Cl **00** *SC* **32.5.3.4** *P* **32-1** *L* **42** # **34**

David Law 3Com

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

Note:- Comment is against Clause 32 but I cannot select this.

I cannot find a subclause 32.5.3.4 in 100BASE-T2 but by the looks of the change it should be 32.5.4.4 that is being renumbered here.

SuggestedRemedy

Suggest text 'Renumber 32.5.3.4 as 32.5.4.3' should read 'Renumber 32.5.4.4 as 32.5.4.3'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **32.6.1.2.1** *P* **32-1** *L* **26** # **32**

David Law 3Com

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

Note:- Comment is against Clause 32 but I cannot select this.

Typo.

SuggestedRemedy

Suggest text '32.6.1.2.1 7' should read '32.6.1.2.1'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **32.6.1.2.2** *P* **32-1** *L* **29** # **33**

David Law 3Com

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

Note:- Comment is against Clause 32 but I cannot select this.

I cannot find a reference to 100BASE-T2 Control Register in subclause 32.6.1.2.2 but I can find a reference in 32.6.1.3.2 and yet there is not change called out for this in 802.3ab. Could this be what this change should be referring to. Also we have the same spurious 7 as we had in 32.6.1.2.1 above.

SuggestedRemedy

Suggest text '32.6.1.2.2 7' should read '32.6.1.3.2'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **34.3** *P* **34-1** *L* **33** # **36**

David Law 3Com

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

Note:- Comment is against Clause 34 but I cannot select this.

Please add the Note to the bottom of this table explaining the meaning of 'I'. This note should be formatted as in the published 802.3-1998 Table 34-1.

SuggestedRemedy

Please add the following note to Table 34-2 'NOTE I denotes that there is information in the International Standard regarding operation on this media.'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **34.4** *P* **34-1** *L* **9** # **35**

David Law 3Com

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

Note:- Comment is against Clause 34 but I cannot select this.

I do not believe that 1000BASE-T is PDAM 26.

SuggestedRemedy

Please correct this reference.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **42.2** *P* **42-1** *L* **10** # **37**

David Law 3Com

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

Note:- Comment is against Clause 34 but I cannot select this.

Typo.

SuggestedRemedy

Suggest text '... DTES ...' should read '... DTEs ...'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* *P* **1-3** *L* **28** # **14**

Sailesh K. Rao Level One Communica

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

patter

SuggestedRemedy

pattern

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **1-1** *L* **12** # **22**

David Law 3Com

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

The comment says that the changes are against 802.3z, 802.3x&y and 802.3. Please change this to say the consolidated edition, 802.3-1998. Also remove spurious ')'.

SuggestedRemedy

Suggest the text '... 802.3z, 802.3x&y, 802.3)' should read '... 802.3-1998'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **1-3** *L* **28** # **70**

Bob Noseworthy UNH

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

typo

SuggestedRemedy

change "nmethods" to "methods"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **1-3** *L* **4-9** # **71**

Bob Noseworthy UNH

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

Control Mode is incorrectly defined. Currently defined only for the case when carrier extend or carrier extend error is indicated.

SuggestedRemedy

redefine to
"
1.4.xxx Control mode: In 1000Base-T, the end of a frame is signaled by a control mode, which immediately follows a data mode and
proceeds the idle mode. This occurs when the GMII signal TX_EN is set to FALSE. During this mode, several control fields are
transmitted as code-groups to complete a frame. These include two convolutional encoder reset code-groups, two end-of-shell
delimiter code-groups, and possibly a number of carrier extend code-groups.
"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.160** *P* **1-1** *L* **50** # **21**

David Law 3Com

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

Usually mention 802.3 in definition clause references. Also note capitalisation of the word Clause.

SuggestedRemedy

Suggest the text '(See clauses 36 and 40.)' should read '(See IEEE802.3 Clauses 36 and 40).

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.161** *P* **1-2** *L* **2** # **23**

David Law 3Com

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

This definition seems to be out of date as reference to the GMII has been removed or is missing. Please align with definition for PHY found in 802.3-1998.

SuggestedRemedy

Suggest the text '... (MII) consisting of the ...' should read '...(MII), or between the MDI and Gigabit Media Independent Interface (GMII), consisting of the ...'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.162** *P* **1-2** *L* **10** # **24**

David Law 3Com

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

This definition seems to be out of date and therefore incorrect as it states that only the 1000BASE-T4 PMA performs clock recovery. I believe both the 100BASE-T2 and 1000BASE-T PMA's also perform clock recovery (See figure 40-3). Suggest the text be changed to match that of 802.3-1998 as this is more generic.

SuggestedRemedy

Suggest the text '... (in the case of 100BASE-T4) ...' should read '...(depending on the PHY) ...'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.201** *P* **1-2** *L* **41** # **25**

David Law 3Com

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

Reword suggested as 100BASE-X is no longer the last of the list.

SuggestedRemedy

Suggest the text '... uses Manchester symbols and 100BASE-X use ...' should read '... uses Manchester symbols; 100BASE-X uses ...'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.204** *P* **1-2** *L* **49-51** # **26**

David Law 3Com

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

Is it correct that the Technology Ability Field can indicate 100BASE-T2 and 1000BASE-T ability, it does not look like it can according to the definition of this field found in Table 28B-1 of 802.3.

SuggestedRemedy

Remove mention of both 100BASE-T2 and 1000BASE-T from this definition if they are not carried in the Technology Ability Field.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.42** *P* **1-1** *L* **15** # **20**

David Law 3Com

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

In 802.3-1998 this definition is 1.4.53, not 1.4.42 as it is this draft. Suggest that numbers are not allocated in the draft and that this is done by the IEEE editor. In the draft they should appear as 1.4.xxx. Please correct this for all changed definitions.

SuggestedRemedy

Renumber changed definition to be '1.4.xxx'

Proposed Response *Response Status* **C**

ACCEPT.

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

David Law 3Com

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

Within the published 802.3-1998 the encoding is already called 4D-PAM5 (see 30.3.2.1.3 aPhyTypeList for example). If it is now going to be called 8B/1Q4 we need to do a search and replace for 4D-PAM5 throughout the published document and add these changes to the change pages in 802.3ab

SuggestedRemedy

Perform a global search and replace for 4D-PAM5 throughout the published document (802.3-1998) and add these changes to the change pages in 802.3ab.

Places where 4D-PAM5 appears include:-
30.3.2.1.2 aPhyType
30.3.2.1.3 aPhyTypeList
30B.2 ASN.1 module for CSMA/CD managed objects.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will use 4D-PAM5 universally in Clause 40.
Do global change on 8B/1Q4

Cl **01** *SC* **1.4.xxx** *P* **1-3** *L* **32 - 34** # **28**

David Law 3Com

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

Since a PHY is defined as the portion of the physical layer between the MDI and the MII or the MDI and the GMII, doesn't this mean that a 100/1000 capable device with only one RJ45 connector has, in strict 802.3 terms, two PHYs and is hence a Multi-port device by this definition. Would it not be better to use the number of MDI's to define a Single/Multi-port device rather than the number of PHYs.

SuggestedRemedy

Suggest that PHY be replaced by MDI in both the Single and Multi-port device definitions.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **40.11.4.1** *P* **40-135** *L* **45** # **9**

Terry Cobb Lucent

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

Start frequency for delay not consistent with previous standards and TIA.

SuggestedRemedy

Change from 1 to 2 Mhz.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **40.11.4.2** *P* **40-135** *L* **51** # **10**

Terry Cobb Lucent

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

Start frequency for delay skew not consistent with previous standards and TIA.

SuggestedRemedy

Change from 1 to 2 Mhz.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **22.2.4.7.7** *P* **22-1** *L* **15** # **83**

Bob Noseworthy UNH InterOperability L

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

TYPO

SuggestedRemedy

change "provdes" to "provides"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **28B** *SC* **28.2.4.1.7** *P* **28-1** *L* **12** # **29**

David Law 3Com

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

It is usual to include the register number and if it is read only in the subclause title of a register in Clause 28, see existing 28.2.4.1.6 for an example.

SuggestedRemedy

Suggest the text '28.2.4.1.7 Auto-Negotiation Link Partner Ability register' should read '28.2.4.1.7 Auto-Negotiation Link Partner Ability register (Register 8) (RO)'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **28B** *SC* **28.2.4.1.7** *P* **28-1** *L* **23** # **31**

David Law 3Com

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

Note:- Comment is against Clause 28 but I cannot select this.

Typo.

SuggestedRemedy

Suggest text ' Next Pages .' should read ' Next Pages.' that is remove the space before the period.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **28B** *SC* **28.2.4.1.7** *P* **28-1** *L* **26** # **30**

David Law 3Com

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

Note:- Comment is against Clause 28 but I cannot select this.

It is not usual to include the register number in the table title, see existing 28.2.4.1.6 for an example.

SuggestedRemedy

Suggest the text 'Table 28-8 Link Partner Next Page Ability register bit definitions (MII Management register 8)' should read 'Table 28-8 Link Partner Next Page Ability register bit definitions'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **28D** *SC* **28D.5** *P* **28D-1** *L* **35** # **38**

David Law 3Com

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

The change listed here for 28.3.1 does not match the actual change to 28.3.1 specified on page 28-1 of this 802.3ab draft. 1GigT is added, not 1000BASE-T.

SuggestedRemedy

Suggest the text '... for "x" in 28.3.1 (e.g., link_status_1000BASE-T.) 1000BASE-T represents that ...' should read '... for "x" in 28.3.1 (e.g., link_status_1GigT.) 1GigT represents that ...'.

Proposed Response *Response Status* **C**

ACCEPT.

Use 1GigT

Cl **30B** *SC* **30B** *P* **30B-1** *L* **5** # **39**

David Law 3Com

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

Typo.

SuggestedRemedy

Suggest '... oin ...' should read ' ... in ...'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40-B** *P* **40-126** *L* # **6**

Robert Campbell Lucent Technologies

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

Add sub-clause for cable clamp validation test as request at the Austin meeting.

SuggestedRemedy

Cable Clamp Validation

In order to ensure the cable clamp described above is operating correctly the following test procedure is provided. Prior to
conducting the following test shown in Figure 40B-3 the clamp should be tested to ensure the insertion loss and return loss
are as specified above. The cable clamp validation test procedure uses a well-balanced 4-pair Category 5 unshielded test
cable or better that meets the specifications of 40.7. The test hardware consists of the following.

1. Resistor Network - Network consists of three 50 +/-0.1% ohm resistors; two resistors are connected in series as a
differential termination for cable pairs and the other resistor is connected between the two and the ground plane as a
common mode termination.
2. Balun - Laboratory quality with a 100 ohm differential input, 50 ohm differential output and a 50 ohm common mode
output (B&H Electronics 040-0055 or equivalent)
3. Test Cable - 4-pair 100 ohm UTP category 5 balanced cable at least 30 meter long.
4. Chokes (2) - Fair-Rite ferrite type 0443164251, or equivalent.
5. Ground Plane - Copper sheet or equivalent
6. Signal Generator - Hewlett Packard 8648B Signal Generator with Mini-Circuit RF Power Amplifier
(Model TIA-1000-1R8)
7. Oscilloscope
8. Receiver - Tektronix Digital Oscilloscope Model 11402

FIGURE 40B-3: Cable Clamp Validation Test Configuration

With the test cable inserted in the cable clamp, a signal generator with a 50 ohm output impedance is connected to one end
of the cable clamp and an oscilloscope with a 50 ohm input impedance is connector to the other end. The signal generator
shall be capable of providing a sine wave signal of 1 MHz to 250 MHz. The output of the signal generator is adjusted for a
voltage of 2.0 Vrms (5.65 Vpp) at 20 MHz on the oscilloscope. The remainder of the test is conducted without changing the
signal generator voltage. The cable pairs not connected to the balun shall be terminated in a resistor network, although

when possible it is recommended that each cable pair be terminated in a balun. It very important that the cable clamp,
balun, receiver, and resistor networks has good contact with the ground plane. The 2 chokes, which are located next to each
other, shall be located approximately 2.0 cm from the clamp. The cable between the clamp and the balun should be straight
and not in contact with the ground plane.

The differential mode and common mode voltage outputs of the balun shall meet the limits shown in Table
40B-1over the frequency range 1 to 250 MHz for each cable pair. The differential mode voltage at the output of the hybrid
must be increased by 3 dB to take into account the 100-to-50 impedance matching loss of the balun.

TABLE 40B-1 Common and Differential Mode Output Voltages

NOTE 1: Prior to conducting the validation test the cable clamp should be tested without the cable inserted to determine the
variation of the signal generator voltage with frequency at the output of the clamp. The signal generator voltage shall be
adjusted to 2 rms (5.65 Vpp) at 20 MHz on

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use 1.0 Vrms and 1.414 Vpp(2 instances)
Tune table 40B-1
Modify equipment list to use equivalent generic test equipment specs

---

Cl **40** *SC* **40.1** *P* **40-1** *L* **24** # **103**

Geoff Thompson Nortel Networks

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

My comment on 40.1 Page 1 Line 24 has not been fixed correctly. (TR)
This text points to TIA as the spec as called out in 40.11. 40.11 calls out 11801 and has TIA only in the footnotes.
ORIGINAL COMMENT
The phrase "...to ANSI/EIA/TIA-568-A as specified in 40.7" is not correct.
There is no statement in 40.7 that can be used as a compliance statement.
The only references to 568 are in footnotes which are not part of the standard.

SuggestedRemedy

ORIGINAL REMEDY: You have to go to EIA in 40.7 or to 11801 here.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Believe modified text proposed by the cable team meets the intent of this comment.

Cl **40** *SC* **40.1.2** *P* **40-1** *L* **44** # **40**

David Law 3Com

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

Three items in list, suggest first and second should be separated by a ',' not an 'and'.

SuggestedRemedy

Suggest the text '... 1000BASE-T PHY and the ISO ...' should read '... 1000BASE-T PHY, the ISO ...'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.1.2** *P* **40-2** *L* **13** # **42**

David Law 3Com

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

The note belonging to the GMII, denoted by the start against it in Figure 40-1, is missing.

SuggestedRemedy

Suggest the text '* GMII is optional' is added at the bottom of Figure 40-1.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.1.2** *P* **40-2** *L* **3** # **41**

David Law 3Com

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

Formatting, the text 'OSI REFERENCE MODEL LAYERS' should be centre aligned with the seven layer stack below.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.1.2** *P* **40-2** *L* **44** # **104**

Geoff Thompson Nortel Networks

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

ORIGINAL COMMENT
The actual requirements in 40.7 are for 11801 not 568
RECIRC COMMENT
Is not quite fixed to my satisfaction. You deleted the reference which was a good idea. But now we are a little on the lean side. I will settle for a
forward reference to the cabling spec in 40.11. That is, change:
40-2, Line 42 (start of line) to read: "...cabling as precisely defined in 40.11."

SuggestedRemedy

see above

Proposed Response *Response Status* **U**

ACCEPT.

Cl **40** *SC* **40.1.3.1** *P* **40-5** *L* **1-49** # **61**

David Law 3Com

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

The Service Primitive PMA_SCRSTATUS.request(scr_status) seems to be missing from this figure.

SuggestedRemedy

Add the Service Primitive PMA_SCRSTATUS.request(scr_status) to the Figure.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.1.3.1** *P* **40-5** *L* **15** # **59**

David Law 3Com

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

Suggest that the link_control connection from Auto-Negotiation should be formatted in the same way as the other Service Primitives in this figure. Also should label that this primitive comes from the Auto-Negotiation function rather than just 'Clause 28'.

SuggestedRemedy

Suggest 'link_control' should read 'PMA_LINK.request(link_control)' and that 'Clause 28' should read 'Auto-Negotiation'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.1.3.1** *P* **40-5** *L* **17** # **60**

David Law 3Com

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

Suggest that PMA_LINK.indicate(link_status) should also be shown as a signal going to Auto-Negotiation to the right of the figure.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.1.4.1** *P* **40.7** *L* **11** # **105**

Geoff Thompson Nortel Networks

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

ORIGINAL COMMENT
In order to meet the requirments of this "shall" I will be required to test for "compatibility" with every other transceiver on the market. In
addition, I don't know what constitutes "compatibility. In the famous words of Lloyd Oliver: "My grandmother is compatible."
The closer that I look at this the less that it seems to say. I'm not sure what the goal is.
ORIGINAL REMEDY
Change the wording to something that is meaningful.
RECIRCULATION COMMENT:
Well, you did take the shall out but the result is rather nonsensical. I would request that the committee spend some time on editorial repair of the
new text.

SuggestedRemedy

see abover

Proposed Response *Response Status* **C**

ACCEPT.

The offending text has been plucked from the draft.
We will break up the last sentence in 40.1.5.1 by putting a period after optional and creating a new last sentence that reads:

The behavior of all systems is identical to that of a system with a full GMII implementation.

Cl **40** *SC* **40.1.4.3** *P* **40-7** *L* **25** # **102**

Geoff Thompson Nortel Networks

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

ORIGINAL COMMENT
What is this sub-clause trying to say? It does not seem to say anything useful. Can we fix it so it has a higher
purpose than just killing tree?
Also the business about the exposed GMII being optional has already been covered in the sub-clause above (for DTEs at least)
ORIGNIAL REMEDY
Perhaps we could say here that 1000BASE-T needs no special cabling for DTE to DTE connection
RECIRCULATION COMMENT:
You blew it away completely. I still think it would have been useful to just put my new text in.

SuggestedRemedy

see above

Proposed Response *Response Status* **C**

ACCEPT.
We will add the following sentence to the end of 40.1.5.1.

1000BASE-T needs no special cabling for DTE to DTE connection.

Cl **40** *SC* **40.11.2.1** *P* **40-134** *L* **37** # **111**

Robert Love IBM

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

Change "at all frequencies from 1 MHz to 100MHz." to
"at all frequencies (measured in MHz) from 1 MHz to 100 MHz."

SuggestedRemedy

see above

Proposed Response *Response Status* **C**

REJECT.

Cl **40** *SC* **40.11.2.3** *P* **134** *L* **8** # **109**

Robert Love IBM

Comment Type **E** *Comment Status* **A** *40*

Change "The return loss for each duplex segment shall be" to read
"The return loss for each duplex segment shall meet or exceed"

SuggestedRemedy

See above

Proposed Response *Response Status* **C**

Cl **40** *SC* **40.11.4.1** *P* **40-135** *L* **45** # **12**

Terry Cobb Lucent

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

Start frequency for delay inconsistent with previous standards and TIA.

SuggestedRemedy

Change from 1 to 2 Mhz.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.11.4.2** *P* **40-135** *L* **51** # **13**

Terry Cobb Lucent

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

Start frequency for delay skew inconsistent with previous standards and TIA.

SuggestedRemedy

Change from 1 to 2 Mhz.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.11.5** *P* **40-136** *L* **11-12** # **110**

Robert Love IBM

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

Change " . . .which are reduced to a small residual using cancelers . . ." to
" . . .which are reduced to a small residual noise using cancelers . . ."

SuggestedRemedy

See above

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.12.1** *P* **40-98** *L* **25** # **19**

Sailesh K. Rao Level One Communica

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

The table entries were calculated from those in Clause 36 (Table 36-9a). It appears that the first entry, TX_EN sampled to MDI Output, was miscalculated. It is 80BT, but it should be (192+136-240)BT = 88BT.

SuggestedRemedy

Change 80BT to 88BT. Correspondingly, change page 40-99, line 8 from 80BT to 88BT and page 40-99, line 27 from 128BT to 136BT.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Split between T and R

Cl **40** *SC* **40.2** *P* **40-14** *L* **33-34** # **69**

Bob Noseworthy UNH

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

the word "receiving" appears erroneously above "PCS"

SuggestedRemedy

delete

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.2** *P* **40-6** *L* **20** # **62**

David Law 3Com

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

The Service Primitive PMA.TXENSTATUS.request(tx_enable) defined in 40.2.9 appears to be missing from this summary list.

SuggestedRemedy

Add the Service Primitive PMA.TXENSTATUS.request(tx_enable) to this summary list.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.2.7** *P* **40-12** *L* **12-18** # **91**

Bob Noseworthy UNH InterOperability L

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

PMA_RXSTATUS.request(loc_rcvr_status) is incorrectly defined.

This primitive is not generated by the PCS Receive function, but rather by the PMA Receive function. This is properly stated in 40.4.2.3 page 40-44, line 5 and 6. "The PMA Receive function ... generates the loc_rcvr_status variable."
As a result, this primitive should be a ".indicate" rather than a ".request"
Figure 40-14 Phy Control State Diagram, currently properly uses the PMA_RXSTATUS primitive as a ".indicate" signal.

SuggestedRemedy

Change all references to PMA_RXSTATUS.request to PMA_RXSTATUS.indicate.

Change text in 40.2.7, from "generated by PCS Receive" to "generated by PMA Receive"

Change text in 40.2.7.2 from "PCS Receive" to "PMA Receive"

Change appropriate arrow source and direction in Figures
40-3 Division of responsibility between 1000Base-T PCS and PMA,
40-4 1000Base-T Service Interfaces,
40-5 PCS Reference Diagram,
40-13 PMA Reference Diagram.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.2.7** *P* **40-12** *L* **29** # **44**

David Law 3Com

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

The loc_rcvr_status parameter can also take the value SCR_OK as defined in 40.4.2.4.

SuggestedRemedy

Add the value SCR_OK to the list of values that the loc_rcvr_status parameter can take.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Should be scr_status, not loc_rcvr_status

Change L22 p44
from
loc_rcvr_status=scr_ok
to
scr_status = OK

Cl **40** *SC* **40.2.8** *P* **40-12** *L* **46** # **45**

David Law 3Com

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

Typo.

SuggestedRemedy

Missing period at the end of the paragraph.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3** *P* **40-15** *L* **13 - 34** # **63**

David Law 3Com

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

The Service Primitive PMA_SCRSTATUS.request(scr_status) seems to be missing from this figure.

SuggestedRemedy

Add the Service Primitive PMA_SCRSTATUS.request(scr_status) to the Figure.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.1.3.5** *P* **40-22,23** *L* **43-53, 1-9** # **76**

Bob Noseworthy UNH InterOperability L

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

Comment 6 of 6 Concerning the Transmit State Machine: (refer to Comment 1 for reasoning.)

This comment makes the necessary changes to the textual definitions of the "Encoding of End-of-Stream Delimiter" Note, these definitions disagreed with D4.1 Fig 40-9 as well.

SuggestedRemedy

Change sentence on lines 47-48 begining "If carrier extend..."
to:
"If carrier extend error is indicated during ESD, that is, when tx_error(n)*tx_error(n-1)*tx_error(n-2)*(TXD(n)!=0x0F)=1, the symbols corresponding to ESD_Ext_Err row shall be used."

delete (!tx_error(n)) from definition of ESD2_Ext_0 on page 40-23 line 2.

change definition of ESD2_ext_1 on line 5, after "when the condition" to:
"(!tx_enable(n-3))*(!tx_enable(n-4))*(!tx_error(n))*tx_error(n-1) *tx_error(n-2)*tx_error(n-3)=1"

change definition of ESD2_ext_2 on line 8, after "when the condition" and before ", in the absence of" to:
"(!tx_enable(n-3))*(!tx_enable(n-4))*tx_error(n)*tx_error(n-1)*tx_error(n-2)*tx_error(n-3)*(TXD(n)=0x0F)=1"

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.3.1.4** *P* **40-30** *L* **18-25** # **81**

Bob Noseworthy UNH InterOperability L

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

40.3.1.4 and 40.3.1.4.1 refer to (RAn, RBn, RCn, RDn), defined in 40.3.4.1. However, nothing ever sets these variables.
The rest of the standard refers to the 4 channels as BI_DA, BI_DB, BI_DC, BI_DD, with the exception of 40.3.1.3 which
clearly maps these channels to the transmit code group (An, Bn, Cn, Dn).

COMMENT WITHDRAWN 11/9/98

SuggestedRemedy

Possible solution:
Replace second paragraph of 40.3.1.4 with
"In each symbol period, the PCS recieve function receives a code-group of four quinary symbols (RAn, RBn, RCn, RDn) from
the PMA via the PMA_UNITDATA.indicate primitive. The symbols RAn, RBn, RCn, RDn are received from wirepairs BI_DA, BI_DB,
BI_DC, and BI_DD respectively. The received code-group is processed to generate the signals RXD<7:0>, RX_DV, and RX_ER,
which are presented to the GMII. To achieve correct operation, PCS Recieve uses the knowledge of the encoding rules that are
employed in the idle mode. PCS Receive detects the transmission of a stream of data from the remote station and
conveys this information to the PCS Carrier Sense function via the parameter receiving."

Proposed Response *Response Status* **C**

REJECT.
(withdrawn)

Cl **40** *SC* **40.3.1.5** *P* **40-31** *L* **19-24** # **90**

Bob Noseworthy UNH InterOperability L

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

Subclauses 40.3.1.5 and 40.3.1.6 are unnecessary and conflict with proposed changes to the PCS.

SuggestedRemedy

delete these subclauses and all references.

Proposed Response *Response Status* **W**

withdrawn

Cl **40** *SC* **40.3.4.1** *P* **40-33** *L* **43** # **43**

David Law 3Com

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

The parameter loc_rcvr_status is provided by the PMA_RXSTATUS.request (loc_rcvr_status) primitive (see 40.2.7.1), not PMA_RXSTATUS.indicate as suggested in this variable definition.

SuggestedRemedy

Suggest the text '... via the PMA_RXSTATUS.indicate primitive ...' should read '... via the PMA_RXSTATUS.request primitive ...'.

Proposed Response *Response Status* **C**

ACCEPT.

See response to comment 91

Cl **40** *SC* **40.3.4.2** *P* **40-35** *L* **26-31** # **96**

Bob Noseworthy UNH InterOperability L

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

Concerning the Receive State Diagram:

The check_end function is inadequately specified.
This function is used by the PCS Receive State Diagram (Figure 40-10a) to detect the end of a data mode, however, the definition of the function uses a circular reference to Fig 40-10 to specify what the function considers "valid"

"returns a boolean value indicating whether these two consecutive vectors contain symbols corresponding to a valid End-of-Stream Delimiter encoding or not, as specified in 40.3.1.3 and Figure 40-10"

Should clearly specify under what conditions the function returns "TRUE" and what conditions cause the functon to return "FALSE"

SuggestedRemedy

Functionality seems redundant with existing state machine specification, thus, delete check_end function entirely.

remove all references from figure 40-10a.

as a result, two different remedies could be performed

1- change transition from RECEIVE state to 1st CSExtend_Err VECTOR (branch D) to simply:
"Rx(n-1) 'E' CSExtend_Err"
where 'E' represents the inclusive set symbol

or

2- changing transition from RECEIVE to PREMATURE END from "ELSE" to "Rx(n-1) 'E' IDLE" where 'E' represents the inclusive set symbol
change transition from RECEIVE to 1st CSExtend_Err VECTOR to simply: "ELSE"

I believe option "2" is the better solution, as any errored termination of a single frame would not force the corruption of an entire received frame-burst. Option "1" would result in the loss of the entire burst, as would the current D4.1 state machine (assuming that the "corrupted frame end" caused check_end=FALSE)

Proposed Response *Response Status* **W**

Covered in bulk resolution of PCS changes as per Bobs comments

Cl **40** *SC* **40.3.4.4** *P* **40-36** *L* **10-15** # **72**

Bob Noseworthy UNH InterOperability L

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

Comment 2 of 6 Concerning the Transmit State Machine: (refer to Comment 1 for reasoning.)

This comment adds the variable PUDR, and strikes the currently defined message PUDR and the message STD. For proper variable
mapping and primitive use. Also to reduce text in new transmit state machine.
For example, currently "PUDR <= DATA" appears as an expression in a state. This should be "tx_symb_vector <= DATA" and the
exit from the state should be when symb_timer_done, at which time the state machine should simultaneously signal
PMA_UNITDATA.request(tx_symb_vector).
Also, as defined, symb_timer states that "PMA_UNITDATA.request is issued concurrently with symb_timer_done", which clearly
does not occur as defined in the circulated D4.1 Figure 40-9.

SuggestedRemedy

In 40.3.4.4 Messages
Remove STD definition (alias no longer neaded) also, Remove PUDR (alias redefined to a variable, as it requires
a combination of terms)

In 40.3.4.1 Variables,
Add
"
PUDR
Alias for expression "PMA_UNITDATA.request(tx_symb_vector) * symb_timer_done" used by PCS Tranmit process.
"

All exit conditions from states in the PCS Transmit State Diagram that currently use the STD message, should have STD replaced by
the PUDR variable.

All vector mappings in the PCS Transmit State Diagram currently in the form "PUDR <= xxxx" should be replaced by the form
"tx_symb_vector <= xxxx" where xxxx represents the appropriate vector to be transmitted for that state.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.3.5** *P* **40-37** *L* **18-37** # **75**

Bob Noseworthy UNH InterOperability L

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

Comment 5 of 6 Concerning the Transmit State Machine: (refer to Comment 1 for reasoning.)

This comment makes the necessary changes to Figure 40-8 PCS Data Transmission Enabling State Diagram

SuggestedRemedy

due to changes made to Figure 40-9, Figure 40-8 can be simplified.
Specifically, the atomic expressions in state ENABLE DATA TRANSMISSION can be simplified to:
"
tx_enable <= TX_EN
tx_error <= TX_ER
"

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.3.5** *P* **40-38** *L* **1-53** # **80**

Bob Noseworthy UNH InterOperability L

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

Comment 1 of 6 Concerning the Transmit State Machine:

Currently, figure 40-9 and subclause 40.3.1.3.5 differ in the generation of the first four code-groups of the Control Mode. Additionally, four deadlock conditions exist, in the event that tx_enable=FALSE, tx_error=TRUE, and TXD!=(0F or 1F).
The defined system is functional, as Figure 40-8 would prevent this deadlock, but it does so by forcing the end of transmission,
thus corrupting any frame extension or bursting. My concern is not so much as to handle all possible non-conformant MAC
implementations which may improperly signal TXD, but rather to simply force the clause 40 PCS to operate in a similar fashion to
the clause 36 PCS. The primary reasoning for this is that the clause 36 PCS specifies that carrier extend is sent following a
frame when TX_EN=FALSE, and TX_ER=TRUE, and TXD=0F, and carrier extend error is sent following a frame when TX_EX=FALSE and
TX_ER=TRUE and TXD!=0F (refer to 36.2.5.1.4 function VOID)
Thus, a MAC with a GMII interface could function adequately in half-duplex mode with 1000-X devices, but that same MAC could
function inadequately with 1000-T devices due to the current stricter definition. It is recognized that such a MAC would be
technically non-conformant, but my goal is to enhance robustness and interoperability of the 1000-T interface.
As a final reason for the following changes, if a future standards effort defined additional encodings of TXD when TX_EN=FALSE and
TX_ER=TRUE, then that group would have to take great care to modify clause 40 such that the necessary operation of the state
machine was preserved.

SuggestedRemedy

Additonal Functions required:

Primarily to reduce the text appearing in the state diagram and also to ease future modification efforts, the following functions
should be added to 40.3.4.2
"
send_ext
A boolean function used by the PCS Transmit process to determine if the transmission of carrier extension is indicated.
If [tx_enable=FALSE * tx_error=TRUE * TXD<7:0>=0x0F],
then return TRUE;
else return FALSE.
NOTE - send_ext is set by this function definition; it is not explicitly set by the state diagrams.
"

"
send_ext_err
A boolean function used by the PCS Transmit process to determine if the transmission of

carrier extension error is indicated.
If [tx_enable=FALSE * tx_error=TRUE * TXD<7:0>!=0x0F],
then return TRUE;
else return FALSE.
NOTE - send_ext_err is set by this function definition; it is not explicitly set by the state diagrams.
"

where != is the 'not equal' symbol

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.3.5** *P* **40-38** *L* **1-53** # **73**

Bob Noseworthy UNH InterOperability L

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

Comment 3 of 6 Concerning the Transmit State Machine: (refer to Comment 1 for reasoning.)

This comment makes the necessary changes to Figure 40-9
PCS Transmit State Diagram

SuggestedRemedy

If possible, refer to accompanying graphic. In case of discrepencies between graphic and text, the graphic should be
correct.

All "D4.1 state" references below are in regards to the circulated D4.1 Figure 40-9.
If not expressily stated, all PUDR<=xxxx expressions should be changed to tx_symb_vector<=xxxx as a previous comment mentioned.
Likewise, all occurances of "STD" should be the new "PUDR" (or accepted equivalent)

In place of the D4.1 state SEND IDLE/CARRIER EXTENSION, substitute a state entitled SEND IDLE whose atomic expressions are
"COL <= FALSE tx_symb_vector <= IDLE"
Exit conditions are unchanged.
One Entry condition is added, the labeled transition "A".

For the D4.1 state SSD1 VECTOR, add one Entry condition, the labeled transition "C".

For the D4.1 state SSD1 VECTOR, ERROR, add one entry condition, the labeled transition "D".

Delete D4.1 states: 1st CSExtend_Err VECTOR, 1st CSExtend VECTOR, 2nd CSExtend_Err VECTOR, 2nd CSExtend VECTOR, 1st ESD_Ext_Err VECTOR, ESD1 VECTOR with Extend, 2nd ESD_Ext_Err VECTOR, and ESD2_ext_2 VECTOR

Add states:
state: 1st CS Extension VECTOR
entry: from ERROR CHECK: "send_ext=TRUE + send_ext_err=TRUE"
exit: to 2nd CSReset VECTOR: "PUDR*tx_error=FALSE"
to 2nd CS Extension VECTOR: "PUDR*tx_error=TRUE"
expressions: "COL<=receiving
IF (send_ext=TRUE)
THEN tx_symb_vector<=CSExtend
ELSE tx_symb_vector<=CSExtend_Err"
state: 2nd CS Extension VECTOR
exit: to ESD1 VECTOR: "PUDR*tx_error=FALSE"
to ESD1 VECTOR with Extension: "PUDR*tx_error=TRUE"
expressions: "COL<=receiving
IF (send_ext=TRUE)
THEN tx_symb_vector<=CSExtend
ELSE tx_symb_vector<=CSExtend_Err"
state: ESD1 VECTOR with Extension

exit: to ESD2_ext_1 VECTOR: "PUDR*tx_error=FALSE"
to ESD2 VECTOR with Extension: "PUDR*tx_error=TRUE"
expressions: "COL<=receiving
IF (send_ext=TRUE)
THEN tx_symb_vector<=ESD1
ELSE tx_symb_vector<=ESD_Ext_Err"
state: ESD2 VECTOR with Extension
exit: to label "A": "PUDR*tx_error=FALSE"
to label "B": "PUDR*tx_error=TRUE"
expressions: "COL<=receiving
IF (send_ext=TRUE)
THEN tx_symb_vector<=ESD2_ext_2
ELSE tx_symb_vector<=ESD_Ext_Err"
state: CARRIER EXTENSION
entry: from label "B"
exit: to label "A": "PUDR*tx_enable=FALSE*tx_error=FALSE"
to label "C": "PUDR*tx_enable=TRUE*tx_error=FALSE"
to label "D": "PUDR*tx_enable=TRUE*tx_error=TRUE"
to CARRIER EXTENSION: "PUDR*tx_enable=FALSE*tx_error=TRUE"

For the D4.1 state ERROR CHECK, the exit condition to 1st CSReset VECTOR should be changed to simply "ELSE"
Also, the arrows between ERROR CHECK and TRANSMIT ERROR should be reversed.

With care, I believe this state machine can still be represented on a single page.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.3.5** *P* **40-39** *L* **2** # **47**

David Law 3Com

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

The entry to the SEND IDLE/CARRIER EXTENSION state is shown as pcs_reset = ON + BEGIN yet pcs_reset cannot take the value BEGIN (see 40.3.4.1).

SuggestedRemedy

Suggest that text 'pcs_reset = ON + BEGIN' should read 'pcs_reset = ON'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.5** *P* **40-39** *L* **2-4** # **92**

Bob Noseworthy UNH InterOperability L

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

Concerning the Receive State Machine:

both asynchronous entries to state machine use the loc_rcvr_status != ok term. These should be changed to link_status != ok for two reasons. First, to be consistent with other 802.3 receive state machines use of the link_status variable. Second, while loc_rcvr_status=ok should always
coincide with link_status=ok, it is not necessarily true that link_status !=ok coincides with loc_rcvr_status!=ok. For example,
referring to Figure 40-15, loc_rcvr_status could be OK, and yet,
link_control_[HCD]=DISABLE could force link_status=FAIL, which should also prevent frame reception from occuring.

SuggestedRemedy

In figure 40-10a,

change async entry to IDLE state to:
"pcs_reset=ON + (link_status != ok * receiving = FALSE)"
where != represents the not-equal symbol.
Additionally, note that BEGIN is redundant with the definition of pcs_reset in 40.3.1.1.

change async entry to LINK FAILED to:
"link_status != ok * receiving = TRUE"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

For both ASYNC transitions add

(loc_rcvr_status != OK + link_status = FAIL) * receiving = FALSE
.....* receiving = TRUE

Cl **40** *SC* **40.3.5** *P* **40-39** *L* **20-22** # **93**

Bob Noseworthy UNH InterOperability L

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

Concerning the Receive State Diagram:

The SSD2 VECTOR state does not explicitly pass the second byte of received preamble to the GMII. Perhaps this is to be
assumed as the preceeding state (SSD1 VECTOR) sets "RXD<7:0> <= 0x'55", however, no precedent for this assumption
is known to me, and at least for clarity, this same statement should be copied to SSD2 VECTOR

SuggestedRemedy

Add atomic condition to SSD2 VECTOR state of:
"RXD<7:0> <= 0x'55"

Proposed Response *Response Status* **C**

REJECT.

Cl **40** *SC* **40.3.5** *P* **40-40** *L* **12-39** # **94**

Bob Noseworthy UNH InterOperability L

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

Concerning the Receive State Diagram, part b:

Various states do not explicitly pass the carrier extend or carrier extend error byte to the GMII. Perhaps this is to be assumed as the preceeding states set "RXD<7:0> <= 0x'0F" or 1F, however, no precedent for this assumption is known to me, and at least for clarity, the statements should be copied to the appropriate states.

SuggestedRemedy

Add atomic condition to 2nd CSExtend VECTOR state of:
"RXD<7:0> <= 0x'0F"

Add atomic condition to ESD_Ext to IDLE state of:
"RXD<7:0> <= 0x'0F"

Add atomic condition to ESD to CEXT1 state of:
"RXD<7:0> <= 0x'0F"

Add atomic condition to ESD to CEXT2 state of:
"RXD<7:0> <= 0x'0F"

Add atomic condition to ESD to CEXT_Err2 state of:
"RXD<7:0> <= 0x'1F"

Proposed Response *Response Status* **C**

REJECT.

Cl **40** *SC* **40.3.5** *P* **40-41** *L* **6-12** # **74**

Bob Noseworthy UNH InterOperability L

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

Comment 4 of 6 Concerning the Transmit State Machine: (refer to Comment 1 for reasoning.)

This comment adds the "transmitting" variable, and the resulting modifications to the PCS Transmit State Diagram and Carrier Sense state diagram. This is done primarily to ensure that CRS <= TRUE is never improperly asserted.

SuggestedRemedy

Modifications to Carrier Sense State Diagram:

to simpifiy the carrier sense diagram, the following variable should be defined and added to 40.3.4.1

"
transmitting
A boolean set by the PCS Transmit process to indicate that packet transmission is in progress. Used by the Carrier Sense process.
Values: TRUE; The PCS is transmitting a packet.
FALSE; The PCS is not transmitting a packet.
"

As a result, to support this new variable, add:
"transmitting=TRUE" to new PCS transmit state diagram states
SSD1 VECTOR
SSD1 VECTOR, ERROR
and "transmitting=FALSE" to new PCS transmit state diagram states
SEND IDLE
1st CSReset VECTOR
2nd CSReset VECTOR
ESD1 VECTOR
ESD2_ext_0 VECTOR
ESD2_ext_1 VECTOR

Finally, Figure 40-11 can be simplified.
Specifically, the transition from CARRIER SENSE OFF to CARRIER SENSE ON can be changed to:
"(repeater_mode = FALSE * transmitting = TRUE) + receiving=TRUE"
also, the transition from CARRIER SENSE ON to CARRIER SENSE OFF can be changed to:
"[repeater_mode = TRUE + transmitting = FALSE] * receiving = FALSE"

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.3.5** *P* **40-41** *L* **7-9** # **97**

Bob Noseworthy UNH InterOperability L

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

NOTE: this comment would be made obsolete by acceptance of my:
"Comment 4 of 6 Concerning the Transmit State Machine"

Concerning the PCS Carrier Sense State Diagram:

The implementation of the resolution to comment #332 against D4.0, made by Andy Castellano, was made incorrectly in D4.1.

The transition from CARRIER SENSE ON to CARRIER SENSE OFF is errored.

SuggestedRemedy

Change transition from CARRIER SENSE ON to CARRIER SENSE OFF to:
"((repeater_mode = TRUE + (tx_enable = FALSE * tx_error = FALSE))
* receiving = FALSE"

NOTE: this comment would be made obsolete by acceptance of my:
"Comment 4 of 6 Concerning the Transmit State Machine"

Proposed Response *Response Status* **W**

Withdrawn

Cl **40** *SC* **40.3.5.1** *P* **40-41** *L* **40-41** # **87**

Bob Noseworthy UNH InterOperability L

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

typo

SuggestedRemedy

"Sate" should be "State"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.1** *P* **40-42** *L* **37-39** # **86**

Bob Noseworthy UNH InterOperability L

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

PMA_CONFIG.indicate(config) and PMA_UNITDATA.request(tx_symb_vector) appear twice in diagram.

SuggestedRemedy

Delete one of the PMA_CONFIG.indicate(config) arrows.

Merge/join the PMA_UNITDATA.request(tx_symb_vector) arrows such that only one "input" is shown in diagram.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.4.2.4** *P* **40-44** *L* **16** # **89**

Bob Noseworthy UNH InterOperability L

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

"transmitters are disabled" occurs twice.

SuggestedRemedy

delete second sentance in paragraph.
change ending of 1st sentance from "the transmitters are disabled." to "the 1000Base-T transmitters are disabled."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.4.1** *P* **40-46** *L* **18-29** # **77**

Bob Noseworthy UNH InterOperability L

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

link_control is only used to communicate to Auto-Negotiation.
clarify definition as follows.

SuggestedRemedy

change definition of "link_control" to
"link_control_[1GigT]
The link_control_[1GigT] parameter as communicated by the PMA_LINK.request primitive from Clause 28 (Auto-Negotiation) via the Technology-Dependent Interface (see Figure 28-13).
Values: ... "
where ... are the unchanged Values currently defined.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.4.1** *P* **40-46** *L* **30-37** # **78**

Bob Noseworthy UNH InterOperability L

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

link_status is used by both the PMA and the Auto-Negotiation function. To clarify this, modify and add defintions in remedy.

SuggestedRemedy

in the current definition of "link_status", strike the sentence
"Communicated to Clause 28 (Auto-Negotiation.)

add definition for
"link_status_[1GigT]
The link_status parameter as communicated by the PMA_LINK.indicate primitive to Clause 28 (Auto-Negotiation) via the Technology-Dependent Interface (see Figure 28-13)."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.4.1** *P* **40-46** *L* **49** # **46**

David Law 3Com

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

The loc_rcvr_status parameter can also take the value SCR_OK as defined in 40.4.2.4.

SuggestedRemedy

Add the value SCR_OK to the list of values that the loc_rcvr_status variable can take.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Should be scr_status = OK not loc_rcvr_status=SCR_OK

Cl **40** *SC* **40.4.5.1** *P* **40-48** *L* **29-31** # **88**

Bob Noseworthy UNH InterOperability L

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

Concerning the Phy Control State Diagram:

The transition from SEND IDLE OR DATA back to SLAVE SILENT ends "* TX_EN".
Should be "* TX_EN=FALSE",
referring to page 40-44 line 40:
"If unsatisfactory receiver operation is detected ... Transmission of the current packet is completed and PHY Control enters the
SLAVE SILENT state".

SuggestedRemedy

Change transition from SEND IDLE OR DATA to SLAVE SILENT to:
"minwait_timer_done * PMA_RXSTATUS.indicate(NOT_OK) * TX_EN = FALSE"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.5.2** *P* **40-49** *L* **25** # **95**

Bob Noseworthy UNH InterOperability L

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

bad ref

SuggestedRemedy

footnote references FIgure 40-13, should be Figure 40-14.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.5.2** *P* **40-49** *L* **25-26** # **82**

Bob Noseworthy UNH InterOperability L

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

link_status_1000Base-T is undefined. Assuming the definitions of link_status_[1GigT] and link_control_[1GigT] are accepted, then
the entire second sentence of this footnote is unnecessary.

SuggestedRemedy

Delete second sentence of footnote.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.5.2** *P* **40-49** *L* **3-5** # **79**

Bob Noseworthy UNH InterOperability L

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

Concerning the Link Monitor State Diagram:

HCD is not defined or applicable in this clause.
The modifications made to 28.3.1 specify that "1GigT" should be used to identify a 1000Base-T PMA in the auto-negotiation mechanism.

SuggestedRemedy

Change the async entry to LINK DOWN to:
"pma_reset = ON + link_control_[1GigT]=DISABLE + link_control_[1GigT]=SCAN_FOR_CARRIER"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.4.6** *P* **40-49** *L* **52** # **64**

David Law 3Com

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

The Service Primitive PMA.TXENSTATUS.request(tx_enable) defined in 40.2.9 appears to be missing from this summary list.

SuggestedRemedy

Add the Service Primitive PMA.TXENSTATUS.request(tx_enable) to this summary list.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.5** *P* **40-50** *L* **4** # **65**

David Law 3Com

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

The reference to the MII being defined in Clause 28 is incorrect, it is defined in Clause 22.

SuggestedRemedy

Suggest the text '... the Media Independent Interface (Clause 28) ...' should read '... the Media Independent Interface (Clause 22) ...'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.5.1.1** *P* **40-50** *L* **23** # **85**

Bob Noseworthy UNH InterOperability L

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

typo

SuggestedRemedy

"100BASE-T" should be "1000BASE-T"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.5.1.2** *P* **40-52** *L* **39** # **66**

David Law 3Com

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

Typo.

SuggestedRemedy

Suggest 'Auto_Negotiation' should read 'Auto-Negotiation'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.5.2** *P* **40-54** *L* **44** # **67**

David Law 3Com

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

Typo.

SuggestedRemedy

Suggest '... (see Figure 40-16.' should read '... (see Figure 40-16).'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.5.4.1** *P* **40-56** *L* **45** # **68**

David Law 3Com

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

There is a requirement that the first 3 pages that the user sends must be 'blank' yet there is no clear definition anywhere within 802.3 what a blank page is. If it is the case that any data written in the first 3 pages will be substituted, is the data written in fact don't care. If it is not then it should be clearly defined what the data should be, say all zeros.

SuggestedRemedy

Clearly define what is required to be written for these 'blank' pages.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Will revise text to indicate that device must send three pages. Contents are immaterial because pages are placeholders only and will be ignored

Cl **40** *SC* **40.5.5.2** *P* **40-61** *L* **19** # **98**

Geoff Thompson Nortel Networks

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

ORIGINAL COMMENT
"manually" means using ones hands. I have no idea how one uses one's hands to read "all Next Pages"
ORIGINAL REMEDY
Please replace the word "manually" with something more appropriate.
RECIRCULATION COMMENT
I have no way of telling. I can not find the clause nor can I find even strikethrough text.
DISAPPROVE STANDS until satifactory resolution

SuggestedRemedy

See above?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Will be covered in new text for comment 68

Will insert pointer to Clause 28 text that specifies "manual"

Cl **40** *SC* **40.6.1.3.3** *P* **40-82** *L* **11,32** # **8**

Robert Campbell Lucent Technologies

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

Figure 40-28 - Change to agree with validation test configuration.

SuggestedRemedy

Figure 40-28
1. Add two chokes to the cable between the cable clamp and the transmitter. The chokes should be 2 cm from the cable clamp.
2. Change `0.2-0.3 meters' to `~20 cm'.

Line 11: Change `0.2-0.3 meters' to `~20 cm'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.6.1.3.3** *P* **40-82** *L* **11,32** # **7**

Robert Campbell Lucent Technologies

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

Figure 40-28 - Change to agree with validation test configuration.

SuggestedRemedy

Figure 40-28
1. Add two chokes to the cable between the cable clamp and the transmitter. The chokes should be 2 cm from the cable clamp.
2. Change `0.2-0.3 meters' to `~20 cm'.

Line 11: Change `0.2-0.3 meters' to `~20 cm'.

Proposed Response *Response Status* **C**

REJECT.
Duplicate of comment 8

Cl **40** *SC* **40.6.1.3.3** *P* **40-82** *L* **16,21** # **2**

Robert Campbell Lucent

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

Line 16 at additional text for validation procedure.
Line 25 Change Vpeak value to correspond with rms value.

SuggestedRemedy

Line 16: Add `as well as a validation procedure' after `clamp'.
Line 21: Change `1.413' to `2.82' to agree with 2 Vrms.

Proposed Response *Response Status* **O**

Cl **40** *SC* **40.6.1.3.4** *P* **40-90** *L* **26** # **99**

Geoff Thompson Nortel Networks

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

ORIGINAL COMMENT
The asterisk in the resistor matching note in figure 40-27 has no root
ORIGINAL REMEDY:
Change "2000 ohms" to "2000 ohms*" 2 places
alphabetical "ohms" to be changed to an omega symbol and resistors changed to resistor symbol to match style in immediately following diagrams
RECIRCULATION COMMENT:
I don't think there should be an asterisk on the 100 ohm resistor. There is nothing for it to match to in the diagram.

SuggestedRemedy

See above

Proposed Response *Response Status* **C**

ACCEPT.

Will delete offending asterisk attached to 100 ohms

Cl **40** *SC* **40.7** *P* **40-93** *L* **4** # **100**

Geoff Thompson Nortel Networks

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

ORIGINAL COMMENT
You use the term "link segment". There are (unfortunately) 2 definitions for link segment in the 802.3 standard. One derives from FOIRL and
10BASE-T. The other came over from ISO/IEC 11801. You need to figure out some way to be clear about your intention in the face of this sticky
problem. (I have not studied the specifics of the problem in detail, see Doorstop pdf and message forwarded on the subject).
ORIGINAL REMEDY
Add clarifying text.
RECIRCULATION COMMENT
I think I was wrong on this comment. The ambigious term is "link". In original "802-ese" it means a link segment PLUS the MAUs
In 11801-ese it means "The transmission path between any two interfaces of generic cabling. It excludes equipment and work area cables".
That means that an 802.3 link is longer than a link segment and an 11801link is shorter than a link segment.
Gaack!

SuggestedRemedy

apparently none

Proposed Response *Response Status* **W**

Recirculation comment suggests (but does not state) that comment was withdrawn.
Author confirms withdrawal of comment

Cl **40** *SC* **40.7.5** *P* **40-89** *L* **3** # **18**

Sailesh K. Rao Level One Communica

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

of noise of noise

SuggestedRemedy

of noise

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.7.5** *P* **40-89** *L* **3,4,24-25** # **1**

Robert Campbell Lucent

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

Wordsmithing changes

SuggestedRemedy

Line 3: Remove one of the `of noise'.
Line 4: Add `to' after `reduced'.
Line 24: Change `; however' with `. However'
Line 25: Replace `neglected'with`tolerated'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.8.2** *P* **40-98** *L* **3** # **106**

Geoff Thompson Nortel Networks

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

ORIGINAL COMMENT
Says "a balanced cabling connector" of no specified performance
SUGGESTED REMEDY
Proposed new text:
The MDI Connector (jack) when mated with a balanced cabling connector (plug), Category 5 or better, shall meet the electrical requirements for
category 5 connecting hardware for use with 100 ohm category 5 cable as specified in ISO/IEC 11801:1995.
RECIRCULATION COMMENT
This is still not fixed. I believe that the intention was that the connector (plug) on the cable had to be a Category 5 or better plug. It
does not say that anywhere. Note that this was a technical required.

SuggestedRemedy

see above

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The issue of connectors being Category 5 or better is handled elsewhere.

We will insert the word "specified" before "balanced" in line 3, 40-91

Cl **40** *SC* **40.8.3.1.4** *P* **40-93** *L* **7** # **58**

David Law 3Com

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

The syntax for the A_Timer seems to be incorrect. 40.8.3.1.3 stated that timers operate as defined in 14.2.3.3 yet when a timer is done 14.2.3.3 states that x_timer_done will be asserted. This means that A_Timer=DONE should read A_timer_done. The same is true of smaple_timer. In addition Start timer_ should read start timer_ to meet 14.2.3.3.

SuggestedRemedy

In Figure 40-36 replace all instances of 'A_Timer = DONE' with 'A_timer_done', all instances of 'sample_timer = DONE' with 'sample_timer_done' and all instances of 'Start sample_timer' with 'start sample_timer'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.8.3.1.4** *P* **40-93** *L* **7** # **48**

David Law 3Com

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

The reset state reads 'POWER_ON = TRUE RESET. Please remove the spurious RESET and define the variable POWER_ON as is usually done (see 36.2.5.1.3 for an example). Also need to refer to the power mode control bit 0.11 in this case.

SuggestedRemedy

Change the text 'POWER_ON = TRUE RESET' to read 'power_on = TRUE'.

In addition add a definition of the power_on variable to 40.8.3.1.2 which reads as follows:-

power_on
Condition that is true until such time as the power supply for the device that contains the PCS has reached the operating region. The condition is also true when the device has low power mode set via Control register bit 0.11.
Values: FALSE; The device is completely powered (default).
TRUE; The device has not been completely powered.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Accept definition
text changed to read POWER_ON=TRUE + RESET

Cl **40** *SC* **40A** *P* **40-122** *L* **3** # **57**

David Law 3Com

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

Typo.

SuggestedRemedy

This appendix ...' should read 'This annex ...'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40A** *P* **40-122** *L* **7** # **56**

David Law 3Com

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

Incorrect reference, I believe the cable characteristics are in 40.7, not 40,8 as referred to here.

SuggestedRemedy

Suggest '... specified in 40.8.' should read '... specified in 40.7.'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40A** *P* **40-122** *L* **8** # **54**

David Law 3Com

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

Not sure if the sentence reads correctly, appears to be a missing a 'that'.

SuggestedRemedy

Suggest that 'There are additional steps may be taken ...' should read 'There are additional steps that may be taken ...'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40A** *P* **40-122** *L* **9** # **55**

David Law 3Com

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

Typo.

SuggestedRemedy

For the '10E-10', the -10 should be a superscript.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40A** *P* **40A-135** *L* **1** # **107**

Geoff Thompson Nortel Networks

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

ORIGINAL COMMENT
There is no callout as to whether or not this annex is normative or informative.

The opening text speaks recommendations but there is a "shall" requirement in line 51 so the answer is not obvious.
ORIGINAL REMEDY
Pick the appropriate annex type, label the annex and reword the annex as appropriate.
RECIRCULATION COMMENT
Revision control is not accurate in this area. The old text is nowhere to be found. That makes it difficult to determine if all of the fixes were put
in.

Regarding 40A in general. The revision control is all screwed up and there is disagreement between the compare version and the "clean" version. I have no idea what the actual text is. THIS WARRANTS A DISAPPROVE VOTE until things get straightened out

SuggestedRemedy

Proposed Response *Response Status* **W**

Withdrawn.

Missing revision control text was found

Cl **40** *SC* **40A.1** *P* **40-122** *L* **20** # **5**

Robert Campbell Lucent

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

Add text to subclause to introduce PSNEXT and PSELFEXT.

SuggestedRemedy

Add the following: `The equations for determining PSNEXT loss and PSELFEXT loss are defined in this clause.'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Moved into body

Cl **40** *SC* **40A.1.1.3** *P* **40-123** *L* **44** # **53**

David Law 3Com

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

Incorrect reference, I think the cable characteristics are in 40.7, not 40.8 as referred to here, see line above.

SuggestedRemedy

Suggest '... if the channel specification of 40.8 can not ...' should read '... if the channel specification of 40.7 can not ...'

Proposed Response *Response Status* **O**

Cl **40** *SC* **40A.1.1.3** *P* **40-123** *L* **48** # **51**

David Law 3Com

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

Incorrect list lettering.

SuggestedRemedy

'e)' should read 'a)', 'f)' should read 'b)'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40A.1.1.3** *P* **40-123** *L* **6** # **52**

David Law 3Com

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

Incorrect subclause number.

SuggestedRemedy

'40.1.1.3' should read '40A.1.1.3'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40A.1.1.3** *P* **40-123** *L* **8** # **50**

David Law 3Com

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

Not sure if the sentence reads correctly, appears to be a missing a 'the'.

SuggestedRemedy

Suggest that 'The primary application for Clause 40 specification ...' should read 'The primary application for the Clause 40 specification ...'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40A.1.1.3** *P* **40A-136** *L* **10** # **108**

Geoff Thompson Nortel Networks

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

ORIGINAL COMMENT
This is not the maximum configuration as specified in 568. Specifically 568 allows another connector in the link, i.e. a transition point. I would
expect that the additional cross-talk would blow us out of the water. There is no mention of that possibility and whether or not it is excluded until
you get to line 26 which is weird.

Note that while a transition point is allowed in 11801 there is a requirement that the transmission characteristics of the 90 m max
horizontal cable shall be maintained. It's not clear to me that this really works.

Also for style and consistency reasons I would recommend that you reduce the line weight on the figures to be more like those used elsewhere in the entire standard.
ORIGINAL REMEDY
1. Add a transition point to diagram 40A-1
2. Move the "patch panel" box in diagram -2 to the left so it is aligned
with the incoming side of the "cross connect" in -1
3. Change the text in line 27 et seq to read more like...
An optimized channel for a 100BASE-T link segment can be achieved on links without transition points by using an interconnect rather than a
cross-connect scheme in the wiring closet. This is done by running an equipment patch cord directly between the LAN equipment and the connector termination of the permanent link. This reduces the number of connectors and their associated FEXT in the link.
RECIRCULATION COMMENT:
I still think it needs something like my proposed text. I am willing to discuss this in the comment resolution meeting. Further, it might be a
good idea to use the same diagram style and symbology as 11801 (Ref Fig 1, Fig 5)

SuggestedRemedy

see above

Proposed Response *Response Status* **C**

ACCEPT.

Change FEXT to crosstalk

Change triangle to square, lable wall jack in both figures

Cl **40** *SC* **40A.1.1.3** *P* **40A-136** *L* **7** # **101**

Geoff Thompson Nortel Networks

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

ORIGINAL COMMENT
The grammar in this paragraph is horrible. Miss Kinneman is spinning in her grave or at least she will if this gets published with my name on it.
ORIGINAL REMEDY
Please edit.
RECIRCULATION COMMENT
Well it's better but needs more work. Please change 2nd sentence to:
"In commercial buildings this appication is generally referred to as the horizontal cabling subsystem."

SuggestedRemedy

see above

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40A.1.1.4** *P* **40-195** *L* **46** # **11**

Terry Cobb Lucent

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

Trasition Point Connector should not be included in minimum configuration.

SuggestedRemedy

remove

Proposed Response *Response Status* **C**

ACCEPT.

Revise diagram, check Geoff text

Cl **40** *SC* **40B** *P* **40-124** *L* **3** # **49**

David Law 3Com

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

Typo.

SuggestedRemedy

'This clause ...' should read 'This annex ...'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40B** *P* **40-126** *L* **7,9** # **3**

Robert Campbell Lucent

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

Change values of return loss and insertion loss to agree with the second version of cable clamp

SuggestedRemedy

Line 7: Change Insertion loss value from `0.6' to `0.2'.
Line 21: Change return loss value from `10.0' to `20.0'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
May need tuning as per changes

Cl **40** *SC* **40B** *P* **40-126** *L* **7,9** # **4**

Robert Campbell Lucent

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

Change values of return loss and insertion loss to agree with the second version of cable clamp

SuggestedRemedy

Line 7: Change Insertion loss value from `0.6' to `0.2'.
Line 21: Change return loss value from `10.0' to `20.0'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
May need tuning

Cl **40** *SC* **42.2** *P* **42-1** *L* **5-6** # **84**

Bob Noseworthy UNH InterOperability L

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

typo

SuggestedRemedy

"transmissin" should be "transmission"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Fig.40-11** *P* **40-41** *L* **8** # **16**

Sailesh K. Rao Level One Communica

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

Brackets are incorrect in (receiving = FALSE) transition.

SuggestedRemedy

Change to (repeater_mode=TRUE + tx_enable=FALSE*tx_error=FALSE)* (receiving = FALSE)

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Fig.40-11** *P* **40-41** *L* **8** # **17**

Sailesh K. Rao Level One Communica

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

Brackets are incorrect in (receiving = FALSE) transition.

SuggestedRemedy

Change to (repeater_mode=TRUE + tx_enable=FALSE*tx_error=FALSE)* (receiving = FALSE)

Proposed Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **Fig.40-3** *P* **40-5** *L* **10-11** # **15**

19 Level One Communica

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

Formal Message indications on figure makes it obscure and difficult to read. This is also inconsistent with previous clauses - e.g., Clause 24, Figure 24-4 shows, e.g., "link_status" instead of "PMA_LINK.indicate(link_status)".

Same comment applies to Figures 40-4,5,13,14

SuggestedRemedy

Please replace formal message primitive inscriptions with variable names.

Proposed Response *Response Status* **O**