Receiver. Patch cords should be drawn between these bulkheads and the= optical
cable plant. TP2 is at the exit end of the Transmitter patch cord. TP3 is at= the

exit end of Receiver patch cord.

Proposed Response **Response Status** W

Accept, with revision

Modify paragraph 1 to read:
For purposes of system conformance, the PMD sublayer is standardized at the=

following points. The optical transmit signal is defined at the output end=
of a 5
meter or less patch cord (TP2) of a type consistent with the link type=
connected
to the transmitter receptacle defined in 38.10.1. The optical receive signal=
is
defined at the output of the cable plant
(TP3) connected to the receiver receptacle defined in 38.10.1.

Modify Figure 38-1 to reflect the above changes. The system bulkheads should=

be at the edges of the boxes labeled Optical PMD Transmitter and Optical PMD=

Receiver. A patch cord should be drawn between the transmitter bulkhead and=

the optical cable plant. TP2 is at the exit end of the Transmitter patch=
cord. TP3
is at the exit end of the cable plant.
Note: a graphical redraw is necessary for Figure 38-1.

Comment ID 137 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 3.1 **P** 38.6 **L** 18

Comment Type T **Comment Status** A

#4

Extinction ratio values are missing from Table 38-2.

SuggestedRemedy

Add a row for the extinction ratio values
used in spread sheet analysis.

Proposed Response **Response Status** W

OK, Add row with values of 25 & 25 dB.

Comment ID 177 **Topic**
Name Bob Dahlgren
Email bob@fujikura.com
Phone 408-988-7407
Fax 408-727-3460
Co. Fujikura America Inc.

Cl 38 **SC** 38.11.4.3 **P** 38.22 **L** 28

Comment Type T **Comment Status** A

Revisiting comment #69 in which we changed the column headings for MMF to read "50/62.5 MMF value". In effect we accepted the first sentence of the=

suggested remedy and rejected the rest. I believe there was an intent to=
delete
the PICs entry in comment 69.

SuggestedRemedy

Delete PICs item PML-1 from subclause 38.11.4.3

Proposed Response **Response Status** W

Accept

Comment ID 64 **Topic**
Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.2.4.1 **P** 38.4 **L** 51

Comment Type T **Comment Status** R

Even though signal detect is optional, its behavior should be more tightly specified for cases when it is implemented. The PICS only mandate that SIGNAL_DETECT=3DFAIL when the link is unplugged or the remote transmitter is turned off. However, the PICS do no prevent an implementation from setting SIGNAL_DETECT=3DFAIL when the signal is at the limits of the receive sensitivity. This is because the commentary on margins contains no "shalls". If "shalls" were added, they would be meaningless unless attached to quantitative values.

SuggestedRemedy

Specify signal detect assertion and deassertion thresholds in the form of a "shall" statement with quantitative values. Propose that the "shall assert" level be the minimum receiver sensitivity, and the "shall deassert" level be this level minus 10 dBm. These parameters should be added to tables 38-4 and 38-9.

Proposed Response **Response Status** W

Reject: It is the intent of the committee to allow a broad range of implementations. Specific assert levels could unduly restrict specific implementations.

Comment ID 129 **Topic**
Name Jonathan Thatcher (for PMD working group)
Email jonathan_thatcher@vnet.ibm.com
Phone 507-253-2867
Fax 507-253-1438
Co. IBM AS/400 Division

Cl 38 **SC** 38.4.2 **P** 38.10 **L** 3

Comment Type T **Comment Status** A

Add phrase "for purposes of overshoot and undershoot only."

SuggestedRemedy

See comment

Proposed Response **Response Status** W

Comment was accepted
Put "The transmit mask is not used for response time and jitter= specification" into
38.5.5 replacing last sentence in line 37-38 and note in 40 and remove all= other
eye/rise/fall..from clause.

Comment ID 72 **Topic**
Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.5.1 **P** 38.11 **L** 09

Comment Type T **Comment Status** A

Referring to "A short patch cable from...shall...". The word "short" is not quantitative and makes conformance difficult to verify.

SuggestedRemedy

Suggest change "A short patch cable..." to "A patch cable no longer than 0.5 meter in length..." Incorporate appropriate changes to the PICS (38.11.4.4).

Proposed Response **Response Status** W

Accept with change to no longer than five meters for patch cable length.

Comment ID 126 **Topic**
Name Jonathan Thatcher (for PMD working group)
Email jonathan_thatcher@vnet.ibm.com
Phone 507-253-2867
Fax 507-253-1438
Co. IBM AS/400 Division

Cl 38 **SC** 38.5.5 **P** 38.11 **L** 41

Comment Type T **Comment Status** R

Change word "ringing" in Note to "undershoot"

SuggestedRemedy

See comment

Proposed Response **Response Status** W

Reject - see comment 129

Comment ID 73 **Topic**
Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.5.6 **P** 38.12 **L** 42

Comment Type T **Comment Status** A

The measurement procedure for transmit rise/fall times should be mandated.

SuggestedRemedy

Suggest change "Transmit rise/fall times are measured..." to "Transmit rise/fall times shall be measured..." and add the appropriate items to the PICS (38.11.4.4)

Proposed Response **Response Status** W

OK

Comment ID 128 **Topic**
Name Jonathan Thatcher
Email jonathan_thatcher@vnet.ibm.com
Phone 507-253-2867
Fax 507-253-1438
Co. IBM AS/400 Division

Cl 38 **SC** 38C **P** 38.31 **L** All

Comment Type T **Comment Status** A

Need to remove text: "******worst case data pattern ******"

SuggestedRemedy

Remove Annex 38C entirely. This annex would be necessary if 3z decides to=
use
a scope method instead of a BERT method to measure total jitter. Otherwise,=

wait until FCJWG finishes its work before added to standard.

Proposed Response **Response Status** W

OK, rewrote subclause 38.5.9 to allow Annex 38C to be deleted and changed 38.5.10 and 38.5.11 to "according to the method in FC-PH."

38.5.9 Total jitter measurements
Total jitter shall be measured according to the method in FC-PH Appendix A,=

subclause A.4.2, Active output interface eye opening measurement. The
method utilizes a BERT (Bit Error Rate Test) test set. References to use of=
the
Bessel-Thompson filter should substitute in the BT filter defined in this=
clause.
(see 38.5.5). The test shall utilize an alternating K28.5 and 2 (to the=
7th-1) PRBs
to determine worse case jitter.

Jitter measurement may use a clock recovery unit ("golden PLL")to remove low=

frequency jitter from the measurement as shown in Figure 38-3 ---- on page=
13.
The clock recovery unit has a low pass filter with 20 dB/decade roll off=
with -3 dB
point of 637 kHz. For this measurement, the recovered clock will run at the=
baud
rate. The golden PLL is used to approximate the PLL in the deserializer=
function
of the PMA. The PMA deserializer is able to track out a large amount of low=

frequency jitter (such as drift or wander) below its bandwidth. This low=
frequency

jitter would create a large measurement penalty but not affect operation of= the
link.

Comment ID 132 **Topic**
Name Jonathan Thatcher (for PMD working group)
Email jonathan_thatcher@vnet.ibm.com
Phone 507-253-2867
Fax 507-253-1438
Co. IBM AS/400 Division

Cl 38 **SC** 39.3.4; Table **P** 39.7 **L** 13 tp 28

Comment Type T **Comment Status** A

The jitter numbers in Table 38.5 are not mathematically correct.

SuggestedRemedy

The following were calculated by Del Hanson

Corrected jitter table:

	Total Jitter		Deterministic Jitter		Random Jitter	
	ps	UI	ps	UI	ps	UI
TP1	192	0.240	96	0.12	96	0.12
1 to 2	227	0.284	80	0.10	147	0.184
TP2	352	0.440	176	0.22	176	0.22
2 to 3	96	0.120	0	0.00	96	0.12
TP3	376	0.470	176	0.22	200	0.25
3 to 4	240	0.300	184	0.23	56	0.07
TP4	568	0.710	360	0.45	208	0.26

Proposed Response **Response Status** W

Agree with comment, table columns should be converted such that UI precedes= ps values.

Comment ID 140 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 4.1 **P** 38.9 **L** 33

Comment Type T **Comment Status** A

#7

Extinction ratio values are missing from Table 38-7.

SuggestedRemedy

Add a row for the extinction ratio values
used in spread sheet analysis.

Proposed Response **Response Status** W

OK, Add a row with values of 25, 25, 25 dB

Comment ID 141 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 4.2 **P** 38.10 **L** 14

Comment Type T **Comment Status** A

#8

The Trise and Tfall 20-80% values are missing from Table 38-8.

SuggestedRemedy

Add a row for Trise and Tfall specification per agreement with Change= Summary,
Major Change 4. on page 38.1. Value should be 0.26 ns in both columns.

Proposed Response **Response Status** W

OK, add a row with values of 0.26 & 0.26 ns

Comment ID 142 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 5.2 **P** 38.11 **L** 15

Comment Type T **Comment Status** A

#9

OFSTP-2 is for singlemode fiber only.

SuggestedRemedy

Replace OFSTP-2 with FOTP-95 which applies to both MM and SMF and is an absolute optical power test for optical fibers and cables.

Proposed Response **Response Status** W

OK

Comment ID 143 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 5.3 **P** 38.11 **L** 22

Comment Type T **Comment Status** A

#10

Clarify extinction ratio definition.

SuggestedRemedy

Delete "minimum acceptable" in line 22 and add the following to the end of the sentence to tie in with clauses 38.3.3 and 38.3.4: "... at the center of the eye."

Proposed Response **Response Status** W

Accept with clarification,

Delete third sentence in subclause 38.5.3 beginning on line 21. Also= replace
"shall be" with "is" in line 23. Finally, change second sentence beginning= on line
20 to "This measurement may be made with the node transmitting continuous K28.7 characters.
Also add note: A K28.7 will give a 1010 sequence at 1/5 the line rate.

Comment ID 144 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 5.8 **P** 38.13 **L** 1

Comment Type T **Comment Status** A

#11

No optical receive rise/fall times are included anywhere in clause 38.

SuggestedRemedy

Delete clause. The link analysis model provides a means of calculating link distances without setting the receiver optical Trise and Tfall values.

Proposed Response **Response Status** W

Subclause deleted. Also, add receiver bandwidth =3D 1000 MHz in two model=

parameter tables in the informative annex.

Comment ID 145 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 9 **P** 38.16 **L** 6

Comment Type T **Comment Status** R

#12

The reference wavelength for SMF is inaccurate.

SuggestedRemedy

Change the reference wavelength for SMF from 1300 to 1310 nm.
This is the widely accepted value used to characterize SMF.

Proposed Response **Response Status** W

Rejected because this is a nominal wavelength reference for the two ranges= in
the standard.

Comment ID 152 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** A.8 **P** 38.28 **L** all

Comment Type T **Comment Status** R

#19

The model for cable attenuation does not reflect the general case attenuation equation. The coefficients of 0.94 and 1.05 are correct only for the specific case where the cable has attenuation of exactly 3.5 dB/km at 850 nm and 1.5 dB/km at 1300 nm. Another term was added to the equation (R/C) perhaps in an attempt to generalize the equation for any cable attenuation coefficients, but does not produce this result.

SuggestedRemedy

Replace the present equation with the more correct general forms. Different coefficients apply to cables with different specified operating wavelengths, such as MMF and SMF. Also, these equations do not predict "water peak" absorption region effects.

The general form of this equation that can be applied to cables with attenuation coefficients specified at 0.85 and 1.3 micron wavelengths is:
Attenuation =3D L [0.64(C sub 0.85 - C sub 1.3) / lambda ^ 4
+ 1.22 C sub 1.3 - 0.22 C sub 0.85]
where:
Attenuation is in dB,
L is the length of the cable,
C sub 0.85 is the attenuation coefficient at 0.85 microns in dB/km,
C sub 1.3 is the attenuation coefficient at 1.3 microns in dB/km,
lambda is the operating wavelength of interest in microns.

The general form of this equation that can be applied to cables with attenuation coefficients specified at 1.31 and 1.55 micron wavelengths is:
Attenuation =3D L [6.01(C sub 1.31 - C sub 1.55) / lambda ^ 4
+ 2.04 C sub 1.55 - 1.04 C sub 1.31]
where:
Attenuation is in dB,
L is the length of the cable,
C sub 1.31 is the attenuation coefficient at 1.31 microns in dB/km,
C sub 1.55 is the attenuation coefficient at 1.55 microns in dB/km,
lambda is the operating wavelength of interest in microns.

Proposed Response **Response Status** W

Partial Accept with comment

The attenuation, in dB, of cabled optical fiber for a particular link length= is
modeled by the following equation:

[insert present equation 19]

The equation is based on the maximum allowable attenuation specifications= for
MMF, but can be applied to SMF in the 1300 nm operating region.

Where: L=3Dlink length in km.

For 1000BASE-SX links:
R sub l =3D the actual cable attenuation in dB/km @ 850nm
C sub l =3D 3.5 dB/km

For 1000BASE-LX links:
R sub l =3D the actual cable attenuation in dB/km @ 1300nm for
MMF or @ 1310 nm for SMF
C sub l =3D 1.5 dB/km

Comment ID 181 **Topic**
Name Paul Pace
Email ppace@sel-rtp.com
Phone 919-541-8339
Fax 919-541-8376
Co. Sumitomo Electric Lightwave

Cl 38 **SC** Tables 38.3 and **P** 7 & 10 **L** 24 & 19

Comment Type T **Comment Status** R

This item is not applicable to present capabilities of many module= manufacturers
and would require extensive modifications. By definition, this item could= entail
further definitions of Transmit Disable, Signal Detect (optional to standard= at this
time), and Assert/Deassert parameters of power level, response time, and
hysteresis.

SuggestedRemedy

Delete following item:
Launch power of Off Transmitter (max) -30 dBm (max)

Proposed Response **Response Status** W

Rejecting comment - This creates other unresolved issues.

Comment ID 176 **Topic**
Name Jonathan Thatcher
Email
Phone
Fax
Co. IBM AS/400

Cl 38 **SC** **P** **L**

Comment Type E **Comment Status** A

Accept, per Ft Lauderdale meeting, changes in clause 38 would be forthcoming=

in consequence of the work of TIA 2.2. Changes in Bandwidth and Effective=

Modal Bandwidth need to be made throughout the document.

SuggestedRemedy

Accept the clause 38 modal bandwidth proposal (Change Summary D3 to proposal .1) as presented July, 1997 in Maui.

Proposed Response **Response Status** W

Accept with:
Change Table 38.8 dispersion slope of 50um to l sub 0 -1190.
Add b superscript to 62.5um, 850nm, of modal bandwidth in Table 38.8.
Table 38.11 needs 25 in extinction ratio box instead of dB
Change table on page 38.10, line 25 heading to WCMB from modal bandwidth. =

Make same change to table on page 38.11
Delete "20-80%" from heading on table on page 38-11, line 32.

Comment ID 180 **Topic**
Name Mark Nowell
Email mn@hplb.hpl.hp.com
Phone +44 117 922 8375
Fax +44 117 922 9286
Co. Hewlett Packard

Cl 38 **SC** **P** **L**

Comment Type E **Comment Status** A

Definitions are needed

SuggestedRemedy

Accept definitions list prepared by Paul Kolesar with amendments below:

802.3z Clause 38 definitions
Paul Kolesar
7/3/97

EIA - Electronic Industries Association.

TIA - Telecommunications Industry Association.

ISO - International Organization for Standardization.

IEC - International Electrotechnical Commission.

MMF - multimode fiber

SMF - singlemode fiber

power budget - the minimum optical power available to overcome the sum of attenuation plus power penalties of the optical path between the transmitter= and receiver calculated as the difference between the minimum transmitter launch=

power (min.) and the receive power (min.).

RIN - relative intensity noise. The ratio of the variance in the optical= power to the average optical power.

mode partition noise - Amplitude, frequency and phase noise in the detected=

optical signal due to the interaction of the modes of a multimode laser and= the optical dispersion of the link

mode partition coefficient - a value between 0 and 1 representing the= tendency of a laser to produce mode partition noise.

modal noise penalty - the power penalty produced by the inclusion of mode selective loss elements (such as connectors and splices) in multimode fiber= optic links using coherent sources.

fiber attenuation - the static loss per unit length of the fiber at a= particular wavelength, usually expressed in dB/km.

modal bandwidth - the bandwidth of a multimode fiber due to dispersion= caused by variations in speed of the propagating modes.

WCMB - worst case modal bandwidth. The lowest value of the modal bandwidth=

found when measured using either an overfilled launch (OFL) or a radial overfilled launch (ROFL).

OFL - overfilled launch. The overfilled launch condition that excites both= radial and azimuthal modes defined in TIA-455-54A.

ROFL - radial overfilled launch. A launch condition created when a multimode=

optical fiber is illuminated by the coherent optical output of a source= operating in its lowest order transverse mode in a manner that excites predominantly the radial modes of the multimode fiber.

EMB - effective modal bandwidth. The modal bandwidth that occurs with a specific source and specific multimode fiber combination.

zero dispersion wavelength - That wavelength where the chromatic dispersion= of a fiber is at its minimum.

dispersion slope - The rate of change of the chromatic dispersion of a fiber= with wavelength.

receiver eye opening - the interval in time within a bit period where the= sampled data value will have a probability of error less than the specified bit= error ratio (BER).

BER - bit error ratio. The ratio of the number of bits received in error to=

the total
number of bits received.

Q - one half of the ratio of peak-to-peak signal to RMS noise.

extinction ratio - the ratio of the average optical power representing a=
logical one
to the average optical power representing a logical zero measured when
transients have settled.

RMS Spectral Width - the optical wavelength range as measured by FOTP-127.=

FOTP - fiber optic test procedure.

OFSTP - optical fiber system test procedure.

link attenuation - the static loss of a link between a transmitter and=
receiver. It
includes the loss of the fiber, connectors, and splices.

link penalties - the power penalties of a link not attri

Proposed Response **Response Status** C

done

Comment ID 147 **Topic**

Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 10.1 **P** 38.17 **L** 42

Comment Type E **Comment Status** A

#14

Inaccurate reference to mating connector.

SuggestedRemedy

Replace reference to Table 38-10 with a reference to IEC 874-14
called out in the paragraph above.

Proposed Response **Response Status** W

Accept with comment - An error was found in line 36 which references IEC=
874-
14. This should be IEC 874-4. Change line 35 to "...optical connector=
(plug
and receptacle) shall be the duplex SC.." Also delete ".and Receptacle"=
from
line 31. Finally, delete complete section regarding MDI optical receptacle=
from
lines 40 to 45.
Change figure 38-5 call out of Connector to Plug. Also delete "and=
receptacle"
from Figure 38-5 title.
Finally, delete "and receptacle" from line 3 page 38.18.

Comment ID 135 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 3 **P** 38.5 **L** 19

Comment Type E **Comment Status** A

#2

The first sentence is redundant with 38.2.1.

SuggestedRemedy

Delete the first sentence.

Proposed Response **Response Status** W

OK

Comment ID 136 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 3.1 **P** 38.6 **L** all

Comment Type E **Comment Status** A

#3

This section should be informative.

SuggestedRemedy

Move section to the informative annex 38A.

Proposed Response **Response Status** W

OK

Comment ID 60 **Topic**
Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.1.1 **P** 38.1 **L** 47

Comment Type E **Comment Status** R

Implementation of the PMD service interface should be required for the purpose of interoperability with the PMA.

SuggestedRemedy

Change "The following specifies the services provided by the PMD." to "The following specifies the services that shall be provided by the PMD." Add a PICS item to 38.11.4.1 to correspond with the new "shall": "FN-x, compliance with PMD service interface of 38.1.1, 38.1.1, M, Yes[], "

Proposed Response **Response Status** W

Rejected because this is an abstract interface not tied to a particular implementation. Page 38.3, lines 48-49, TP1 and TP4 are not system compliance points.

Comment ID 179 **Topic**
Name Bob Musk
Email
Phone
Fax
Co. HP

Cl 38 **SC** 38.10.1 **P** 38.17 **L** 36

Comment Type E **Comment Status** A

IEC reference should refer to Interface Standard document to include= adapters.

SuggestedRemedy

Change reference IEC 874-14 to IEC 1754-4.

Proposed Response **Response Status** W

OK

Comment ID 127 **Topic**
Name Jonathan Thatcher (for PMD working group)
Email jonathan_thatcher@vnet.ibm.com
Phone 507-253-2867
Fax 507-253-1438
Co. IBM AS/400 Division

Cl 38 **SC** 38.10.1 **P** 38.16 **L** 40

Comment Type E **Comment Status** A

"MDI optical receptacle" should be a subclause heading (38.10.2)

SuggestedRemedy

See comment

Proposed Response **Response Status** W

OK

Comment ID 75 **Topic**
Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.10.4 **P** 38.18 **L** 37

Comment Type E **Comment Status** R

The statement regarding cross-over functions seems to conflict with the requirement of 38.10.2: "The receptacle shall ensure that polarity is maintained." An internal cross-over seems to be expressly forbidden by the standard.

SuggestedRemedy

Suggest deleting the statement.

Proposed Response **Response Status** W

Reject. Remove section 38.10.3 Crossover function and remove Item LI-6 from=

table 38.11.4.5.

Comment ID 76 **Topic**
Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.10.4 **P** 38.14 **L** 34

Comment Type E **Comment Status** R

Each link and link element (jumper) shall be crossed over implies that there may only be an odd number of links and link elements in a transmission path.

SuggestedRemedy

Suggest change to "..., optical link segments shall be crossed over to ensure proper connection between optical transceivers" to eliminate confusion. link segment, as defined in 1.4.110 defines the transmission path between two MDIs. Perhaps I am not interpreting the definition of link and link element properly.

Proposed Response **Response Status** W

Rejected since this is achieved automatically by following building wiring= system
practice and use of duplex SC connectors as specified in subclause 38.10. =

Comment ID 61 **Topic**
Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.11.4.1 **P** 38.21 **L** 35

Comment Type E **Comment Status** A

Support of PICS items FN-3 and FN-4 implies support of FN-2. Therefore, FN-2 is redundant.

SuggestedRemedy

Delete FN-2. This lines up with what was done for clause 39.

Proposed Response **Response Status** W

OK, also need to remove shall in line 36, subclause 38.2 of page 38.3.

Comment ID 67 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.11.4.2 **P** 38.22 **L** 11

Comment Type E **Comment Status** R

Regarding item PMS-3, only overshoot and undershoot are normative.

SuggestedRemedy

Suggest change to read: "PMS-3, transmitter overshoot/undershoot, 38.3.2, SX:M, Yes[] N/A[], measured from transmit eye per 38.5.5"

Proposed Response **Response Status** W

Rejected - Changes due to comment 129 invalidate this comment. Action: correct reference on page 38.22, line 11, from 38.5.6 to 38.5.5.

Comment ID 70 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.11.4.3 **P** 38.22 **L** 33

Comment Type E **Comment Status** R

Regarding PML-3, only overshoot and undershoot are normative.

SuggestedRemedy

Suggest change to read: "PML-3, transmitter overshoot/undershoot, 38.4.2, LX:M, Yes[] N/A[], measured from transmit eye per 3.5.5"

Proposed Response **Response Status** W

Rejected - Changes due to comment 129 invalidate this comment. Action: correct reference on page 38.22, line 11, from 38.5.6 to 38.5.5.
Duplicate of comment 67 but for LW, PIC on PML3 on pg. 38.22, line 33.

Comment ID 62 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.2.2 **P** 38.4 **L** 26

Comment Type E **Comment Status** A

The conversion from tx_bit to optical power level should be mandated to guarantee interoperability.

SuggestedRemedy

Change "The higher optical power level corresponds to tx_bit=3DONE" to "The higher optical power level shall correspond to tx_bit=3DONE." Add a PICS item to 38.11.4.1, "FN-x, interpretation of tx_bit, 38.2.2, M, Yes[], higher optical power level corresponds to tx_bit=3DONE."

Proposed Response **Response Status** W

OK

Comment ID 63 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.2.3 **P** 38.4 **L** 32

Comment Type E **Comment Status** A

The conversion from optical power level to rx_bit should be mandated to guarantee interoperability.

SuggestedRemedy

Change "The higher optical power level corresponds to rx_bit=3DONE" to "The higher optical power level shall correspond to rx_bit=3DONE." Add a PICS item to 38.11.4.1, "FN-x, definition of rx_bit, 38.2.2, M, Yes[], higher optical power level corresponds to rx_bit=3DONE."

Proposed Response **Response Status** W

OK

Comment ID 65 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.3 **P** 38.5 **L** 21

Comment Type E **Comment Status** A

If a device meets the requirements of 38.3, all media types in table 38-1 should be supported. If the requirements of 38.3 are not sufficient, the statement that all media types SHALL be supported does not really help the PMD implementor. Therefore, I believe this statement to be redundant.

SuggestedRemedy

Suggest change "A 1000BASE-SX complaint transmitter shall be capable of supporting..." to "A 1000BASE-SX compliant transmitter is capable of supporting..." Delete PICS item PMS-1 from 38.11.4.2.

Proposed Response **Response Status** W

OK

Comment ID 66 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.3.2 **P** 38.7 **L** 03

Comment Type E **Comment Status** A

reference to table 38-2 should be to table 38-3.

SuggestedRemedy

change reference from 38-2 to 38-3.

Proposed Response **Response Status** W

OK

Comment ID 130 **Topic**

Name Jonathan Thatcher (for PMD working group)
Email jonathan_thatcher@vnet.ibm.com
Phone 507-253-2867
Fax 507-253-1438
Co. IBM AS/400 Division

Cl 38 **SC** 38.3.2 and 3 **P** 38.7 **L** 3, 35

Comment Type E **Comment Status** A

Incorrect references for Table 38-2 and 38.3

SuggestedRemedy

change Table 38-2 reference to Table 38.3, and Table 38.3 reference to Table= 38.4

Proposed Response **Response Status** W

OK

Comment ID 68 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.3.3 **P** 38.7 **L** 35

Comment Type E **Comment Status** A

Reference to table 38-3 should be to table 38-4.

SuggestedRemedy

Change reference from 38-3 to 38-4.

Proposed Response **Response Status** W

OK

Comment ID 71 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.3.4 **P** 38.8 **L** 03

Comment Type E **Comment Status** R

Both SX and LX must meet the jitter requirements of table 38-5.

SuggestedRemedy

Change "The 1000BASE-SX PMD shall..." to "The 1000BASE-SX PMD and the 1000BASE-LX PMD shall..."

Proposed Response **Response Status** W

Reject - Move 38.3.4 to become new 38.x where x replaces 38.5 position. Reference new 38.5 from 38.3 and 38.4.

Comment ID 182 **Topic**

Name Doug Day
Email
Phone
Fax
Co. VSLI Technology

Cl 38 **SC** 38.3.4 **P** **L** 12-27

Comment Type E **Comment Status** D

There is no normative reference to the frequency content of the jitter= budget
(Table 38-5), i.e., that the jitter is all above 637 kHz.

SuggestedRemedy

Add "Numbers in the Table 38-5 represent high frequency jitter (above 637= kHz)
and do not include low frequency jitter or wander."

Proposed Response **Response Status** Z

Doug withdrew comment

Comment ID 69 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.4 **P** 38.8 **L** 03

Comment Type E **Comment Status** A

If a device meets the requirements of 38.4, all media types in table 38-1 should be supported. If the requirements of 38.3 are not sufficient, the statement that all media types SHALL be supported does not really help the PMD implementor. In order to support all media types, the MMF value column of table 38-8 must be implemented. If a station is required to implement the MMF value column, the statement in 38.4 becomes redundant.

SuggestedRemedy

Suggest change "A 1000BASE-LX complaint transmitter shall be capable of supporting..." to "A 1000BASE-LX compliant transmitter is capable of supporting..." Delete PICS item PML-1 from 38.11.4.3. Change 38.4.2, page 38.10, line 1, to "The 1000BASE-LX transmitter shall meet the specifications defined in the MMF value column of table 38-8..." Adjust PICS entry PML-2 accordingly.

Proposed Response **Response Status** W

This is a two part comment and has two different responses.
Accept the suggested change to "A 1000BASE-LX complaint transmitter shall be=

capable of supporting..." to "A 1000BASE-LX compliant transmitter is capable= of
supporting..." Also add "50 and 62.5um MMF" to value descriptions on tables=

38.3 and 38.8.

Rejecting. Delete PICS item PML-1 from 38.11.4.3. Change
38.4.2, page 38.10, line 1, to "The 1000BASE-LX transmitter shall meet
the specifications defined in the MMF value column of table 38-8..."
Adjust PICS entry PML-2 accordingly" - because we are specifying a single=

interface for both single-mode and multimode.

Comment ID 174 **Topic**
Name Paul Kolesar
Email
Phone
Fax
Co. Lucent

Cl 38 **SC** 38.4.2 **P** 38.4 **L** n/a

Comment Type E **Comment Status** A

Table 38.2 lists response time as a spec. That same line (response time)= should
be in Table 38.6 - 1000BASE-LX transmit characteristics.

SuggestedRemedy

See comment

Proposed Response **Response Status** W

OK

Comment ID 178 **Topic**
Name Bob Dahlgren
Email bob@fujikura.com
Phone 408-988-7407
Fax 408-727-3460
Co. Fujikura America Inc.

Cl 38 **SC** 38.6.1 **P** 38.14 **L** 12

Comment Type E **Comment Status** A

Safety standard is "IEC 90"

SuggestedRemedy

Change to "IEC - 950"
Also change PIC (page 24, line 3) OR14

Proposed Response **Response Status** W

Accept

Comment ID 74 **Topic**
Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 38 **SC** 38.7 **P** 38.14 **L** 37

Comment Type E **Comment Status** A

The wording of 38.7 is unclear.

SuggestedRemedy

Suggest change to "Hardware shall be implemented such that the normative specifications of this clause are met over the life of the product while the product operates within the manufacturer's range..."

Proposed Response **Response Status** W

Accept comment - change "implementing hardware" in line 37, section 38.7 to= "a
system integrating a 1000-BASE-X PMD"

Comment ID 124 **Topic**
Name Jonathan Thatcher (for PMD working group)
Email jonathan_thatcher@vnet.ibm.com
Phone 507-253-2867
Fax 507-253-1438
Co. IBM AS/400 Division

Cl 38 **SC** 38.9 **P** 38.16 **L** 1 to 55

Comment Type E **Comment Status** A

General clean up of table 38.10

SuggestedRemedy

Remove reference row. Remove 850nm in Description text.

Proposed Response **Response Status** W

OK

Comment ID 138 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 4 **P** 38.8 **L** 39

Comment Type E **Comment Status** A

#5

The first sentence is redundant with 38.2.1.

SuggestedRemedy

Delete first sentence.

Proposed Response **Response Status** W

OK

Comment ID 139 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 4.1 **P** 38.9 **L** all

Comment Type E **Comment Status** A

#6

This section should be informative.

SuggestedRemedy

Move section to the informative annex 38A.

Proposed Response **Response Status** W

OK

Comment ID 146 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** 9.4 **P** 38.17 **L** 5

Comment Type E **Comment Status** A

#13

Figure 38-4 does not distinguish between 50 and 62.5 MMF.

SuggestedRemedy

Provide a vertical line at 1320 nm to divide the regions of the figure with the left labeled 50 um MMF and the right labeled 62.5 um MMF. Since the regions were split in Table 38.10, they should also be split in Figure 38-4.

Proposed Response **Response Status** W

Accept with comment - delete subclause 38.9.4 Dispersion slope (informative)

Comment ID 150 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** A.1 **P** 38.26 **L** 11

Comment Type E **Comment Status** A

#17

Dual meanings for T sub s.

SuggestedRemedy

Ts is used in equation 6 to represent system rise time and again in equations 7 and 8 for source rise time. Suggest changing equation 6 to Tsys.

Proposed Response **Response Status** W

Accept, change sub s to sub sys in 5 places in equations 5&6 and text.

Comment ID 151 **Topic**
Name Paul Kolesar
Email pkolesar@lucent.com
Phone 732 957 5077
Fax 732 957 5604
Co. Lucent Technologies

Cl 38 **SC** A.2 **P** 38.26 **L** 36

Comment Type E **Comment Status** A

#18

Incorrect symbols.

SuggestedRemedy

T sub e should be T sub c as defined in line 33.

Proposed Response **Response Status** W

OK, change sub e to sub c in eq. 8.

Comment ID 125 **Topic**
Name Jonathan Thatcher (for PMD working group)
Email jonathan_thatcher@vnet.ibm.com
Phone 507-253-2867
Fax 507-253-1438
Co. IBM AS/400 Division

Cl 38 **SC** All **P** All **L** *

Comment Type E **Comment Status** A

Global search and change "Gbaud" to "GBd."

SuggestedRemedy

See comment

Proposed Response **Response Status** W

OK

Comment ID 175 **Topic**
Name Steve Swanson
Email swansonse@corning.com
Phone +1 607 974 4252
Fax +1 607 974 4941
Co. Corning

Cl 38 **SC** Table 38.8 **P** 38.6 **L** 21

Comment Type E **Comment Status** A

Dispersion slope formula is incorrect for the wavelength range 1295-1300.

SuggestedRemedy

Change the Dispersion slope (max) to 0.11 for 1300=9Cl(0)=9C1320 and 0.001=
(l(0)-
1190) for 1295=9Cl(0)=9C1300

Proposed Response **Response Status** W

OK

Comment ID 77 **Topic**
Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 39 **SC** 39.2.1 **P** 39.1 **L** 48

Comment Type T **Comment Status** A

The relationship between tx_bit and output voltage should be defined to guarantee interoperability.

SuggestedRemedy

Add statement to 39.2.1, "The higher output voltage shall correspond to tx_bit=3DONE." Add corresponding item to PICS (39.7.4.1).

Proposed Response **Response Status** W

Accept with modification: "The higher output voltage of T+ - T-=
(differential
voltage) shall...."

Comment ID 78 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 39 **SC** 39.2.2 **P** 39.2 **L** 03

Comment Type T **Comment Status** A

The relationship between input voltage and rx_bit should be defined to guarantee interoperability.

SuggestedRemedy

Add statement to 39.2.2, "The higher input voltage shall correspond to rx_bit=3DONE." Add corresponding item to PICS (39.7.4.1).

Proposed Response **Response Status** W

Accept with modification: "The higher output voltage of R+ - R-= (differential voltage) shall...."

Comment ID 79 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 39 **SC** 39.2.3.1 **P** 39.2 **L** 21

Comment Type T **Comment Status** A

Even though signal detect is optional, its behavior should be more tightly specified for cases when it is implemented. The PICS only mandate that SIGNAL_DETECT=3DFAIL when the link is unplugged or the remote transmitter is turned off. However, the PICS do no prevent an implementation from setting SIGNAL_DETECT=3DFAIL when the signal is at the limits of the receive sensitivity. This is because the commentary on margins contains no "shalls". If "shalls" were added, they would be meaningless unless attached to quantitative values.

SuggestedRemedy

Specify signal detect assertion and deassertion thresholds in the form of a "shall" statement with quantitative values. Propose that the "shall assert" level be the minimum receiver sensitivity (400mv), and the "shall deassert" level be 200mV . These parameters should be added to tables 39-1 and 39-3.

Proposed Response **Response Status** W

Reject: It is the intent of the committee to allow a broad range of implementations. Specific assert levels could unduly restrict specific implementations.

Comment ID 82 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 39 **SC** 39.3.1 **P** 39.3 **L** 38

Comment Type T **Comment Status** A

Clock tolerance specification seems to be missing.

SuggestedRemedy

Add entry to table, "clock tolerance, +/- 100 ppm".

Proposed Response **Response Status** W

Accept

Comment ID 131 **Topic**

Name Jonathan Thatcher (for PMD working group)
Email jonathan_thatcher@vnet.ibm.com
Phone 507-253-2867
Fax 507-253-1438
Co. IBM AS/400 Division

Cl 39 **SC** 39.3.3; Tabl **P** 39.7 **L** 22 to 40

Comment Type T **Comment Status** A

The jitter numbers in Table 39.4 are not mathematically correct.

SuggestedRemedy

The following were calculated by Colin Whitby-Strevens according to the following algorithm:

1) FC UI * 941 -> FC ps

2) FC ps -> GE ps

3) GE ps / 800 -> GE UI

Corrected jitter table:

	Total Jitter		Deterministic Jitter		Random Jitter	
	ps	UI	ps	UI	ps	UI
TP1	188	0.24	94	0.12	94	0.12
1 to 2	82	0.1	19	0.02	63	0.08
TP2	226	0.28	113	0.14	113	0.14
2 to 3	380	0.48	207	0.26	173	0.22
TP3	527	0.66	320	0.40	207	0.26
3 to 4	38	0.05	38	0.05	0	0.0
TP4	565	0.71	358	0.45	207	0.26

Proposed Response **Response Status** W

Reject: The numbers are still incorrect. The following numbers will be used.

	Total Jitter		Deterministic Jitter		Random Jitter	
	ps	UI	ps	UI	ps	UI
TP1	192	0.24	96	0.12	96	0.12
1 to 2	72	0.09	16	0.02	56	0.07
TP2	223	0.28	112	0.14	111	0.14
2 to 3	384	0.48	208	0.26	176	0.22
TP3	528	0.66	320	0.40	208	0.26
3 to 4	40	0.05	40	0.05	0	0.0
TP4	568	0.71	360	0.45	208	0.26

Comment ID 186 **Topic**

Name Jonathan Thatcher

Email jonathan_thatcher@vnet.ibm.com

Phone +507 253 2867

Fax +507 253 2867

Co. IBM AS/400

Cl 39 **SC** 39.3.4 **P** 39.7 to 3 **L** 44

Comment Type T **Comment Status** A

Subclause 39.3.4 contains redundant information.

SuggestedRemedy

1. Remove table 39-5 and associated text
2. Move all remaining text to 39.6.

Proposed Response **Response Status** W

Accept

Comment ID 184 **Topic**

Name Lisa Huff

Email

Phone

Fax

Co. AMP, Inc.

Cl 39 **SC** 39.4 **P** 39.8 **L** 31

Comment Type T **Comment Status** A

There is no test description for how to test the NEXT parameter in Table 39-6.

SuggestedRemedy

Add the following test setup to the new test procedure clause.

Near End Cross Talk (NEXT) is tested using a differential TDR or equivalent filtered to the risetime (near end cross talk at 85 ps T sub r max) limit in= table 39-
6. The T+ and T- inputs of the pair are excited while the R+ and R- are measured within the same connector pair. The far end of the T+/T- pair is=

terminated per figure 39-2. The R+ and R- signals at the pair being tested= are
terminated with a load (including test equipment) equivalent to that shown= in
Figure 39-2. The far end of the R+ and R- pair being monitored are unterminated.

Proposed Response **Response Status** W

Accept with editorial modifications

Comment ID 32 **Topic**
Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.4 **P** 39.8 **L** 16

Comment Type T **Comment Status** A

Requirement needed to ensure cable shield connected to connector (plug) shell.

SuggestedRemedy

Add a sub-clause that says something like "The cable shield shall be connected the shell of the connectors (plugs) at each end of the jumper cable". An item must also be added to the PICS proforma.

Proposed Response **Response Status** W

Reject: This requirement is already covered by the 11801 reference in 39.6.

Comment ID 87 **Topic**
Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 39 **SC** 39.4.1 **P** 39.9 **L** 11

Comment Type T **Comment Status** A

Regarding the optional equalizer network, the statement that "It shall be used to correct for frequency selective attenuation..." is not testable.

SuggestedRemedy

Change statement to, "The output of the cable assembly, with optional equalizer network, when driven with by a transmitter meeting the requirements of 39.3.1, shall meet the eye diagram requirements of figure 39-5." Also need to change the PICS item LI-6 in 39.7.4.3.

Proposed Response **Response Status** W

Partial Accept: The sentence under question is redundant with other portions= of
clause 39.
Remove "It shall be used... signal components."

Comment ID 185 **Topic**
Name PMD CX work group
Email jonathan_thatcher@vnet.ibm.com
Phone +507 253 2867
Fax +507 253 2867
Co. IBM AS/400

Cl 39 **SC** New 39.3.1 **P** 39.4 **L** <tilde>19

Comment Type T **Comment Status** A

Clause 39 eye diagram does not exclude jitter and rise/fall specifications= per Ft.
Lauderdale mtg.

SuggestedRemedy

" the transmit mask is not used for response time and jitter specification."

Proposed Response **Response Status** W

Accept

Type: TR/technical required T/technical E/editorial
Comment: X/received D/dispatched for consideration A/accepted R/rejected
Response: O/open W/written S/sent to commentor for review C/closed U/unsatisfied Z/withdrawn

Comment ID 133 **Topic**
Name Jonathan Thatcher (for PMD working group)
Email jonathan_thatcher@vnet.ibm.com
Phone 507-253-2867
Fax 507-253-1438
Co. IBM AS/400 Division

Cl 39 **SC** TBD **P** TBD **L** *

Comment Type T **Comment Status** A

During the Ft. Lauderdale Mtg. it was identified that clause 39 needed a subclause on test methodologies. Ed Grivna worked up a recommendation which=

was published on the reflector on Fri, 27 Jun 1997 10:29:05 -0500

SuggestedRemedy

Test/Measurements for Clause 39

Note: My notes regarding Ed's proposal are [bracketed].

[Note: should we be specifying the minimum number of samples in some of these tests?]

[Note: should we be specify the exact pattern to be used for the tests?]

[Note: some BER tests are referenced to the CRU which is not part of the= PMD;
e.g. Receiver
reference clock offset range]

[Note: necessary to calibrate for scope skew?]

[Add the following text to 39.3, page 39.2 after 1st paragraph. "PMD specifications shall be
measured using measurement techniques defined in 39.TBD." This will result= in
mandatory
updates to the performa table(s). Does this cover all the necessary= "shalls?"]

Total Jitter [text removed from recommendation; reference to Clause 38= already
exists in 39.3.3;
page 39.7; line 15-16.]

Transmit Rise Time

Rise time is a differential measurement across the TX+ and TX- outputs with a load present (including test equipment) equivalent to that
shown in Figure 39-3.
Both rising and falling edges [should -> are] be measured. The 100% and 0% =

levels are the normalized 1 and 0 levels present when sending an alternating=

K28.5 (at a minimum) or other psuedoramdom data pattern containing both the=

maximum and minimum 8B/10B coding run lengths.

Once the normalized amplitude is determined, the data pattern [should be ->= is]
changed to a continuous D21.5 character stream. The rise time specification= is
the time interval between the 20% and 80% amplitude levels between the normalized 1 and 0 amplitude levels.

Transmit Differential Skew

The transmitter differential skew measurement is made across the TX+ and TX- outputs with a load present (including test equipment) equivalent= to
that shown in Figure 39-3. This consists of two single-ended measurements,=

and is the absolute value of the maximum time difference, at the 50%= normalized
amplitude point, of the TX+ signal relative to the TX- signal.

The single-ended normalized amplitudes are first determined for both the TX+=

and TX- signals. The 100% and 0% levels are the normalized 1 and 0 levels=

present when sending an alternating K28.5 (at a minimum) or other psuedoramdom data pattern containing both the maximum and minimum 8B/10B coding run lengths.

A character boundary or other stable trigger point must be available to= allow the
actual time skew to be measured. The measured number is the worst case across all ten bit positions, for both rising and falling edges.

[Note: this test method measures the worst case deterministic skew; does everyone agree with this? What is the relationship between deterministic= skew

and deterministic jitter?]]

Transmit Eye - Normalized

This test is made as a differential measurement at the bulkhead connector. = The
scope trigger must either be a recovered clock or a from the character clock=

internal to the equipment. The data pattern for this is the CRPAT [?] or= other
pattern that insures transitions in all possible bit boundaries; i.e., an= alternating
k28.5 is n

Proposed Response **Response Status** C

accept

Comment ID 188 **Topic**

Name Ed Cady

Email

Phone

Fax

Co. Berg

Cl 39 **SC** **P** **L**

Comment Type E **Comment Status** A

Definitions and references are missing in clause.

SuggestedRemedy

To accept Ed Grivna's set of definitions and references which follow:

Glossary
---

1. Jumper Cable Assembly -
An electrical or optical assembly, used for the bi-directional transmission and reception of information, consisting a pair of transmission lines terminated at their ends with plug connectors. This assembly may or may not contain additional components, located between the plug connectors, to perform equalization.

2. ppd - peak-to-peak differential

3. skew - The difference in time between two signals

4. differential skew - The difference in time, between the same relative instants, of the true and complement components of a differential signal.

5. normalized amplitude - The amplitude of a signal when driving its steady state value; i.e., not under the influence of ringing or other dynamic influences.

6. differential -
   1. A mode of signal transmission where a signal and its complement are driven down a balanced transmission line with the signal carried as a single electromagnetic field located between the two conductors of the transmission line.
   2. A method of measurement which compares signals to each other rather than to a fixed reference.

7. TDR - Time Domain Reflectometer

8. Differential Sensitivity - That ppd amplitude necessary for a differential receiver to resolve both a logic-0 and a logic-1.

9. Exception Window - A time interval during which the impedance of a mated connector and associated transmission line is allowed to exceed the impedance tolerance specification for signals passed through a connector.

10.Equalizer - A group of one or more active or passive components whose function is to correct for the frequency selective attenuation caused by skin effect, and and timining variations in a signal caused by the differences in propagation time caused by variations in the propagation rate of the various spectral components present in a signal

References

ANSI X3.230-1994 Fibre Channel Physical

ISO/IEC 11801: 1995 Commercial and building wiring standard

IEC 1196-1 Cable test criteria

IEC 807-3 Conector requirements for polarized rectangular conectors for use below 3-MHz

ANSI/EIA/TIA 607 Commercial Building Grounding/Bonding requirements

IEC 61076-3-103 Style-2 Connector Requirements

Proposed Response **Response Status** C

Accept
NOTE: Direct editor to compile references

Comment ID 27 **Topic**
Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.1 **P** 39.1 **L** 31

Comment Type E **Comment Status** A

Change `0 to 25'.

SuggestedRemedy

Change `0 to 25' to `1 to 25' since some minimum length of jumper cable is required to connect same sex PHY= connectors.

Proposed Response **Response Status** W

Accept but with 0.1 to 25 meters instead of 0 to 25 meters.

Comment ID 80 **Topic**
Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 39 **SC** 39.3.1 **P** 39.3 **L** 41

Comment Type E **Comment Status** A

There seems to be a conflict between the jitter specifications of table 39-1 and 39-4. I assume 39-4 to be the real specification.

SuggestedRemedy

Remove DJ, RJ, and TJ entries from table 39-1.

Proposed Response **Response Status** W

Accept

Comment ID 34 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.3.1 **P** 39.3 **L** 31

Comment Type E **Comment Status** A

Location of `point-b'?

SuggestedRemedy

I assume `point-b' is TP1. If so, suggest appropriate change be made.

Proposed Response **Response Status** W

Accept

Comment ID 83 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 39 **SC** 39.3.2 **P** 39.6 **L** 04

Comment Type E **Comment Status** A

The table completely specifies the receiver input impedance at TP3, the statement that "The receiver shall terminate the link by..." seems to be redundant.

SuggestedRemedy

Delete "The receiver shall terminate the link by..."

Proposed Response **Response Status** W

Accept

Comment ID 85 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 39 **SC** 39.3.4 **P** 39.7 **L** 49

Comment Type E **Comment Status** A

Table 39-5 seems to be redundant with tables 39-1 and 39-3.

SuggestedRemedy

Remove table 39-5 and above statement that "The systems shall meet the operational requirements...". Remove corresponding PICS item.

Proposed Response **Response Status** W

Accept

Comment ID 35 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.3.4 **P** 39.8 **L** 6

Comment Type E **Comment Status** A

Recommend the sentence be re-written clarify grounds.

SuggestedRemedy

Suggested change: The jumper cable shield shall be connected to chassis ground of the MDI connector at both ends of the jumper cable as shown in Figure 39-1. For this connection to effective frame ground of the 1000BASE-X equipment must be earthed (connected to the power system ground. (Note to editor: Check to ensure there is a requirement someplace else in the 1000BASE-X spec that requires the connection of frame ground to power ground)

Proposed Response **Response Status** W

Reject: This suggestion is redundant with existing text in 39.1 and 39.6.
Other: Remove the redundant "shall" in 39.1 (p 39.1; line 35).

Comment ID 86 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 39 **SC** 39.4 **P** 39.8 **L** 41

Comment Type E **Comment Status** A

"The link termination shall match that shown in figure 39-2." seems be redundant with table 39-6.

SuggestedRemedy

Suggest removing that statement and the corresponding PICS item.

Proposed Response **Response Status** W

Accept

Comment ID 187 **Topic**

Name Grahame Measor
Email
Phone
Fax
Co. GEC Plessey Semiconductors

Cl 39 **SC** 39.4 **P** 39.5 **L** 47-49

Comment Type E **Comment Status** A

Eye diagram in Figure 39-4 will be closed by high frequency jitter past the=
X1
point if the maximum allowed by Table 39.4 is present.

SuggestedRemedy

Remove note in lines 47-49, indicating the high frequency jitter is present.

Proposed Response **Response Status** W

Reject - Fix table 39.2 to match new Table 39.4. Change note on page 39.5,=
line
47 "baud rate div. by 2500" to "637 kHz".

Comment ID 28 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.4 **P** 39.8 **L** 22

Comment Type E **Comment Status** R

Table 39-6 is a reasonable summary table for the jumper cable characteristics. What is missing is the requirements/description for each individual parameter. I believe this extremely important since the specification for most of the parameters is in the time domain vs the frequency domain.

SuggestedRemedy

Provide a sub-clause for each of the jumper cable specifications.
1) Attenuation: This specification should contain frequencies higher than 625 MHz since this additional bandwidth is needed to reliably decode the NRZ signals; probably at high as 800-850 MHz. The frequency=
response
of the jumper cable is needed in order to design the imbedded equalizers as specified in 39.4.1.
2) Differential skew: A description of this parameter and why it is needed should be provided.
3) Near-End Crosstalk (NEXT) loss: If the attenuation is specified in dB, then I believe the NEXT loss should be specified in dB. If not then a description of the the time domain measurement procedure should be=
provided.
4) End to End delay: Suggest this be specified in ps rather than bit times, or both, to ensure the reader understands the parameter.
5) Link Impedance @ T2: There are two specifications provided. An exclamation is needed to define each. It appears one is for cable only, and if this the case why?
I believe the additional specificity for each of the jumper cable parameters is necessary for those who will be responsible for writing the Conformance Specification. In addition, it is also keeping with the practice used other 802.3 specifications for the media links; detailed specification to ensure the media link will support the objective BER.

Proposed Response **Response Status** W

Partial acceptance.

1. Rejected: specification of attenuation characteristics > the= half-baud
frequency are not necessary. Two signals, one with high frequency components and the other without, can not be distinguished at the output of a worst case cable.
This can be shown with a Mathcad filtered model of the signal spectral components. It is outside the scope of the standard to= specify
equalizer parameters.

2. Accept: the PMD group will define skew in the glossary. The group will also add a test procedure for skew.

3. Reject/Accept: NEXT measurements provide a ratio which is readily converted to dB.

b) put it in the measurement subclause.

4. Reject: The selection of bit times was done to conform with the "bit-budget" specifications present in the other major clauses of the standard. It was deemed unnecessary to provide both units.

5. The reason for the two is because the impedance through the connectors cannot be as well controlled as it can through the cable. The usage of these parameters are explained in the new test requirements section.

Comment ID 25 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.4 **P** 39.8 **L** 18

Comment Type E **Comment Status** A

Recommend a sentence be added to the beginning of this section to describe the purpose of the jumper cable.

SuggestedRemedy

Add the following sentence to the beginning of the sub-clause.
`A jumper cable, which is described in this clause, shall be used to inter-connect 1000BASE-CX PMDs.'

Proposed Response **Response Status** W

Conditional accept: put "Jumper cables, described in 39.4, are used to= inter-
connect 1000BASE-CX PMDs" into 39.1, the introduction.

Comment ID 26 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.4 **P** 39.8 **L** 18

Comment Type E **Comment Status** A

Recommend `have' be changed.

SuggestedRemedy

Change `have' to `consist of'.

Proposed Response **Response Status** W

Accept

Comment ID 29 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.4 **P** 39.8 **L** 18

Comment Type E **Comment Status** A

Wordsmith `male'

SuggestedRemedy

Suggest `male' be changed to `plug (male)'.

Proposed Response **Response Status** W

Accept. Scrub entire document for "male" and "female." Change "male" to plug=

and "female" to receptacle.

Comment ID 23 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.4 **P** 39.9 **L** 5

Comment Type E **Comment Status** A

ISO/IEC 8802-5 does not contain cable specification for
IBM Type 1 cable.

SuggestedRemedy

If a reference is needed for IBM Type 1 cable I would
suggest ISO/IEC 11801:1995 be used since this is where
the electrical specifications are contained. The cable
is referred to as STP.
I would recommend that this paragraph be removed=
completely
since there are a number of 150 cables, not just STP,
may not meet the differential skew requirement.

Proposed Response **Response Status** W

Partial Accept: correct reference to ISO/IEC11801:1995. The referenced=
cable
is in common
use in network environments, in many instances with proper connectors and
pinouts. For short
links these cables may meet cls39 requirements. However, since this cable is=
not
manufactured
to any specific skew characteristics it may not be usable in longer cables.

Comment ID 24 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.5.2 **P** 39.9 **L** 46

Comment Type E **Comment Status** A

Suggest `plug or male' be changed to `plug (male)' and `receptacle or female' to `jack (female)'.

SuggestedRemedy

See above

Proposed Response **Response Status** W

Accept - Previously agreed to remove male and female per other comment.

Comment ID 31 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.5.2 **P** 39.9 **L** 44

Comment Type E **Comment Status** A

Change title of clause

SuggestedRemedy

Remove the word `Balanced' since there is no reference to it clause 39.4.

Proposed Response **Response Status** W

Reject: Change line 18 to "A 1000BASE-CX compliant... and shielded, balanced=

cable...."

Comment ID 81 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 39 **SC** 39.7.4.2 **P** 39.15 **L** 09

Comment Type E **Comment Status** A

Regarding PM-3, I believe the main intent 39.3.1 was to specify the transmitter eye diagram.

SuggestedRemedy

add PICS item "PM-x, transmitter eye diagram, 39.3.1, M, Yes[], meets requirements of figure 39-3 and 39-4 when terminated as shown in TP2.

Proposed Response **Response Status** W

Accept: Additionally, change 39.3.1 "The signal requirements... Table 39-1"= to
"The transmitter shall meet the specifications in Table 39-1." This required= the
addition of a new PIC.

Comment ID 84 **Topic**

Name Adam Healey
Email adam.healey@unh.edu
Phone +1 603 862 3568
Fax +1 603 862 1915
Co. UNH InterOperability Lab

Cl 39 **SC** 39.7.4.2 **P** 39.15 **L** 16

Comment Type E **Comment Status** A

Regarding PM-7, the receiver BER cannot be measured without mandating the conditions under which the requirement should be met.

SuggestedRemedy

Change PM-7 to, "PM-7, receiver eye diagram, 38.3.2, M, Yes[], meet BER objective of 10^-12 when signal delivered to receiver meets requirements specified in figure 39-5"

Proposed Response **Response Status** W

Reject: The group decided to not use BER as a specification methodology for jumper cable assemblies. Reference to BER in 39.3.2 will be removed along= with
the associated PIC.

Comment ID 30 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** 39.7.4.2 **P** 39.15 **L** 35

Comment Type E **Comment Status** A

Jumper cable requirements shown in Table 39-6 do not appear in PICS.

SuggestedRemedy

Add an item to the PICS to reflect the jumper cable requirements shown in Table 39-6.

Proposed Response **Response Status** W

Reject: There is a typo in LI-1. The content of the value/comment column= will be
changed
the table reference from 39-4 to 39-6. Add "table 39-6" to the feature= column.

Comment ID 22 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** Figure 39-1 **P** 39.3 **L** 1

Comment Type E **Comment Status** A

Suggest the text at the top of the figure be changed.

SuggestedRemedy

Change text to read `Shielded Jumper Cable', which is much more descriptive. Also, clause 39.4 does not indicate the jumper contains 'balanced pairs'.

Proposed Response **Response Status** W

Accept

Type: TR/technical required T/technical E/editorial
Comment: X/received D/dispatched for consideration A/accepted R/rejected
Response: O/open W/written S/sent to commentor for review C/closed U/unsatisfied Z/withdrawn

Comment ID 33 **Topic**

Name Robert Campbell
Email rrcampbell@lucent.com
Phone (908) 957-2669
Fax (908) 957-5604
Co. Lucent Technologies

Cl 39 **SC** Figure 39-1 **P** 39.3 **L** 1

Comment Type E **Comment Status** A

Modify Figure 39-1 to increase clarity for reader.

SuggestedRemedy

Suggest the following to increase clarity of Figure 39-1.

1. Place dotted lines around transmit and receive portions to show what is inside equipment.
2. Add `1000BASE-CX' to Transmit Network and Receive= Network.
3. Show a connector between T+/T- and 1000BASE-CX Transmit Network and between R+/R- and 1000BASE-CX Receive= Network.

Proposed Response **Response Status** W

Accept 1 and 2. Reject 3: A connector at this location would be an implementation choice which
while not specifically disallowed by the standard, is not encouraged. This= is the
reason that TP1 and
TP4 are not compliance points, since these are not measurable in a system environment.
Additionally, add the words "(half link is shown)" to the 39.1 title.

Comment ID 159 **Topic**

Name David Law
Email davel@pdd.3com.com
Phone +44 1442 438060
Fax +44 1442 438333
Co. 3Com

Cl 41 **SC** 41.2.1.6 **P** 41.7 **L** 2

Comment Type T **Comment Status** A

Description of partition function does not mention that a port is partitioned due to a jabber_timer expiration during a carrier event in which a collision occurred.

SuggestedRemedy

Add the following sentence after line 2 of page 41.7: "The partition condition is additionally detected due to a carrier event of duration in excess of jabber_timer in which a collision has occurred."

Proposed Response **Response Status** C

Accepted.

Comment ID 160 **Topic**

Name David Law
Email davel@pdd.3com.com
Phone +44 1442 438060
Fax +44 1442 438333
Co. 3Com

Cl 41 **SC** 41.2.1.6 **P** 41.7 **L** 13

Comment Type T **Comment Status** A

Description does not mention that the partition function is reset in response to transmit activity as well as receive activity.

SuggestedRemedy

Add the following sentence after bullet b) on line 13 of page 41.7: "c) The repeater has transmitted on the port for more than the number of bits specified for no_collision_timer (see 41.2.2.1.4) without incurring a collision."

Proposed Response **Response Status** C

Accepted.

Comment ID 164 **Topic**
Name Moshe Voloshin
Email moshev@cisco.com
Phone 408 527 3070
Fax 408 527 0181
Co. Cisco

Cl 41 **SC** 41.2.2.1.4 **P** 41.9 **L** 34

Comment Type T **Comment Status** A

The values for false_carrier_timer, valid_carrier timer, and no_collision_timer are the same values used in clause 27 for 100 Mb/s repeaters. These values are derived from calculations that consider bit budgets, slot time, and minimum valid frame sizes, and must be modified to accomodate changes made to slot time in 1000 Mb/s operation.

SuggestedRemedy

Change the false_carrier_timer and valid_carrier_timer done values from "450 - 500 BT" to "3600 - 4000 BT."

Change the no_collision_timer done values from "450 - 560 BT" to "3600 - 4144 BT."

Proposed Response **Response Status** C

Accepted. The lower bound of the all three timers must be large enough for the round trip propogation of a transmission from the repeater to the most remote MAC. This corresponds to the repeater core processing delay, plus the round trip delay through a repeater PHY, plus the cable round trip delay, plus the worst case response (MDI to MDI) of the MAC, plus jam size. Assuming a topology with one very long repeater link, and all other repeater lengths virtually zero, the worst case round trip delay on the long link is: 320 + 328 + 2224 + 440 + 32 = 3344 BT. Scaling the clause 27 value by a factor of 8 (corresponding to the factor of 8 increase in slot time) results in a lower bound value of 3600 which accomodates the worst case round trip with a generous margin.

The upper bound of the false_carrier_timer in clause 27 needed to be less than a minimum valid frame size, since the 100 Mb/s jam pattern could be data and a jam longer than the minimum frame size could conceivably be converted to a valid frame. The 1000 Mb/s repeater jam pattern is void symbols which is highly unlikely to be converted to a valid frame, however it seems the prudent way to proceed is to also scale the upper bound of the false_carrier_timer and the valid_carrier_timer by a factor of 8. This results in an upper bound of 4000 BT.

The upper bound of the no_collision_timer cannot be longer than the duration of a minimum size frame including preamble. For 100 Mb/s operation this is a 512 bit frame plus 48 bits (minimum) of preamble. The corresponding calculation of the minimum valid carrier event at 1000 Mb/s is 4096 bits (512 bytes) plus 48 bits of preamble = 4144 BT.

Comment ID 165 **Topic**
Name Moshe Voloshin
Email moshev@cisco.com
Phone 408 527 3070
Fax 408 527 0181
Co. Cisco

Cl 41 **SC** 41.2.2.1.4 **P** 41.9 **L** 34

Comment Type T **Comment Status** A

The values for idle_timer are the same values used in clause 27 for 100 Mb/s repeaters. These values were based on empirical data of the duration of noise resulting from power cycling 100 Mb/s PHYs. It is likely that the actual duration of these events will be similar at 1000 Mb/s and will not occur ten times faster due to the increased bit rate. To maintain the timer values to be the same duration, they must be increased by a factor of 10 when measured in bit times.

SuggestedRemedy

Change the idle_timer done values from "24000 - 40000 BT" to "240000 - 400000 BT."

Proposed Response **Response Status** C

Accepted.

Comment ID 161 **Topic**
Name David Law
Email davel@pdd.3com.com
Phone +44 1442 438060
Fax +44 1442 438333
Co. 3Com

Cl 41 **SC** 41.6.4.8 **P** 41.24 **L** 11

Comment Type T **Comment Status** A

PICS should have an item for partitioning port when a collision occurs during a carrier event with a duration exceeding jabber_timer_done.

SuggestedRemedy

Insert a new item between PA2 and PA3 (and renumber items accordingly) for "Excessive receive duration with collision for entry into partition state." with comment "Reception duration in excess of jabber_timer with collision."

Proposed Response **Response Status** C

Accepted.

Comment ID 162 **Topic**
Name Stephen Haddock
Email shaddock@extremenetworks.com
Phone 408 863 2812
Fax 408 342 0990
Co. Extreme Networks

Cl 41 **SC** 41.6.4.8 **P** 41.24 **L** 15

Comment Type T **Comment Status** A

PICS item PA4 comment is inaccurate.

SuggestedRemedy

Replace "successful collision" with "successful transmission or reception"

Proposed Response **Response Status** C

Accepted.

Comment ID 163 **Topic**
Name Moshe Voloshin
Email moshev@cisco.com
Phone 408 527 3070
Fax 408 527 0181
Co. Cisco

Cl 41 **SC** Figure 41-2 **P** 41.11 **L** 33

Comment Type T **Comment Status** A

A false carrier event should cause jam to be transmitted on all ports including the port that received the false carrier.

SuggestedRemedy

Add a variable "force_jam" that is:
a) defined in subclause 41.2.2.1.2,
b) set in the Carrier Integrity Monitor state machine,
c) and tested in the Repeater Unit state machine.

The definition should be:
"Flag from Carrier Integrity state diagram for port X which causes the Repeater Unit to enter the Jam state.

Values: true; port is in the False Carrier state.
false; port is not in the False Carrier state."

In the Carrier Integrity Monitor state diagram (Figure 41-4):
a) set force_jam(X) to True in the False Carrier state.
b) set force_jam(X) to False in the Link Unstable and the Link Wait states.

In the Repeater Unit state diagram (Figure 41-2):
Add a open transition into the Jam state upon the condition (ResetRepeater = false) * (PowerOn = false) * (force_jam(ANYXJIP) = true)

Proposed Response **Response Status** C

Accepted.

Comment ID 17 **Topic**
Name Howie Johnson
Email howiej@sigcon.com
Phone 425 556 0800
Fax 425 881 6149
Co. Signal Consulting

Cl 41 **SC** 41.1 **P** 41.2 **L** 14

Comment Type E **Comment Status** A

Brackets in figure 41-1 show funny little boxes

SuggestedRemedy

Copy good-looking brackets from fig. 2-1

Proposed Response **Response Status** C

Accepted.

Comment ID 156 **Topic**
Name Kevin Daines
Email kevind@packetengines.com
Phone 509 922 9190
Fax 509 922 9185
Co. Packet Engines

Cl 41 **SC** 41.1 **P** 41.2 **L** 26

Comment Type E **Comment Status** A

GMII acronym expansion incorrect.

SuggestedRemedy

Add the word "Gigabit" to the acronym expansion.

Proposed Response **Response Status** C

Accepted.

Comment ID 158 **Topic**
Name Pat Thaler
Email pat@hprnd.rose.hp.com
Phone 916 785 4538
Fax 916 785 5949
Co. Hewlett Packard

Cl 41 **SC** 41.2.1.6 **P** 41.6 **L** 48

Comment Type E **Comment Status** A

First sentence says the partition function "may be desirable" but it is a required function.

SuggestedRemedy

Replace "In large multisegment networks it may be desirable" with "It is desirable"

Proposed Response **Response Status** C

Accepted.

Comment ID 168 **Topic**
Name Stephen Haddock
Email shaddock@extremenetworks.com
Phone 408 863 2812
Fax 408 342 0990
Co. Extreme Networks

Cl 41 **SC** 41.2.2.1.2 **P** 41.9 **L** 1

Comment Type E **Comment Status** A

Link Configuration has been renamed Auto-Negotiation.

SuggestedRemedy

Replace the definition of the link_status variable with:
"Indication from the Auto-Negotiation process (see clause 37) that Auto-Negotiation has completed and the priority resolution function has determined that the link will be operated in half duplex mode.

values: OK; the link is operational in half duplex mode.
FAIL; the link is not operational in half duplex mode."

Proposed Response **Response Status** C

Accepted.

Comment ID 157 **Topic**

Name Stephen Haddock
Email shaddock@extremenetworks.com
Phone 408 863 2812
Fax 408 342 0990
Co. Extreme Networks

Cl 41 **SC** 41.2.2.1.2 **P** 41.8 **L** 34

Comment Type E **Comment Status** A

RX_EN(X) is not the correct signal name.

SuggestedRemedy

Change "RX_EN(X)" to "RX_DV(X)".

Proposed Response **Response Status** C

Accepted

Comment ID 166 **Topic**

Name Stephen Haddock
Email shaddock@extremenetworks.com
Phone 408 863 2812
Fax 408 342 0990
Co. Extreme Networks

Cl 42 **SC** 42.3 **P** 42.3 **L** 41

Comment Type E **Comment Status** A

Incorrect spelling.

SuggestedRemedy

Change "topoloty" to "topology".

Proposed Response **Response Status** C

Accepted

Comment ID 167 **Topic**

Name Stephen Haddock
Email shaddock@extremenetworks.com
Phone 408 863 2812
Fax 408 342 0990
Co. Extreme Networks

Cl 42 **SC** 42.3.1.1 **P** 42.4 **L** 65

Comment Type E **Comment Status** A

Incorrect spelling.

SuggestedRemedy

Change "representatins" to "representation".

Proposed Response **Response Status** C

Accepted