Cl **00** SC P L # **952**

Thompson, Geoff Nortel

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

What is being proposed in many places throughout this draft is not a peer network. To introduce such a foreign concept into a document where the implicit and explicit notion of peer relationships is so thoroughly infused throughout the existing document is likely to cause (a) significant confusion and (b) significant errors.

SuggestedRemedy

Move non-peer proposals to a new and separate document that can thoroughly, explicitly and unambigiously embrace the concept of Ethernet Services over asymetrical infrastructure.

Proposed Response *Response Status* **U**

REJECT.

The suggested remedy is ambiguous. What are "the non-peer proposals"? What is the "new and separate document"?

The draft in its current form satisfies the PAR and 5 Criteria for the project, which call for an amendment to IEEE Std 802.3, formatted as a set of clauses. The suggested remedy would not satisfy the PAR and 5 Criteria.

While there are asymetric physical layer specifications in the draft, the services provided to the MAC Client are provided in the same fashion as the base standard. The peer relationship between MAC Clients described in the base standard is preserved.

Previous projects introduced physical layers with asymetric behavior and characteristics.

For further information regarding document restructuring, see the file:

http://www.ieee802.org/3/efm/public/sep03/frazier_1_0903.pdf

Cl **00** SC P L # **579**

Glen Kramer Teknovus

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

In many places the abbreviation OLT is incorrectly expanded as Optical Line Termination. The correct term should be Terminal.

SuggestedRemedy

Change "termination" to "terminal". The fix should be applied to C1.5 (page 13, line 12), Fig. 56-2 (page 169), C56.1.2.1 (page 169, line 52), Fig. 60-1 (page 289), and Fig. 66-4 (page 520).

Proposed Response *Response Status* **C**

ACCEPT.

Refer 197

Cl **00** SC P L # **1248**

Lee Sendelbach IBM

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

Fix all the references with *ref*. Like 60.9.4, 60.8.13.2.1, 60.8.13.1 60.8.11 60.1 I don't understand what is going on with the *refs. Also fix #CrossRef# in 64.1

SuggestedRemedy

Fix it.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

These references are intended for the use of the editors to search for cross references. All these will be romeved at time of publication as indicated in the editor's note boxes

Cl **00** SC P L # **951**

Thompson, Geoff Nortel

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

I have a problem with the use of the term "loopback" for the diagnostic return path being proposed for the OAM sublayer. The potential for confusion of this new path with the existing half-duplex DO to DI loopback path and its associated term of "loopback" is great. The term "loopback" has been an accepted label for this function at least since the drafting of FOIRL (ref: 9.9.2.1) in 1987.

SuggestedRemedy

Pick another terminology.

Proposed Response *Response Status* **U**

ACCEPT.

The term "loopback", as used within Clause 57, is used in reference to a remote loopback of frames. Occasionally, the word "loopback" is improperly used without being preceded by the word "remote". See for example Figure 57-3 at line 20 on page 138. This figure title should be changed to read "OAM remote loopback". If the term "OAM remote loopback" is used consistently, this should provide an adequate differentiation from the loopback defined in earlier clauses.

Note that this problem was actually introduced in 802.3ae,

see for example Figure 45-2.

Cl **00** *SC* *P* *L* # **829**

Tzannes, Marcos Aware

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

In T1.424 9.3.5.5 it is not clearly specified how many EOC bytes per frame are mandatory even though the maximum number of EOC byte per frame is exchaged during startup in O-MSG2 and R-MSG2.

SuggestedRemedy

State that support of 1 EOC byte per frame is mandatory. Also remove max EOC byte per frame field from the initialization messages O-MSG2, R-MSG2 and O-CONTRACT.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The existing text is sufficient. Refer to 828.

Cl **00** *SC* *P* *L* # **1181**

Parsons, Glenn Nortel Networks

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

PICS mapping to clauses is incomplete as not all PICS entries are supported by 'mandatory', 'shall', 'optional' or 'may' text within the clauses.

SuggestedRemedy

Review all PICS entries to ensure that each entry references an appropriate 'mandatory', 'shall', 'optional' or 'may' text within the referenced clause.

Review all clauses to ensure that all instances of 'mandatory', 'shall', 'optional' or 'may' within the clause have a corresponding PICS entry.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The convention used in 802.3 is that each "shall" statement correspondes to a PICS entry. Other words, such as "mandatory", "optional", and "may", do not receive corresponding PICS entries.

Every effort has been made to follow this convention, and any specific instances that the commenter can identify that do not follow this convention will be corrected.

If appropriate to document this convention then a maintenance request will be made by the commentor.

Cl **00** *SC* *P* *L* # **837**

Brand, Richard Nortel Networks

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

Fundamental structural issue.
With the addition of a minimum of at least 562 pages of D 2.0 of EFM to the existing 802.3 document, the IEEE 802.3 document will become overly large. At this point, I find it extremely time consuming to scan the existing 802.3 document for consistency with the new draft sections. With so much bulk, we run an increased risk of approving a document that may not be up to our past level of quality.
The material that is generated by future Task Forces will only exacerbate this situation.

SuggestedRemedy

Move EFM into a new separate 802.3 document that addresses an Ethernet for service providers and/or access networks.

Proposed Response *Response Status* **U**

REJECT.

The draft in its current form satisfies the PAR and 5 Criteria for the project, which call for an amendment to IEEE Std 802.3, formatted as a set of clauses. The suggested remedy would not satisfy the PAR and 5 Criteria.

The page count for this draft is not extraordinary in comparison to other recent projects in 802.3. As an example, IEEE Draft P802.3ae/D5.0 had a page count of 540 pages when it was approved by the sponsor ballot group and the IEEE-SA Standards Board.

It is expected that the IEEE publications staff will elect to publish EFM as the fifth volume of a future edition of IEEE Std 802.3, which will make it easy for the document reader to select the relevant specification.

For further information regarding document restructuring, see the file:

http://www.ieee802.org/3/efm/public/sep03/frazier_1_0903.pdf

Cl **00** *SC* *P* *L* # **1167**

Parsons, Glenn — Nortel Networks

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

Amalgamation of these numerous seemingly unrelated clauses into the 802.3 standard is unrealistic. That is, using 'Ethernet' to bind all these clauses together stretches the meaning of Ethernet beyond what was originally intended and also restricts how much can be changed to add new functionality.

SuggestedRemedy

Rework this draft to be a stand-alone standard for 'access' or 'carrier' Ethernet. This would primarily affect the ammendments to clauses of 802.3. This draft would then, for example, have its own clause 4 with 'obsolete' material removed and new functions added. The existing 802.3 standard could then be termed as 'legacy' or 'enterprise' Ethernet.

Proposed Response *Response Status* **U**

REJECT.

The draft in its current form satisfies the PAR and 5 Criteria for the project, which call for an amendment to IEEE Std 802.3, formatted as a set of clauses. The suggested remedy would not satisfy the PAR and 5 Criteria.

Numerous prior projects performed amendments to the base standard. The scope of the changes described in the draft is consistent with past practice. With regard to the specific example given in the suggested remedy, the combination of physical layers described in the draft makes full use of the behavior and interfaces described in Clause 4, therefore nothing in Clause 4 can be considered "obsolete".

For further information regarding document restructuring, see the file:

http://www.ieee802.org/3/efm/public/sep03/frazier_1_0903.pdf

Cl **00** *SC* *P* *L* # **1169**

Parsons, Glenn — Nortel Networks

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

For optional clauses (which is essentially all of these clauses), all major capabilities are dependent on whether the particular clause is supported or not. These predicates are not shown.

SuggestedRemedy

Ensure that first item of PICS indicates that the clause or function is optional. All remaining PICS entries should then be a predicate of this item.

Proposed Response *Response Status* **C**

REJECT.

The suggested remedy is inconsistent with the PICS conventions used in 802.3. Many "optional clauses" have been defined in the past, see for example Clause 22. The draft in its current form correctly follows the conventions. Essentially, a vendor only fills out the PICS tables corresponding to the options that they implement. As an example, if you don't implement P2MP, you don't have to fill out the PICS tables in Clause 64 and 65.

Cl **00** *SC* *P* *L* # **1160**

Parsons, Glenn — Nortel Networks

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

Clause 21 does not sufficiently define the PICS as used in this specification. For example, the '*ITEM' notation to indicate an item is used as a predicate is not defined. It is defined in 802.1Q-1998 Clause A.3.4.2

SuggestedRemedy

Add reference to 802.1Q in Clause 21 or change references in each of the PICS clauses

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The commenter is asked to submit a comment in the next maintenance request on Cl. 21

Cl **00** *SC* *P* *L* **1** # **596**

Grow, Robert — Intel

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

Per recent changes, we should begin including the front matter in the draft by Sponsor Ballot.

SuggestedRemedy

This is classified as a TR to assure it is implemented prior to Sponsor Ballot. The 802.3ah Editor-in-Chief will receive an appropriately edited copy of the front matter proposed for 802.3aj publication from the WG Chair at Ancona.

Proposed Response *Response Status* **U**

ACCEPT.

Will include when the source file is provided by the 802.3 WG Chair.

Cl **00** *SC* *P* *L* **1** # **552**

Booth, Brad — Intel

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

Trademark symbols not required.

SuggestedRemedy

From this page onward, the trademark symbol for the draft and for 802.3 are not required in the heading.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** SC P L **3** # **551**
Booth, Brad Intel

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

Trademark in wrong location.

SuggestedRemedy

Trademark symbol should be after 802.3, not 2002.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

These pages will be edited by the staff editor after approval.

Cl **00** SC P L **31** # **578**
Booth, Brad Intel

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

Annex 45B is not a change to previously approved clauses as it is a new annex.

SuggestedRemedy

Move Annex 45B to be in Clauses new to P802.3ah.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** SC P L **8** # **553**
Booth, Brad Intel

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

Text could be simpler. Also need to add the names of the 802.3 vice chair and the 802.3 secretary.

SuggestedRemedy

Change sentence on line 8 to read:
The following is a list of chairs and editors at the time the IEEE 802.3 Working Group balloted this standard:

Add David Law and Steve Carlson as Vice Chair and Secretary, respectively.

After list of chairs and editors, add the following before the list of 802.3 WG members:
The following is a list of voters at the time the IEEE 802.3 Working Group balloted this standard:

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

These pages will be edited by the staff editor after approval.

Cl **00** SC P **156** L **17** # **448**
James, David JGG

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

There is no consistent notation for hex and binary when used within this document.

SuggestedRemedy

1) Except when used within C-code, use subscript 16 for hex.
2) Use subscript 2 for binary.
3) Use two thin-spaces to delineate bytes within values, when necessary (or, alternatively, use a '.' to do this).
4) Whatever you do, document the convention and enforce it on all editors.

Proposed Response *Response Status* **C**

REJECT.

IEEE 802.3ah is an ammendment to 802.3. The style is consistant with the 802.3 style and has been reviewed by the IEEE Staff Editor.

Cl **00** SC P **24** L **51** # **562**
Booth, Brad Intel

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

The Unidirectional OAM Enable bit use is not only required for OAM but is also required for an OLT to operate correctly.

SuggestedRemedy

Change throughout the specification the name of Unidirectional OAM Enable to Forced Transmit. Change mr_unidirectional_oam_enable to mr_forced_tx.

Change in Table 22-7 and 22.2.4.1.12.
Change in 24.2.3.2; strike OAMPDU in 24.2.4.2 on page 31, line 44; change in 24.3.4.5 and in Figure 24-16.
Change in 36.2.5.1.3; 36.2.5.2.1.
Change in 46.3.4; 46.3.4.2; 46.3.4.3.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Refer to resolution of 1053.

Cl **00** *SC* **0** *P* *L* **0** # **388**

James, David JGG

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

Unexpected title. Why is the per-page title different from all titles on the first page.

SuggestedRemedy

Either:
1) Include Ethernet in the First Mile on the 1st page titles
2) Use a first-page title on the page header.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will check and change as appropriate

Cl **00** *SC* **0** *P* *L* **1** # **389**

James, David JGG

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

Excess capitalization.

SuggestedRemedy

IEEE-SA Trademark Usage/Compliance Statement
==>
IEEE-SA trademark usage/compliance statement

Proposed Response *Response Status* **C**

REJECT.

IEEE 802.3ah is an ammendment to 802.3. The style is consistant with the 802.3 style and has been reviewed by the IEEE Staff Editor.

Cl **00** *SC* **0** *P* *L* **10** # **385**

James, David JGG

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

Excess capitalization

SuggestedRemedy

As per 802.3-2002, change:

Carrier Sense Multiple Access
with Collision Detection (CSMA/CD) access method
and physical layer specifications
==>
Carrier sense multiple access
with collision detection (CSMA/CD) access method
and physical layer specifications

Proposed Response *Response Status* **C**

REJECT.

IEEE 802.3ah is an ammendment to 802.3. The style is consistant with the 802.3 style and has been reviewed by the IEEE Staff Editor.

Cl **00** *SC* **0** *P* *L* **25** # **392**

James, David JGG

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

Excess capitalization.

SuggestedRemedy

Arithmetic addition ==> arithmetic addition
Em ==> em
En ==> en

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **0** *P* *L* **34** # **390**

James, David JGG

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

Excess capitalization.

SuggestedRemedy

==>
Clause 56 Introduction to Ethernet for subscriber access networks
Clause 57 Operations, administration, and maintenance (OAM)
Clause 58 Physical medium eependent (PMD) sublayer and medium, type 100BASE-LX10 (Long wavelength) and 100BASE-BX10 (BiDirectional long wavelength)
Clause 59 Physical medium eependent (PMD) sublayer and medium, type 1000BASE-LX10 (Long Wavelength) and 1000BASE-BX10 (BiDirectional long wavelength)
Clause 60 Physical medium dependent (PMD) sublayer and medium, type 1000BASE-PX10 and 1000BASE-PX20 (long wavelength passive optical networks)
Clause 61 Physical coding sublayer (PCS), physical medium attachment (PMA) sublayer and baseband medium, type 10PASS-TS and type 2BASE-TL
Clause 62 Physical medium attachment (PMA) and physical medium dependent (PMD) sublayer, type 10PASS-TS
Clause 63 Physical medium attachment (PMA) and physical medium dependent (PMD), type 2BASE-TL
Clause 64 Multi-point MAC control
Clause 65 Extensions of the reconciliation sublayer (RS) for point to point emulation and extensions of the 1000BASE-X PHY for forward error correction for multipoint optical links

Proposed Response *Response Status* **C**

REJECT.

IEEE 802.3ah is an ammendment to 802.3. The style is consistant with the 802.3 style and has been reviewed by the IEEE Staff Editor.

As an example reference Cl. 36

Cl **00** *SC* **0** *P* *L* **5** # **391**

James, David JGG

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

Excess capitalization.

SuggestedRemedy

==>
Clause 66 System considerations for Ethernet for subscriber access networks
Annex 58A Frame based testing
Annex 61A EFM copper examples
Annex 62A PMD profiles for 10PASS-TS
Annex 62B Performance guidlines for 10PASS-TS PMD profiles
Annex 62C 10PASS-TS examples
Annex 63A PMD profiles for 2BASE-TL
Annex 63B Performance guidlines for 2BASE-TL PMD profiles
Annex 66A Environmental characteristics for Ethernet for subscriber access networks

Proposed Response *Response Status* **C**

REJECT.

IEEE 802.3ah is an ammendment to 802.3. The style is consistant with the 802.3 style and has been reviewed by the IEEE Staff Editor.

Cl **00** *SC* **0** *P* **1** *L* **1** # **436**

James, David JGG

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

A uniform notation for register, fields, state-machine names, functions, and constants is needed. Following is recommended:
thisResetRegister -- lower case, run-together, italics
thatField -- lower case, run-together, italics
THIS_CONSTANT -- upper case with underscore word separators
THAT_ENUMERATED_VALUE
ThisFunction() -- Start caps, run-together, italics
ThisStateMachine -- Start caps, run-together
that_parameter -- service primitive parameter, underscore separators

SuggestedRemedy

1) Accept this convention or _clearly_ define your own
(spaces in names are not allowed)
2) Describe this in some notation clause, if possible, or simply in the draft foreward (if not possible).
3) The Chief Editor should enforce this convention.

Proposed Response *Response Status* **U**

REJECT.

Cl **00** *SC* **0** *P* **1** *L* **15** # **387**

James, David JGG

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

Excess capitalization. Acronyms are not capitalized, in general, nor are the capitalized on first usage.

SuggestedRemedy

==>
This is the text proposed by the IEEE 802.3ah Ethernet in the first mile task force editors as draft D2.0 of an amendment to IEEE Std 802.3-2002. This draft combines a minimal set of extensions to the IEEE 802.3 media access control (MAC) and MAC control sublayers with a family of physical (PHY) Layers. These physical layers include optical fiber and voice grade copper cable physical medium dependent sublayers (PMDs) for point to point connections in subscriber access networks. This draft also introduces the concept of Ethernet passive optical networks (EPONs), in which a point to multipoint (P2MP) network topology is implemented with passive optical splitters, along with optical fiber PMDs that support this topology. In addition, a mechanism for network operations, administration and maintenance (OAM) is included to facilitate network operation and troubleshooting.

Proposed Response *Response Status* **C**

REJECT.

IEEE 802.3ah is an ammendment to 802.3. The style is consistant with the 802.3 style and has been reviewed by the IEEE Staff Editor.

Cl **00** *SC* **00** *P* **7** *L* **54** # **905**

Frazier, Howard SWI

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

The lowercase gamma symbol is used in Clause 63, but does not appear in the table of special symbols.

SuggestedRemedy

Add the greek letter gamma to the table of special symbols.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **21.1.2** *P* *L* # **64**

Dawe, Piers Agilent

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

21.1.2 purports to be a complete list of 100 Mb/s physical layer implementations. It needs extension to mention the new 100 Mb/s PMDs.

SuggestedRemedy

Insert extra sentence just before the last one in this paragraph:
"100BASE-LX10 and 100BASE-BX10 (Clauses 24 and 60) use one pair of single mode fibers, and a single, single mode fiber, respectively."

Proposed Response *Response Status* **C**

REJECT.

Cl **00** *SC* **45.2.1** *P* **81** *L* **23** # **1258**

Thaler, Pat — Agilent

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

The existing registers need to be dealt with. Registers 1.0, 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 are defined as general registers. Therefore, they will apply to 10PASS-TS and 10PASS-TL devices. Text must be added to the existing subclauses to clarify how they are applied to the new PMDs.

SuggestedRemedy

Provide the necessary information.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Add text as suggested:

1.0 -- speed selection bits 13 & 6: add little table in each bit field:

13 6
----
1 1 -- bits 5:2 select speed
0 x -- Unspecified
x 0 -- Unspecified

keep the same language as found in 45.3.1.1.3 - 802.3ae

-- bits 5:2, add one row in table for 10PASS-TS and 2BASE-TL (speed variable, with a pointer to the PMA/PMD select registers for each PMA/PMD) (use the 00001 codepoint)

1.1 -- this register applies to 10B/2P. Mention that local fault information is elaborated on for 10PASS-TS and 2BASE-TL with pointer to these registers

1.2:3 -- this register applies unchanged to 10P/2B

1.4 -- add two rows to the table refering to 10PASS-TS and 2BASE-TL

1.5:6 -- remove individual tables and text for registers 5 and 6 in each individual MMD. Add a global table and text right after Table 45-1, with explanitory text. Change all references in Clause 45 from the individual reg 5,6 tables and text to the global table. Also, add the rows corresponding to the tone table and Link Partner PMA/PMD MMDs to the global table.

Furthermore:

Remove bits 15,14 and 1 from Table 45-3 and the associated text. This, along with comment 327 removes this register completely.

Remove bits 15:13 from Table 45-4 and the associated text.

Cl **00** *SC* **45.2.1.14** *P* **85** *L* **5** # **1260**

Thaler, Pat — Agilent

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

This comment applies to all counters that span 2 registers. A mechanism needs to be defined to ensure that the two counters are read with consistant values. Otherwise, the upper counter could roll between the reading of the two values and the manager would get an incorrect value for the two register quantity.

Also, these are each 2 registers, not 1. A register is one 16-bit addressable entity. Change the text to match that.

SuggestedRemedy

Define the mechanism. One method is to say that the most significant counter should be read first. When the most significant counter is read, the value in the least significant counter is held in a latch and the latched value rather than the current value of the counter is returned on a read of the least signficant register.

Also, why aren't these counters clear on read and hold at all FFs? Is the assumption that they can't roll. If so, what is the time calculated for a 32 bit roll over?

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

As per the comment, change text for all "multi-word" registers to show that they are indeed separate 16-bit registers.

The mechanism for reading 32-bit counters is already defined globally for Clause 45 (replacing, as a service to humanity, the individual descriptions on a per register basis). See 45.2 amendments in 802.3ah Draft 2.0 (page 80, line 46).

Add text so that when the Most sig. 16 bits are read, the value of the lower 16 is latched, and the register contents are cleared to all zeros. This creates "clear on read" counters.

remove current edits to the WIS MMD 32-bit counters and add an additional note "NOTE - These counters do not follow the behavior described in 45.2"

Cl **00** *SC* **45.2.3.22** *P* **108** *L* **30** # **927**

Cravens, George — Mindspeed

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

Add cross reference to the NPar coding definition.

SuggestedRemedy

Add text:

See Table 61-40 for 10Pass-TS and Table 61-110 for 2Base-TL.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **45.2.3.24** *P* **110** *L* **3** # **934**

Cravens, George — Mindspeed

Comment Type **E** *Comment Status* **A** *c45*

Add/fix cross reference for PAF error registers.

SuggestedRemedy

Add/change cross reference to 61.2.2.7.2 for clause 45.2.3.24, 45.2.3.25, 45.2.3.26, 45.2.3.27, 45.2.3.28, and 45.2.3.29.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **57.4.3.3** *P* **196** *L* **35** # **204**

Squire, Matt — Hatteras Networks

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

In other sections (e.g. loopback) we mentiond that certain OAMPDUs should be ignoredif the peer is a passive node. Should probably do that here as well.

SuggestedRemedy

Add sentence
"DTEs shall ignore received Variable Request OAMPDUs from remote DTEs in Passive mode."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove line 46-47 page 199 reading "DTEs shall ignore received Loopback Control OAMPDUs from remote DTEs in Passive mode."

To check for a possible corresponding PICs entry which would be removed.

Cl **00** *SC* **58.8.1** *P* **231** *L* **5** # **117**

Dawe, Piers — Agilent

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

Grammar

SuggestedRemedy

Change "they are" to "It contains".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **61.2.2.7.3** *P* **339** *L* **45** # **945**

O'Mahony, Barry — Intel Corp.

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

The sentence "For CPE-subtype devices, PMD links shall not be enabled (such that no handshaking starts) until the PMI_Available register has been set to limit the connectivity such that each PMI maps to one, and only one MII (45.2.3.20)" describes a critical aspect of the PMI aggregation function. Until the CPE is locally configured such that a PMA/PMD is mapped to only one PCS, device operation cannot proceed. This is due to the fact that some CPE PCS registers, such as the remote_discovery_register and the PMI_Aggregate register, or remotely writable. Without the condition that a CPE PMD/PMA is mapped to only one PCS, it would be unclear as to which PCS these incoming commands would be directed to. Addtional text is needed to make this clear.

Note also that, as the CPE's PMI_Available_register(s) are not remotely writable, although they are indirectly read through the dicovery process, the CPE's PMI_Aggregate_register(s) may only be remotely configured to a subset of the configuration set in the CPE's PMI_Available_register by its local managment entity.

SuggestedRemedy

Add second sentence: "For CPE-subtype devices, until this conditions is met, the device shall not repond to or initiate any G.994.1 handshaking sessions, on any of its PMI's."

Add footnote referenced by this sentence: This condition is necessary so that remote commands from the CO-end which affect PCS registers have a defined target.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **00** *SC* **61.2.2.7.3** *P* **340** *L* **2** # **944**

O'Mahony, Barry — Intel Corp.

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

In lines 2 and 5, the PMI_Aggregate_register is called "PMI_Aggregation_register". Also in Table 61-7, line 10, in "Description" column

SuggestedRemedy

Change "PMI_Aggregation_register" to "PMI_Aggregate_register" in these 3 places.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **Annex A** *P* *L* # **143**

Dawe, Piers Agilent

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

Please add these informative references from 66A to the consolidated informative reference list, Annex A.

SuggestedRemedy

IEC 60721-2-1, "Classification of environmental conditions - Part 2-1: Environmental conditions appearing in nature - Temperature and humidity", Edition 1.1
IEC 62149-1, "Fiber optics active components and devices: Performance standards - Part 1: General and guidance", Draft standard

Renumber the [Bn] references in 66A.

Proposed Response *Response Status* **C**

REJECT.

Cl **00** *SC* **Cover** *P* *L* **9** # **595**

Grow, Robert Intel

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

Title doesn't agree with PAR. (Not complete).

SuggestedRemedy

Please update per PAR.

Proposed Response *Response Status* **C**

ACCEPT.

However, note that the title as shown on cover page of the draft is consistent with the style that was used for IEEE P802.3ae/D5.0, approved by the sponsor ballot group, RevCom, and the IEEE-SA Standards Board. The words "Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 3:" will be added.

Cl **00** *SC* **FM** *P* *L* **1** # **953**

Thompson, Geoff Nortel

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

Needs note to keep this page in published standard

SuggestedRemedy

Insert:
[Note to IEEE publication editor, this note to be removed during preparation for final publication: This page is to be placed at the end of the published standard in the PDF format so that customers can easily check that they don't have font problems in their print-out. It should also be used as a check page for print version page proofs.]

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **Front Matter** *P* **7** *L* **54** # **887**

Frazier, Howard SWI

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

The square root symbol is used in Annex 62A, but it doesn't appear in the table of special symbols in the front matter.

SuggestedRemedy

Add the square root symbol to the table of special symbols.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **General** *P* *L* # **598**

Grow, Robert Intel

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

TM are misplaced it goes after "ah", not after year.

SuggestedRemedy

Change in headers.
Instances on iii should be fixed with replacement introductory material

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **General** *P* *L* # **619**

Grow, Robert Intel

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

The "NOTE" at the beginning of changed clauses should be "EDITORIAL NOTE". (When published, there will only be one of these on a page that leads all of the changes, though it may be appropriate to keep separate because some clause editors have attempted to reconcile to different standards and project drafts.)

SuggestedRemedy

Change the first paragraph of the "NOTE" at the beginning of changed clauses and annexes. The two examples below should be edited to reflect the level of source material review as appropriate for the content (see the EDITORIAL NOTE of Clause 30).

"EDITORIAL NOTE -- This amendment is based on the current edition of IEEE Std 802.3-2002 plus changes incorporated by IEEE Std 802.3ae-2002, and IEEE Std 802.3af-2003. The editing instructions define how to merge the material contained here into this base document set to form the new comprehensive standard as created by the addition of IEEE P802.3ah. It has not been harmonized with changes introduced by IEEE Std 802.3aj-2003 or proposed by P802.3ak."

"EDITORIAL NOTE -- This amendment is based on the current edition of IEEE IEEE Std 802.3ae-2002. The editing instructions define how to merge the material contained here into this base document set to form the new comprehensive standard as created by the addition of IEEE P802.3ah. It has not been harmonized with changes introduced by IEEE Std 802.3aj-2003 or proposed by P802.3ak. (This draft does not modify any text of IEEE Std 802.3af-2003.)"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **General** *P* *L* **3** # **597**

Grow, Robert Intel

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

Typically we use IEEE Std 802.3ah-200x in the body of the document when referring to itself.

SuggestedRemedy

This one will be replaced with new front matter. The occurances to look for are usually in the boiler plate of the PICs. And a quick scan of those appears to be right. If you know of any others, please update to simplify things for the publication editor.

Do not change header and footer, those should remain P802.3ah

Proposed Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **General** *P* *L* **3** # **600**

Grow, Robert Intel

Comment Type **E** *Comment Status* **A** *P2MP*

We seem to use two terms for the same thing unnecessarily. Is there anydifference different between P2MP and EPON. A search on both terms finds most references are P2MP. P2MP is also consistent with P2P terminology.

SuggestedRemedy

Recommend deletion of EPON in most all cases (except perhaps an appropriate introdution reference to indicate that P2MP is used in this document for things typically called EPONs.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The terms P2MP and P2MP network will be used throughout the document (Clauses 56 through 66 and associated annexes and management clauses) with the exception of the introductory clauses where the terms ePON and P2MP will be tied (in 56 and 64 where P2MP is introduced).

Cl **00** *SC* **Table 58-11** *P* **232** *L* **29** # **118**

Dawe, Piers Agilent

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

It would be a service to the reader to give specific examples of frame check sequence. To do this we need to choose a destination address; also define the alternative "implementation specific" field for every third frame. I'll try to bring examples to the meeting.

SuggestedRemedy

Add two actual FCS patterns to match the rest of the example pattern.
Add alternative implementation specific field.
Add footnote: "The frame check sequence for another pattern may be calculated following 3.2.8*ref* and 24*ref*."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The commenter is asked to present his suggestions in the Optics STF

Cl **00** *SC* **various** *P* *L* # **66**
Dawe, Piers Agilent

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

OLT is sometimes expanded to "Optical Line Terminal" e.g. 1.4 on p11, sometimes "Optical Line Termination" e.g. 1.5 on p13.

SuggestedRemedy

Choose only one of these (following ITU-T), or something else.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use Terminal

Cl **01** *SC* *P* **13** *L* **12** # **192**
Yukihiro, Fujimoto NTT

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

"Optical Line Terminal (OLT)" is defined page 11. However, the abbreviation of OLT is defined "Optical Line Termination".
Using the term "OLT" as the term of the equipment with "ONU:Optical Network Unit", OLT should be "Optical Line Terminal".

SuggestedRemedy

Change "Optical Line Termination" to "Optical Line Terminal"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will discuss in the TF meeting and pick the appropriate terminology.

"Optical Line Terminal" chosen.

Cl **01** *SC* **1.3** *P* **10** *L* **12** # **1212**
Thaler, Pat Agilent

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

ANSI X3.230-1994 [B20](FC-PH), Information Technology—Fibre Channel—Physical and Signaling Interface.
duplicates (in an older form) the reference that follows it.

SuggestedRemedy

Delete the duplicate.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.3** *P* **10** *L* **8** # **129**
Dawe, Piers Agilent

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

Duplicate 127 in:
ANSI/EIA/TIA-455-127-127-1991, FOTP-127 - Spectral Characterization of Multimode Laser Diodes.

SuggestedRemedy

ANSI/EIA/TIA-455-127-1991

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.3** *P* **10** *L* **8** # **134**
Dawe, Piers Agilent

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

Another normative reference.

SuggestedRemedy

IEC 61754-4:1997, Fibre optic connector interfaces —Part 4: Type SC connector family. or successor.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.3** *P* **10** *L* **8** # **130**
Dawe, Piers Agilent

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

Another normative reference.

SuggestedRemedy

ANSI/EIA-455-95-1986, Absolute Optical Power Test for Optical Fibers and Cables. or successor.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.3** *P* **10** *L* **8** # **135**

Dawe, Piers — Agilent

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

Another normative reference.

SuggestedRemedy

ITU-T G.652

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Need full reference with the name

Cl **01** *SC* **1.4** *P* *L* **10** # **601**

Grow, Robert — Intel

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

Add is not one of the four editing terms.

SuggestedRemedy

Change to read: "Insert the following definitions alphebetically into 1.4. Renumber the definitions as required."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **10** # **212**

Tom Mathey — Independent

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

Bad cross reference.

SuggestedRemedy

Here and on line 13, reference should be to Clause 58.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **13** # **1034**

Law, David — 3Com

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

Why are only 100BASE-LX10 and 100BASE-BX10 being added to the definitions list and the other PHYs are not. The 1000BASE-X PHY range is already in the definitions [See IEEE Std 802.3-2002, subclauses 1.4.16, 1.4.17, and 1.4.18] shouldn't al least the new 1000BASE-X PHYs also be added.

SuggestedRemedy

Add additional new EFM PHYs to the definitions.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **19** # **1037**

Law, David — 3Com

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

The term link is defined as a point to point path on a cable - see IEEE Std 802.3-2000 subclause 1.4.153 'link: The transmission path between any two interfaces of generic cabling. (From ISO/IEC 11801.)'. Since EFM in many cases dies not use generic cabling and in some cases uses a point to Multi-Point topology the term link does not seem appropriate in many cases. Instead the term segment seems to be the correct one - see IEEE Std 802.3-2002 subclause 1.4.244 'segment: The medium connection, including connectors, between Medium Dependent Interfaces (MDIs) in a CSMA/CD local area network.'

SuggestedRemedy

Consider the use and definition of the word 'link' in IEEE 802.3 and consider change as necessary. In this particular case for example it seems '1.4.xxx Administration: A group of network support functions that monitor and sustain link operation.' should be changed to read '1.4.xxx Administration: A group of network support functions that monitor and sustain segment operation.'. Alternatively a change to the definition of Link might be in order although the impact of that to existing specifications needs to be considered.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will go with the 1.4.xxx change suggested. OAM will combine all terms.

Cl **01** *SC* **1.4** *P* **11** *L* **20** # **602**

Grow, Robert Intel

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

Administration, Maintenance and Operations do not justify separate definitions, and the latter two terms have other meanings within IEEE Std 802.3.

SuggestedRemedy

Merge the three definitions into one for OAM perferred or limit the definition of each to the context of OAM.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will go with the first remedy to combine all three defn. into 1.

Cl **01** *SC* **1.4** *P* **11** *L* **20** # **393**

James, David JGG

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

Excess capitalization.
Acronyms are not capitalized unless proper nouns, as per IEEE styles.

SuggestedRemedy

1.4.xxx 100BASE-LX10: IEEE 802.3 Physical layer specification for a 100 Mb/s link over two single mode optical fibers. (See IEEE 802.3 Clauses 24 and 60.).
1.4.xxx 100BASE-BX10: IEEE 802.3 Physical layer specification for a 100 Mb/s link over one single mode optical fiber. (See IEEE 802.3 Clauses 24 and 60.).
1.4.xxx administration: A group of network support functions that monitor and sustain link operation.
1.4.xxx aggregation group: A collection of PMIs that may be aggregated according to a particular implementation of the PMI aggregation function. CROSS REF See 61.2.2.
1.4.xxx bandplan: The set of parameters that defines the start and end of each 10PASS-TS frequency band.
1.4.xxx coupled power ratio (CPR): The ratio (in dB) of the total power coupled into a multimode fiber to the optical power that can be coupled into a single-mode fiber.
1.4.xxx downstream: Transmission from a network-side interface towards one (for P2P links) or more (for P2MP links) user-side interfaces.
1.4.xxx Ethernet passive optical network (EPON): A passive optical network using Ethernet, as extended by IEEE standard 802.3ah.
1.4.xxx grant: Permission to transmit at a specific time, for a specific duration. Grants are issued by the OLT (master) to ONUs (slaves) by means of GATE messages.
1.4.xxx logical link identifier (LLID): A numeric identifier assigned to a link established through the point-to-point emulation sublayer. Each link is assigned a unique LLID. The link is bound to a port at each end station, where a MAC would observe a private link.
1.4.xxx maintenance: An activity concerned with, but not limited to, failure detection, notification, location, and repairs, that is intended to eliminate faults and keep a link in an operational state.
1.4.xxx OAM discovery: Process that detects the presence and configuration of the OAM sublayer in the remote DTE.
1.4.xxx Operations: Support activities required to provide the services of a subscriber access network to users/subscribers.
1.4.xxx pptical line terminal (OLT): The network interface for an optical access network. The OLT is the master entity in an EPON with regard to the MPCP protocol.

Proposed Response *Response Status* **C**

REJECT.

IEEE 802.3ah is an ammendment to 802.3. The style is consistant with the 802.3 style and has been reviewed by the IEEE Staff Editor.

Cl **01** *SC* **1.4** *P* **11** *L* **22** # **394**

James, David JGG

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

Excess capitalization.
Acronyms are not capitalized unless proper nouns, as per IEEE styles.

SuggestedRemedy

PMI ==> physical media interface (PMI)
P2MP ==> point-to-multipoint (P2MP)
DTE ==> bunch of text (DTE)
or, whatever else is the correct meaning.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

We will be consistant with 802.3 style.

Cl **01** *SC* **1.4** *P* **11** *L* **25** # **954**

Thompson, Geoff Nortel

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

"start" and "end" are ambiguious terms

SuggestedRemedy

Change to:
"1.4.xxx Bandplan: The set of parameters that defines the lowest and highest frequiencies of each 10PASS-TS frequency band."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use the terms "upper" and "lower" for consistancy with usage in the registers.

Cl **01** *SC* **1.4** *P* **11** *L* **25** # **169**

Squire, Matt Hatteras Networks

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

"Bandplan" applies to 10PASS-TS and 2BASE-TL.

SuggestedRemedy

Maybe something like

"The set of parameters that control the frequencies and power at which 10PASS-TS and 2BASE-TL may operate."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **26** # **955**

Thompson, Geoff Nortel

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

No definition in this clause for "capability".
(Service to humanity)

SuggestedRemedy

1.4.xxx Capability: In 802.3 a set of management packages that spans multiple management objects (see 30.2.5).

Proposed Response *Response Status* **C**

REJECT.

Within the context of Clause 30 the word capability is fully defined and used. There are other usages of capability within .3 that may conflict with a global definintion.

Cl **01** *SC* **1.4** *P* **11** *L* **29** # **214**

Tom Mathey Independent

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

Bad cross reference.

SuggestedRemedy

Here, and p12 line 26, replace all usage of PON with EPON. Place EPON in 1.5 Abbreviation, scrub document and replace elsewhere.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The use of the term EPON is inconsistant. The document should use P2MP.

Will consider here and in the entire document

Cl **01** *SC* **1.4** *P* **11** *L* **29** # **213**

Tom Mathey Independent

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

Bad cross reference.

SuggestedRemedy

Once this amendment is rolled into the base standard, the reference to 802.3ah is lost. Change reference to a Clause.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Appropriate change will be made so that it is easy for the IEEE staff editors to merge into 802.3 document when that happens

Cl **01** *SC* **1.4** *P* **11** *L* **31** # **170**

Squire, Matt — Hatteras Networks

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

The "downstream" term is defined using "network-side" and "user-side" which aren't defined.

Ditto "upstream" on P12, L40.

SuggestedRemedy

Maybe something like:
"In an access network, where there is a clear indication in each deployment as to which end of a link closer to an subscriber, transmission toward the subscriber side of the link."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **33** # **555**

Booth, Brad — Intel

Comment Type **TR** *Comment Status* **A** *P2MP*

All PON's in 802.3 are EPON's. EPON is primarily a marketing term used in the industry and should not be defined here.

SuggestedRemedy

Change definition to read:
1.4.xxx Passive Optical Network (PON): A passive fiber optic network that divides optical power received at any input port among all output ports. The division of power is approximately uniform.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Please refer to the comment resolution on #600.

Cl **01** *SC* **1.4** *P* **11** *L* **33** # **603**

Grow, Robert — Intel

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

The phrase "using Ethernet" is too vague. 802.3ah will cease to exist in 2004 other than as a historical reference and doesn't belong in a definition.

SuggestedRemedy

A passive optical network providing transport of Ethernet frames using P2MP specifications. (see Clauses xx)".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **33** # **1035**

Law, David — 3Com

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

Shouldn't reference IEEE 802.3ah as this will cease to exist when it is consolidated in to the base document at some point.

SuggestedRemedy

Suggest the text '... by IEEE Standard 802.3ah.' should be changed to read '... IEEE Std 802.3.'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **34** # **167**

Shimon Muller — Sun Microsystems, Inc

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

The definition of EPON includes a reference to "IEEE standard 802.3ah". By the time this standard is published and becomes incorporated into the main 802.3 document, 802.3ah will no longer exist.

SuggestedRemedy

Remove the second part of the sentence.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **37** # **604**

Grow, Robert — Intel

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

Grant needs to be clearly something in the context of P2MP.

SuggestedRemedy

Within P2MP protocols, a permission ...

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **40** # **556**

Booth, Brad — Intel

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

D should be lower case.

SuggestedRemedy

Change IDentifier to Identifier.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **40** # **1036**

Law, David 3Com

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

A link is defined as a point to point path on a cable - see IEEE Std 802.3-2000 subclause 1.4.153 'link: The transmission path between any two interfaces of generic cabling. (From ISO/IEC 11801.)'. In addition - strange but true - a port only exists on a repeater - see IEEE Std 802.3-2000 subclause 1.4.215 'port: A segment or Inter-Repeater Link (IRL) interface of a repeater unit.' The definition of LLID therefore needs some significant rework.

SuggestedRemedy

Correct the definiotn of LLID so that it does not include incorrectly used the terms port and link.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the definition to read:

1.4.xxx LLID): A numeric identifier assigned to a P2MP association between an OLT and ONU established through the Point-to-Point Emulation sublayer. Each P2MP association is assigned a unique LLID. The P2MP association is bound to an ONU DTE, where a MAC would observe a private association.

Cl **01** *SC* **1.4** *P* **11** *L* **40** # **171**

Squire, Matt Hatteras Networks

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

"IDentifer"

SuggestedRemedy

Shouldn't that just be "Identifier", or are you trying to indicate an abbreviation with the capitalization?

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **5** # **554**

Booth, Brad Intel

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

Missing heading for definition.

SuggestedRemedy

Add heading.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **53** # **95**

Dawe, Piers Agilent

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

According to Figure 2/G.983.1, "Optical Line Termination" and "Optical Network Unit" are entities with at least two interfaces, not interfaces themselves.

SuggestedRemedy

Reconcile.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **11** *L* **53** # **557**

Booth, Brad Intel

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

Use of undefined acronyms.

SuggestedRemedy

Change EPON to passive optical network. Change MPCP protocol to multi-point control protocol.

Same changes apply to ONU definition on page 12, line 1.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The use of the term ePON is inconsistant and should be removed.

Cl **01** *SC* **1.4** *P* **11** *L* **53** # **1038**

Law, David 3Com

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

The definition of ONU and OLT describe them as 'interfaces' however figure 56-2 clearly shows these as a entity consisting of a number of sublayers - although it is unclear from Figure 56-2 how far up the layers these extend. Isn't an ONU and a OLT a particular instance of a DTE rather than just a 'interface'.

SuggestedRemedy

Suggest the text 'The network interface for an optical access network.' should be change to read 'The network-side DTE for an optical access interface' and the text 'The user-side interface to an optical access network.' should be changed to read 'The user-side DTE to an optical access network.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Suggest the text 'The network interface for an optical access network.' should be change to read 'The network-side DTE for an optical access network' and the text 'The user-side interface to an optical access network.' should be changed to read 'The user-side DTE to an optical access network.

Cl **01** *SC* **1.4** *P* **12** *L* **1** # **395**

James, David JGG

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

Excess capitalization.
Acronyms are not capitalized unless proper nouns, as per IEEE styles.

SuggestedRemedy

1.4.xxx optical network unit (ONU): A user-side interface to an optical access network. An ONU is a slave entity in an EPON with regard to the MPCP protocol.
1.4.xxx P2MP discovery: Process by which the master (e.g., OLT) finds newly attached active ONU in the PON, and by which the master and slave exchange registration information. The OLT sends a GATE flagged for discovery. The ONU replies with a REGISTER_REQ. The OLT sends a REGISTER and GATE message, and the ONU replies with a REGISTER_ACK. If this sequence is successful, the ONU is registered.
1.4.xxx P2MP discovery window: A time period in a given wavelength band reserved by the OLT exclusively for the discovery process.
1.4.xxx P2MP timestamp: A timestamp is used to synchronize slaves (e.g., ONUs) with the master (OLT) and for the ranging process. Timestamp granularity is 16 bit times, with 32 bit resolution. All MPCP messages passed between OLTs and ONUs contain timestamps See 802.3 Clause 64).
1.4.xxx Point-to-point emulation (P2PE): Emulation of private communication between two end-stations (e.g., ONU) in an EPON. Emulation creates the equivalent of a star topology with the OLT in the nexus, and is required for compliance with IEEE 802.1d bridging.
1.4.xxx Ranging: A procedure by which the propagation delay between a master (e.g., OLT) and slave (e.g., ONU) is measured. The round trip delay computation is performed by the OLT, using the timestamp in MPCP messages from the ONU.
1.4.xxx registration: The process by which an ONU and OLT exchange the necessary information to enable the ONU to participate in network exchanges in an EPON.
1.4.xxx round trip time (RTT): The total transit delay from the master to the slave and back. This is composed of propagation delays through the fiber and electronic hardware.
1.4.xxx single copy broadcast (SCB): Broadcast distribution of a single transmission, without the need to electronically replicate the transmission. SCB is an intrinsic, or “native,” capability of a PON, where downstream transmissions are passively split and distributed to all ONUs within the PON.
1.4.xxx T_Optical_rec_recovery: Is the sum of receiver recovery time and level recovery time. It is defined as the time interval between receiving a valid optical level and a valid electrical output at TP4.
1.4.xxx T_Reflectance: Ratio of reflected to incident power (better check this with other standards, books etc.). This is the inverse of return loss.
1.4.xxx upstream: Transmission from a user-side interface towards a network-side interface.

Proposed Response *Response Status* **C**

REJECT.

IEEE 802.3ah is an ammendment to 802.3. The style is consistant with the 802.3 style and has been reviewed by the IEEE Staff Editor.

Cl **01** *SC* **1.4** *P* **12** *L* **12** # **558**

Booth, Brad Intel

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

Use of undefined acronym and missing bracket.

SuggestedRemedy

Change MPCP to multi-point control protocol. Insert (prior to See in the last sentence.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **12** *L* **14** # **1039**

Law, David 3Com

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

Typo.

SuggestedRemedy

'... timestamps See 802.3 Clause 64).' should read '... timestamps. (See 802.3 Clause 64).'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **12** *L* **18** # **1040**

Law, David 3Com

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

Typo.

SuggestedRemedy

'... IEEE 802.1d bridging.' should read '... IEEE 802.1D bridging.'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **12** *L* **24** # **174**

Squire, Matt Hatteras Networks

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

"Registration" is a well-used term that in many contexts has nothing to do with P2MP.

SuggestedRemedy

Change to MPCP registration or something EPON specific.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use MPCP Registration for the name. Also, go through the text and make sure that the term "MPCP Registration" is used and not "Registration"

Cl **01** *SC* **1.4** *P* **12** *L* **27** # **606**

Grow, Robert Intel

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

This definition is inconsistent with round trip time as used in IEEE Std 802.3. It is also a variable which we generally do not define in clause 1.

SuggestedRemedy

Remove the definition of Round Trip Time and the acronym RTT.

Proposed Response *Response Status* **C**

ACCEPT.

RTT definition and acronym will be removed from Clause 1. The terms will be introduced in Clause 64.

Cl **01** *SC* **1.4** *P* **12** *L* **30** # **607**

Grow, Robert Intel

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

SBC is not a broadly used term. It doesn't belong in clause 1. I'll admit the definition even made me snicker. Most shared media accomplish a broadcase with a single transmission, it isn't anything special for PONs.

SuggestedRemedy

Remove the definition.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **12** *L* **31** # **173**

Squire, Matt Hatteras Networks

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

We use "PON" but have never defined it, though we've defined EPON.

SuggestedRemedy

Use EPON instead of PON.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Refer to comment resolution for #600.

Cl **01** *SC* **1.4** *P* **12** *L* **34** # **608**

Grow, Robert Intel

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

To be included in IEEE Std 802.3, this definition needs better context definition. For example, TP4 occurs in copper clauses, not only 64.

SuggestedRemedy

Refine the scope of the definition.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove definition from clause 1 and introduce ot wherever used by P2MP (60, 64 etc.)

Cl **01** *SC* **1.4** *P* **12** *L* **37** # **65**

Dawe, Piers Agilent

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

Cleaning up:
1.4.xxx T_Reflectance: Ratio of reflected to incident power (better check this with other standards, books etc.). This is the inverse of return loss.

SuggestedRemedy

Remove T_ . Remove the section in parentheses.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **12** *L* **37** # **609**

Grow, Robert Intel

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

We obviously missed something in technical completeness.

SuggestedRemedy

Someone had "better check this with other standards, books etc."

Proposed Response *Response Status* **C**

ACCEPT.

Will remove section within paranthesis.

Refer to comment 65

Cl **01** *SC* **1.4** *P* **12** *L* **37** # **396**

James, David JGG

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

Job list should be excluded from the draft.

SuggestedRemedy

Delete:
(better check this with other standards, books etc.)

Proposed Response *Response Status* **C**

ACCEPT.

Refer to Comment 65

Cl **01** *SC* **1.4** *P* **12** *L* **4** # **172**

Squire, Matt Hatteras Networks

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

We introduce the concepts of "master" and "slave" throughout this section, and it doesn't really seem to be needed or good. We've defined ONU and OLT, and should use them instead of master/slave. Note the P2MP clauses don't really use master/slave, so the definitions shouldn't either.

SuggestedRemedy

Replace master with OLT, slave with ONU.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **12** *L* **4** # **605**

Grow, Robert Intel

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

This one finally got to me. It is the worst of the definitions for defining the protocol within the definition.

SuggestedRemedy

Simplify.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The comment is refered to the P2MP STF for further work.

Cl **01** *SC* **1.4** *P* **12** *L* **40** # **610**

Grow, Robert Intel

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

Upstream has a different usage in Clause 45

SuggestedRemedy

If this is really appropriate to define in clause 1, restrict its scope.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Upstream was used in Cl45 of 802.3ae within the context of MMD heirarchy (page 163 of 802.3ae).

The terms as defined by 802.3ah are generally accepted by the industry.

Change upstream to superior and downstream to subordinate as used by Figure 45-2 of 802.3ae.

Cl **01** *SC* **1.4.xxx** *P* **11** *L* **14** # **623**

Daines, Kevin World Wide Packets

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

100BASE-?X10 PHYs clause references are wrong.

SuggestedRemedy

Change "60" to "58" on lines 14 and 18.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.xxx** *P* **11** *L* **34** # **624**

Daines, Kevin World Wide Packets

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

This definition is fairly weak as it only reorders the spelled out acronym/abbreviation. Also, the reference to "IEEE standard 802.3ah" is unconventional. Definitions normally point to clauses not loose reference to projects.

SuggestedRemedy

Either a) move definition to 1.5 and make it an abbreviation or b) fix the definition. Commentor has a slight preference for remedy (a).

Proposed Response *Response Status* **C**

ACCEPT.

Will go with the commntors suggestion (a) to move. Use P2MP instead of ePON to be consistant with rest of comments and document

Cl **01** *SC* **1.4.xxx** *P* **12** *L* **14** # **625**

Daines, Kevin World Wide Packets

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

Reference to "802.3 Clause 64" is missing "IEEE".

SuggestedRemedy

Insert "IEEE" before "802.3" on line 14.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.xxx** *P* **12** *L* **18** # **626**

Daines, Kevin World Wide Packets

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

Reference to "802.1d bridging" should be "802.1D bridging" should it not?

SuggestedRemedy

Change "d" to "D" on line 18.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.xxx** *P* **12** *L* **37** # **627**

Daines, Kevin World Wide Packets

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

The text "(better check this with other standards, books etc.)" should either be removed or re-written as an editor's note.

SuggestedRemedy

Commenter prefers removing referenced text, which begins on line 37.

Proposed Response *Response Status* **C**

ACCEPT.

Referto comment 65

Cl **01** *SC* **1.5** *P* **12** *L* **38** # **215**

Tom Mathey Independent

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

Missing abbreviations.

SuggestedRemedy

Add EPON, MPCP, SCB, IDFT/DFT per p408, CL per page 410, OC-TC per p425, MS per p410, CLR per page 410, CE per p411, PTM-TC per p321, TPS-TC per p321.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Some abbreviation like EPON and TC-PAM may be removed from the document. The missing abbreviationsnot inconsistant with the style adopted will be included.

MPCP is MPCP Resgistration per previous comment.

Cl **01** *SC* **1.5** *P* **12** *L* **43** # **1048**

Law, David 3Com

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

Suggest that FEC be added to the list of abbreviations.

SuggestedRemedy

Add 'FEC Forward Error Correction' to list of abbreviations.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.5** *P* **12** *L* **50** # **611**

Grow, Robert Intel

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

What is the context for "(start-up)".

SuggestedRemedy

Delete.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.5** *P* **12** *L* **51** # **397**

James, David JGG

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

Excess capitalization.
When spelling out acronyms, IEEE recommends no capitalization other than what is necessary due to proper noun usage.

SuggestedRemedy

==>
CO central office
CPE customer premises equipment
DMT discrete multi-tone
DS downstream
EFM Ethernet in the first mile
EFM Cu Ethernet in the first mile (generically pertaining to 10PASS-TS and 2BASE-TL port types)
FSW frame synchronization word
LLID logical link identifier
LT line termination
NT network termination
OAM operations, administration, and maintenance
OAMPDU operations, administration, and maintenance protocol data unit
ODN optical distribution network
OH overhead
OLT optical line termination
ONU optical network unit
ORLT optical return loss tolerance
P2P point to point
P2PE point to point emulation
P2MP point to multi-Point
PAF PMI aggregation function
PAFH PMI aggregation function header
PAM pulse amplitude modulation
PLL phase lock loop
PMI physical medium independent
PMS-TC physical media specific - transmission convergence
PON passive optical network
PSD power spectral density
RTT round trip time
SHDSL single-pair high-speed digital subscriber line
STU-O SHDSL tranceiver unit - central office
STU-R SHDSL tranceiver unit - remote
TC-PAM Trellis coded PAM
TCM Trellis coded modulation
US upstream
VTU-O VDSL transceiver unit - CO side (10PASS-TS-O)
VTU-R VDSL transceiver unit - CPE side (10PASS-TS-R)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **01** *SC* **1.5** *P* **12** *L* **51** # **398**

James, David JGG

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

Don't use another abbreviation within a definition

SuggestedRemedy

LLID logical link ID
==>
LLID logical link identifier

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.5** *P* **12** *L* **54** # **447**

James, David JGG

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

The use abbreviations for DS and US is unnecessary and leads to lack of clarity. Since they are only used 7 places each, abbreviation is unnecessary.

SuggestedRemedy

1) Eliminate DS and US from 1.5
2) Elsewhere, change:
DS ==> downstream
US ==> upstream

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.5** *P* **13** *L* **19** # **399**

James, David JGG

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

Don't use abbreviation within definition of another abbreviation.

SuggestedRemedy

TC-PAM Trellis coded PAM
==>
TC-PAM Trellis coded pulse amplitude modulation

VTU-O VDSL transceiver unit - CO side (10PASS-TS-O)
^^^^
VTU-R VDSL transceiver unit - CPE side (10PASS-TS-R)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove VTU-O, VTU-R and TC-PAM from 1.5.

Cl **01** *SC* **1.5** *P* **13** *L* **21** # **559**

Booth, Brad Intel

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

PLL abbreviation defined in 802.3ae.

SuggestedRemedy

Delete.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.5** *P* **13** *L* **21** # **613**

Grow, Robert Intel

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

PLL is already in 1.5 (802.3ae).

SuggestedRemedy

Delete.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.5** *P* **13** *L* **22** # **1041**

Law, David 3Com

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

PMI is alread defined in the existing subclause 1.5 [See IEEE Std 802.3-2002].

SuggestedRemedy

Remove duplicate abbreviation.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.5** *P* **13** *L* **22** # **612**

Grow, Robert Intel

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

PMI is already in 1.5

SuggestedRemedy

Delete

Proposed Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.5** *P* **13** *L* **33** # **400**

James, David JGG

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

Define VDSL.

SuggestedRemedy

1) Add term for VDSL
2) Spell out that term when used below:

VTU-O VDSL transceiver unit - CO side (10PASS-TS-O)
^^^^
VTU-R VDSL transceiver unit - CPE side (10PASS-TS-R)
^^^^

Proposed Response *Response Status* **U**

REJECT.

The abbreviations have been removed from the draft.

Cl **01** *SC* **1.5** *P* **13** *L* **35** # **628**

Daines, Kevin World Wide Packets

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

A few obvious abbreviations seem to be missing, including: MPCP, SCB, CPR and EPON (mentioned in an earlier comment).

SuggestedRemedy

Include missing abbreviations:
MPCP Multi-Point Control Protocol
SCB Single Copy Broadcast
CPR Coupled Power Ratio
EPON Ethernet Passive Optical Network

others???

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Missing abbreviations will be added.Someterminology like ePON may be deleted from document based on other comments.

Cl **01** *SC* **1.5** *P* **13** *L* **6** # **67**

Dawe, Piers Agilent

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

The terms "Line Termination" and "Network Termination" are not explained in 802.3ah or in 802.3.

SuggestedRemedy

Either don't use these terms, or add definitions for these terms to 1.4.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace LT with the -O STA. Remove the acronym LT and NT from Clause 1.

Only use LT and NT when referencing text from other standards. (such as G.993.1)

Also check anywhere else for the use of LT and NT and cleanup

Cl **01** *SC* **30.3.1.1.31** *P* **45** *L* **54** # **83**

Dawe, Piers Agilent

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

This would be an "ER" comment if there were such a category.

30.3.1.1.31 introduces this new term:
dual simplex: Capable of operating in half duplex mode with simultaneous receive and transmit
30B.2 uses "simu half duplex" for the same thing.
Neither term is actually used anywhere.
The definition "Capable of operating in half duplex mode with simultaneous receive and transmit" is a contradiction in terms.

1.1.1 Basic concepts says:
This standard provides for two distinct modes of operation: half duplex and full duplex. A given IEEE 802.3 instantiation operates in either half or full duplex mode at any one time.

30B.2 talks about "Simplex fiber" and we resolved on the last day in Seoul not to do this but instead to talk about one, two fibers (comment # 264).

59.11.5 mentions "duplex fibers" and "duplex optical plug".

Other clauses e.g. 4, 22 have a straight choice between "full duplex" and "half duplex".

SuggestedRemedy

You may need a new "plex" to describe a PON. If so, choose only one name for it, rewrite 1.1.1, add the new name to 1.4 Definitions, modify the Pascal in 4.2.8 Frame transmission to cover this new case, use the name in 56, 64 and maybe 65.

If not, get rid of "dual simplex" and "simu half duplex".

Replace all "Simplex fiber" "duplex fibers" with e.g. "one fiber path", two fiber paths".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Agree with 2nd part, use the terms 1 fiber and 2 fibers, as agreed to in Seoul, and consider whether directionality is necessary.

First part is pointed to comment #972.

Cl **01** *SC* **4** *P* **12** *L* **37** # **680**

Joergensen, Thomas Vitesse Semiconducto

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

Reflectance definition: Comment in the brackets should be removed

SuggestedRemedy

Remove comment on bracket

Proposed Response *Response Status* **C**

ACCEPT.

Cl **04** *SC* *P* **16** *L* **1** # **409**

James, David JGG

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

Excessive capitalization

SuggestedRemedy

4. Media Access Control
==>
4. Media access control

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* *P* **19** *L* **4** # **402**

James, David JGG

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

Inconsistent line widths. Should be:
1) Thin around header & below borders.
2) Very thin elsewhere (including within the header).
3) Bottom line on cross-page table should be very thin

SuggestedRemedy

Fix the following tables:
Page 19, line 4
Table 45-18
Table 45-100
Table 45-102
Page 114, line 51
Page 116, line 51
Page 117, line 53
Page 118, line 52
Page 119, line 53
Page 120, line 54
Table 31A-3
Table 31A-6
Page 221, line 50
Table 58-4
Table 58-5
Table 58-6
Table 58-7
Table 58-8
Page 254, line 53
Table 59-5
Table 59-7
Table 59-16
Table 60-5
Table 60-9
Table 60-10
Table 61-15 through 61-119
Page 393, line 4 through Page 398, line 28
Page 418 line 47 through Page 422, line 45
Table 63-4
Page 433, line 5 through Page 434 line 20
Table 64-1
Table 64-2
Table 64-3
Table 64-4
Table 64-5
Table 64-6
Table 64A-4
Table 66A-3

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* *P* **19** *L* **4** # **410**

James, David JGG

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

Table should have a table number, so that ambiguous definition of "following parameter values" can be avoided with a specific cross-reference.

SuggestedRemedy

Provide a table title.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **--** *P* *L* **15** # **386**

James, David JGG

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

Excess capitalization. IEEE style manual suggests only first word be capitalized.

SuggestedRemedy

Media Access Control Parameters, Physical Layers and Management Parameters for subscriber access networks
==>
Media access control parameters, physical layers and management parameters for subscriber access networks

Proposed Response *Response Status* **C**

REJECT.

The capitalization matches the approved PAR.

Cl **04** *SC* **4.2.3.2.2** *P* **16** *L* **10** # **629**

Daines, Kevin World Wide Packets

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

The 3rd and 4th sentences (lines 10-13) describe 10 Gb/s IFS stretch, but do not adequately describe FEC IFS stretch. Specifically, this text does not take into account the ifsStretchConstant of 112 bits. A sentence could be added to make this more clear. While the text is informative, it does explain the normative Pascal.

SuggestedRemedy

Add 5th sentence, beginning on line 13, which reads:
"If the physical layer is using FEC, a fixed number of additional interframe spacing bits is added to the calculated value proportional to the length of the previously transmitted frame."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.3.2.2** *P* **16** *L* **10** # **401**

James, David JGG

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

Excessive capitalization

SuggestedRemedy

Forward Error Correction ==> forward error correction

Here, and throughout this draft.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.3.2.2** *P* **16** *L* **9** # **956**

Thompson, Geoff Nortel

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

The further proposed expansion of this text makes it increasingly difficult to predict the behavior of a MAC in terms of its ability to sink data.

SuggestedRemedy

Move 4.2.3.2.2 out of the "legacy" Ethernet standard and into a new parallel 802.3 family standard for "Carrier Grade" applications.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.3.2.2** *P* **16** *L* **9** # **836**

Brand, Richard Nortel Networks

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

Forward Error Control is introduced here with no background documentation and then does not appear until its use in cl 40.

SuggestedRemedy

Add to definitions cl 1.4.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.3.2.2** *P* **16** *L* **9** # **1211**

Thaler, Pat Agilent

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

This statement is not true. IPG is only enlarged for some of the physical layers that use FEC. 1000BASE-T says has a form of FEC and it does not require IPG enlargement because the FEC is done on the whole signal stream data rate is increased accordingly. It also appears that 10PASS-TS has a data stream form of FEC which doesn't require IPG enlargement.

This comment also applies to the text change in Deference Procedure 4.2.8 page 17 lines 1-3.

SuggestedRemedy

One needs to list the specific physical layers with FEC that need this or one needs to create a term covering only the type of FEC that requires IPG expansion.

One could define "frame-based Forward Error Correction (FEC)" as FEC applied to the frames rather than the data stream. Then replace the text in both places with "that uses frame-based Forward Error Correction (FEC) (e.g. 1000BASE-X with FEC extension see Clause 65)."

It is good to give an example of which clause uses this feature rather than making the reader dig for it.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.7.2** *P* **16** *L* **15** # **957**

Thompson, Geoff Nortel

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

Proposed Carrier Grade parameters mixed into "Legacy" text

SuggestedRemedy

Move appropriate proposed parameters out of the "legacy" Ethernet standard and into a new parallel 802.3 family standard for "Carrier Grade" applications. A small number of existing parameters may also need to be put into "Carrier Grade".

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.7.2** *P* **16** *L* **20** # **1216**

Thaler, Pat Agilent

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

"Implementation dependent" is used here in a different sense than in the rest of the standards. In the rest of the standard (and in other standards) the term generally means that the implementor is free to chose the value, behavior, etc. I realize that .3ah didn't create this problem, but it is expanding its use with for new parameters that other may be tempted to tweak so it would be a good time to fix it.

In Clause 4, most occurances of "implementation dependent" really mean "Phy dependent" or "speed dependent" as clause 4 restricts each of these constants to a fixed value based on the speed or phy type that was chosen. (There are occurances in 4.2.4.2.1 and other places in Clause 4 such as after procedure WatchForCollision with the traditional meaning.)

To further confuse the reader, 4.2.7 (right before the constants are defined) says 4.4 contains values for "recommended" implementations while 4.4 states that using its values is "required".

SuggestedRemedy

Change both the new and existing instances of "implementation dependent" in Clause 4 to "PHY dependent" or other appropriate term. Also change other occurances of "implementation" in Clause 4 related to 4.4 to match the new term (in 4.1.2, 4.1.2.2, 4.2.3.2.3, 4.2.7 and 4.4).

In 4.2.7, change "recommended" to "allowed" or "compliant".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.7.2** *P* **16** *L* **30** # **1219**

Thaler, Pat Agilent

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

"Determines the desire"? What does that mean. Neither NICS nor pseudo-Pascal have the capability to desire. They either do a thing or they don't.

Applies to ifsStretchCarry and ifsStretchIncludeIFS.

SuggestedRemedy

"Determines whether" Also, you need to be more specific about the nature of this constant. For example see extend in the existing 4.2.7.1. Is this a Boolean? If so, what does true mean? Is this an integer? If so, what values can it take and what do they mean. Note that one appears to be used as a Boolean and the other appears to be used as an integer. Both are shown as integers in 4.4.

The reader is not suppose to have to guess your intent by looking at how the variables are used in the code.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.7.2** *P* **16** *L* **38** # **1224**

Thaler, Pat Agilent

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

The equation here is not correct maximum value of ifsStretchRatio. Your current code adds ifsStretchConstant in deference and not to the ifsStretchSize variable (though it would have been better to do so). Also, this ignores the increase when ifsStretchCarry is true. Therefore, it is possible that for some values of the constants it needs to be increased by the additional stretch.

SuggestedRemedy

Make it correct.

One way is my rewrite.

If you don't do that, please note that ifsStretchRatio - 1 was the bits from the carry. For understandability, you shouldn't insert other terms between these two terms.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.8** *P* **16** *L* **54** # **1185**

Thatcher, Jonathan N/A

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

New method for calculating deference need not be limited to 10GBASE-W and EPON. Future work should not have to return here to modify text. No existing port type is harmed by implementing this scheme.

SuggestedRemedy

Remove text: "at operating speeds above 1000... Forward Error Correction."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.8** *P* **17** *L* **1** # **175**

Squire, Matt Hatteras Networks

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

I have a very difficult time parsing this sentence. Interframe spacing can be used to lower the rate
a) in full duplex mode
1) when its necessary for WAN rate adaptation
b) in full duplex mode
1) when using FEC

SuggestedRemedy

Seems like this sentence could be easier...
Inteframe spacing may be used to lower the average data rate of a MAC when that MAC is operating at at 1000 Mbps in full duplex mode, and either when it is necessary to adapt it to the data rate of a WAN-based physical layer, or when it it necessary to adapt it to the data rate of a physical layer using FEC.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.8** *P* **17** *L* **1** # **958**

Thompson, Geoff Nortel

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

Text not compatible with "Legacy Ethernet" and will make it increasingly difficult to understand the simple nature of the legacy MAC for those who wish to implement legacy applications.

SuggestedRemedy

Move to parallel "Carrier Grade" standard

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.8** *P* **17** *L* **33** # **1218**

Thaler, Pat Agilent

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

The text says that the additional wait is an integer number of octets. I agree that it should be - we have never required waits of fractions of octets before. However, ifsStretchConstant + (ifsStretchSize * ifsStretchMultiplier) is not necessarily a multiple of 8. It is only a multiple of 8 if one constrains both ifsStretchConstant and ifsStretchMultiplier to be multiples of 8.

The definition of those constants does not currently require them to be multiples of 8 even though the values in 4.2.2 are currently multiples of 8.

SuggestedRemedy

Either add text requiring that these constants be multiples of 8 or alter the calculation so that it is rounded up to a multiple of 8.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.8** *P* **17** *L* **46** # **1217**

Thaler, Pat Agilent

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

The language in this paragraph seems rather sloppy. I don't know what "is reflected by the variable ifsStretchSize and the constant ifsStretchMultiplier" means. The number of bits isn't in either of those. If one means that it is determined by a calculation based on those variables, then one also needs to include ifsStretchMultiplier. "is determined by a calculation based on ..." would be better than "is reflected by"

The next sentence is even more messy. ifsStretchCount is always less than ifsStretchRatio since the equation that sets it is mod ifsStretchRatio. (A good thing that is true because no where does it say what to do if that condition wasn't met.) Delete "the variable ifsStretchCount is less than ifsStretchRatio and". This sentence also leaves out ifsStretchConstant. One has already said above how the additional wait was determined. Also, the rest of the language implies that the test of whether a frame is waiting is done before deference enforces the interframe spacing. That isn't what the code above does. It enforces the spacing regardless of whether a frame is waiting. Then when the wait has finished, it checks to whether a frame is waiting. If it is, it retains the value of ifsStretchCount. If no frame is waiting, it waits one more byte and sets ifsStretchCount to zero. (Properly speaking, I don't think this is "initializing" since there is a process to initialize variables at start-up.)

SuggestedRemedy

Make the language more precise as above.

There is also another problem but since it involves the logic of the code as well as the text here, I will put it in another comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.8** *P* **18** *L* **15** # **1220**

Thaler, Pat Agilent

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

I wish there was something more severe than TR for this comment.

We do not change the model lightly. There are a lot of existing implementations based on it. Much care is necessary in reviewing changes to ensure that the modifications are acceptable.

Here we have changes to the model that are not marked as changes.

SuggestedRemedy

Recirculate with all changes to the MAC marked accurately and with adequate time for additional review.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.8** *P* **18** *L* **15** # **1222**

Thaler, Pat Agilent

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

Pascal is a strongly typed language. That means that it doesn not allow doing boolean operations (e.g. if and and) to non-boolean variables. Our existing psuedo-Pascal code stays within this requirement.

Therefore, this line is incorrect

SuggestedRemedy

If you made ifsStretchCarry a Boolean (see my comment on your variable declarations), this would be

if ifsStretcCount > 0 and not ifsStretchCarry then

however see also my other comment that suggests rewritting this whole area.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.8** *P* **18** *L* **17** # **1223**

Thaler, Pat Agilent

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

This also affects 4.2.7.2 is a rewrite to address a number of issues raised in my other comments.

It makes ifsStretchMultiplier and ifsStretchConstant be in bytes so they can be defined simply as integers without the possibility that future values will insert partial bytes in the IFG. It fixes the problems with the constant and variable definitions.

Most importantly, it concentrates the calculation of gap extension into one place, Bit Transmitter, to make it easier to understand and reduce the chance of error.

SuggestedRemedy

Changes to 4.2.7.2
Define ifsStretchMultiplier as the number of bytes required for every ifsStretchRation bits rather than the number of bits.
Define ifsStretchConstant as the number of bytes required for every frame rather than the number of bits.
Define ifsStretchCarry as a Boolean which is True when one is carrying the remainder bits.
Define ifsStretchInclude as taking a value of 1 when the interframe space is to be included and 0 otherwise.
Change upper limit of ifsStretchSize to (((((maxUntaggedFrameSize + qTagPrefixSize) x 8 + headerSize + (interFrameSpacing * ifsStretchIncludeIFS) + ifsStretchRatio) - 1) div ifsStretchRatio) + 1) * ifsStretchMultiplier + ifsStretchConstant);
(I think that is as right except that it is a bit larger than it needs to be since it includes both the carry and the stretch done when ifsStretchCarry is false. It is okay for the range allowed to be bigger than it needs to be and I don't think we should complicate it further. It will take some checking to verify it.)

Remove the changes to process deference. All the needed changes can be done in BitTransmitter.
Change the first statement setting ifsStretchSize in process BitTransmitter to:
ifsStretchSize := (ifsStretchCount + headerSize + frameSize + (ifsStretchIncludeIFS * interFrameSpacing)) div ifsStretchRatio * ifsStretchMultiplier + ifsStretchConstant;

Change if statement testing StretchCount and StretchCarry on line 15 to:
if ifsStretchCount > 0 and not ifsStretchCarry then

Change the second statement setting ifs StretchSize to:
ifsStretchSize := ifsStretchSize + ifsStretchMultiplier

(Note that this is okay now because deference will multiply it by 8 which is what we want.)

In 4.4, for the FEC column of the table, change ifsStretchConstant to 14 bytes. Change ifsStretchMultiplier to 16 bytes. In the other columns, change bits to bytes for ifsStretchConstant. In the WAN column, change 8 bits to 1 byte for ifsStretchMultiplier. Change the values in the Notes to match this.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.2.8** *P* **18** *L* **17** # **1221**

Thaler, Pat Agilent

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

This line adds ifsStretchMultiplier to ifsStretchSize. Then in process deference, that sum will be multiplied by ifsStretchMultiplier. Therefore, when you have ifsStretchCount not zero you are adding the square of ifsStretchMultiplier or 16 kibi bits (units included just to make Howard happy) to the interframe gap. I doubt that is what you intended.

Note also that this would make ifsStretchSize much bigger than the limit you state for ifsStretchSize in 4.2.7.2.

SuggestedRemedy

I think you meant to add 1. However, this error also points out what a non-optimal spaghetti kludge this is written as. It will make it difficult for reviewers to spot the bugs.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.4.2** *P* **18** *L* **43** # **960**

Thompson, Geoff Nortel

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

Delete "ifstretch" as option in Legacy.

SuggestedRemedy

Insert into Carrier Grade
Make additional changes to make this change complete including moving the WIS over too.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.4.2** *P* **18** *L* **43** # **959**

Thompson, Geoff Nortel

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

Text not compatible with "Legacy Ethernet". Bad idea for reasons previously given.

SuggestedRemedy

Move to parallel "Carrier Grade" standard

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.4.2** *P* **18** *L* **45** # **560**

Booth, Brad Intel

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

The table was not intended to explain the implementation of the values as that is what the notes are for.

SuggestedRemedy

Add new parameters into existing table. ifsStretchRatio should be: not applicable, 1912 bits, 104 bits. ifsStretchConstant should be: 0 bits, 112 bits, 0 bits. ifsStretchCarry should be: 0, 0, 1. ifsStretchIncludeIFS should be: 0, 0, 1. ifsStretchMultiplier should be: not applicable, 128 bits, 8 bits.

Note 5 should have underlines and strikethroughs to show the changes in the text.

Note 6 should be moved before Note 4 and should start off as:
NOTE 6 - For 1 Gb/s FEC implementations, the values...

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.4.2** *P* **19** *L* **3** # **1049**

Law, David 3Com

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

There is no definition anywhere of what 'normal' means. In addition the text the introduces this table reads 'The following ... for rate control implementations:' yet the column labeled 'Normal ...' is not a rate control implementation.

SuggestedRemedy

Suggest that 'The following parameter values shall be used for the allowed rate control implementations:' be changed to read 'The following parameter values for interframe space stretching shall be used for their corresponding PHYs:'

Suggest that column 4 'FEC 1Gb/s' be moved to be column 2 and called '1Gb/s FEC', column 3 'WAN 10Gb/s' be renamed '10Gb/s WAN' but remain column 3 and column 2 becomes column 4 and be renamed 'All other implementations'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **04** *SC* **4.4.2** *P* **19** *L* **4** # **961**

Thompson, Geoff Nortel

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

I don't know what the term "Normal" means in the column heading context. I don't think "normal" is a defined term as used here.

SuggestedRemedy

Pick another term that is more appropriate.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 04 changes removed in response to comment #337

Cl **22** *SC* *P* **23** *L* **12** # **404**

James, David JGG

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

Table center convention are for everything that is not text-like.

SuggestedRemedy

1) Center columns 1, 2, 4.
2) Establish and enforce such conventions throughout.

Proposed Response *Response Status* **C**

REJECT.

This is the style that has been used in IEEE 802.3 by the IEEE editors. For example, in the existing published base standard IEEE Std 802.3-2002, Section TWO on page 24 Table 22-6 uses this format. Our draft has been reviewed multiple times by the IEEE staff editor, and we have incorporated all of the comments we received from her to date. Our group works very closely with the staff to ensure that our documents can be published very quickly (generally within days) after approval by the Standards Board. If there has been a style change we are sure our IEEE staff editor will inform us and that it will be resolved prior to publication.

Cl **22** *SC* **0** *P* **24** *L* **5** # **405**

James, David JGG

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

Inconsistent capitalization after value listing.

SuggestedRemedy

line 11: Reserved ==> reserved
line 21: Restart Auto-Negotiation Process ==> restart auto-negotiation process
line 24: Full Duplex ==> full duplex
line 25: Half Duplex ==> half duplex
line 30: Reserved ==> reserved

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

You missed a few:
line 15: Enable ==> enable
line 16: Disable ==> disable
line 33: Read ==> read
line 40: Read ==> read

Keep Reserved to be common with other tables in this clause.

Cl **22** *SC* **0** *P* **26** *L* **28** # **407**

James, David JGG

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

The register name and description hare hopelessly merged, confusing this reading and following uses of register names.

SuggestedRemedy

1) Split the "Register name" into two columns, one for name and one for descrption.
2) Use run-together no-space words for register names, such as: unidirectionalOamAbility
3) Adopt a uniform convention for register names throughout the draft.

Proposed Response *Response Status* **C**

REJECT.

This is an existing table that is having some lines added to it. It would be out of scope to make such a change as you're suggesting. Each register is described in the text. The table is not the proper location for a description.

Cl **22** *SC* **0** *P* **27** *L* **28** # **408**

James, David JGG

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

Inconsistent capitalization

SuggestedRemedy

Function ==> function
Address ==> address
Data ==> data
Reserved ==> reserved
on Read ==> on read
Device Address ==> Device address

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Accept everything but "Reserved" - this stays uppercase. Many other tables in this clause use this convention and I can't see making this table different.

Also, don't change Function

Cl **22** *SC* **22** *P* *L* # **74**

Dawe, Piers Agilent

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

Need to refer to the additional RS requirements in 65.1.

SuggestedRemedy

Insert a sentence saying something like:
Additional requirements for a reconciliation sublayer in 1000BASE-PX are given in 65.1.

Proposed Response *Response Status* **C**

REJECT.

Clause 22 deals with 100M, Clause 65 deals with 1000M. There is no need to reference clause 65 in Clause 22.

Cl **22** *SC* **22.** *P* **23** *L* **1** # **1208**

Dove, Daniel HP ProCurve Networki

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

Clause 22 "Reconciliation" is mispelled.

SuggestedRemedy

Correct spelling.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **22.2.4** *P* **23** *L* **1** # **962**

Thompson, Geoff Nortel

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

Leave Table 22-6 in Legacy as prime reference within scope of proposed reorg/split

SuggestedRemedy

Carrier Grade refers to Legacy cl 6 master reference.
Alternative would be to block out and show CG registers in legacy as "reserved for Carrier Grade use".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl **22** *SC* **22.2.4** *P* **23** *L* **34** # **403**

James, David JGG

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

The register name and description hare hopelessly merged, confusing this reading and following uses of register names.

SuggestedRemedy

1) Split the "Register name" into two columns, one for name and one for descrption.
2) Use run-together no-space words for register names, such as:
pseControlRegister or
PseControlRegister or
pse_control_register
(listed in my order of preference)
3) Adopt a uniform convention for register names throughout the draft.

Proposed Response *Response Status* **U**

REJECT.

This is an existing table that is having some lines added to it. It would be out of scope to make such a change as you're suggesting. Each register is described in the text. The table is not the proper location for a description.

Cl **22** *SC* **22.2.4** *P* **23** *L* **5** # **618**

Grow, Robert Intel

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

Incorrect edit instruction.

SuggestedRemedy

Change to read:

Change Table-22-6 (IEEE Std 802.3af-2003) as follows:

Proposed Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **22.2.4** *P* **23** *L* **5** # **1042**

Law, David 3Com

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

Editing instruction are incorrect.

SuggestedRemedy

The following text provides changes, suggest the editing instructions 'Delete row for reserved Registers 13 and 14 and insert rows for new Registers 13 and 14 in Table 22-6:' should read 'Change Table 22-6 as follows:'. to match change instructions give at the start of this Clause.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #618

Cl **22** *SC* **22.2.4.1** *P* **24** *L* **1** # **963**

Thompson, Geoff Nortel

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

Leave Table 22-7 in Legacy as prime reference

SuggestedRemedy

Carrier Grade refers to Legacy cl 6 master reference, or there is a block reserved in Legacy for CG & the details are in CG.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl **22** *SC* **22.2.4.1.11** *P* **24** *L* **45** # **1043**

Law, David 3Com

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

The change provided does not follow the change instructions given at the start of this Clause [Page 21, line 7].

SuggestedRemedy

Please provide change text in underscore and strike out as described in the change instructions given at the start of this Clause. In addition it would be good if the subclause title of the changed text be provided just above the change instructions.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **22.2.4.1.11** *P* **24** *L* **47** # **614**

Grow, Robert Intel

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

Not a proper change instruction.

SuggestedRemedy

Rewrite with strike-through and underscore.

Proposed Response *Response Status* **C**

ACCEPT.

See response to comment #1043

Cl **22** *SC* **22.2.4.1.11** *P* **24** *L* **47** # **561**

Booth, Brad Intel

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

Edit is marked as a Change.

SuggestedRemedy

Use underlines and strikethroughs as appropriate to highlight the change.

Proposed Response *Response Status* **C**

ACCEPT.

See response to comment #1043

Cl **22** *SC* **22.2.4.1.12** *P* **24** *L* **51** # **565**

Booth, Brad Intel

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

Headings should use caps only for the first letter and abbreviations. All other words should start with lowercase.

SuggestedRemedy

Change Enable to enable.

Applies to 22.2.4.2.8, 22.2.4.3.11, 22.2.4.3.12 and to the table headings for 22-9 and 22-10.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **22.2.4.1.12** *P* **24** *L* **51** # **964**

Thompson, Geoff — Nortel

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

Delete as option in Legacy

SuggestedRemedy

Insert into Carrier Grade

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl **22** *SC* **22.2.4.1.12** *P* **24** *L* **53** # **1053**

Law, David — 3Com

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

Please add text that require Unidirectional OAM to be disabled in whenever the PHY is operating in Half Duplex mode.

While IEEE P802.3ah of course does not support half-duplex mode it seems to me there is nothing currently to prevent the PHY being programmed for Half Duplex mode, Auto-Negotiation disabled and Unidirectional OAM Enabled. At that point we have a CSMA/CD node that will no longer do carrier sense nor collision detect and frames will be transmitted into a repeater whenever the MAC feels like on a unidirectional link loss - the classic half-duplex/full-duplex miss-configuiration. While addressing my other TR that requires a Clause 57 OAM sublayer to be present and enabled before the Unidirectional OAM Enabled bit is set will go a long way to address this issue I would still like to see the PHY not allow this particular combination.

SuggestedRemedy

Assuming my other comment about re-wording the Auto-Negotiation bit is accepted suggest that the first few lines of this subclause reads:

'The ability to encode and transmit data from the media independent interface regardless of the value of link_status is controlled by bit 0.1 as well as the status of Auto-Negotiation Enable bit 0.12 and the Duplex Mode bit 0.8 as this ability can only be supported if Auto-Negotiation is disabled and the PHY is operating in full-duplex mode. If bit 0.1 is set to a logic one, bit 0.12 to logic zero and bit 0.8 to logic one, encoding and transmitting data from the media independent interface shall be enabled regardless of the value of link_status. If bit 0.1 is set to a logic zero, bit 0.12 to logic one or bit 0.8 to a logic zero, encoding and transmitting data from the media independent interface shall be dependent on the value of link_status.'

The description text for bit 0.1 should also be updated to read 'When bit 0.12 is one or 0.8 is zero this bit is ignored. When bit 0.12 is zero and bit 0.8 is one:'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Make all changes as suggested and, in addition, change the name of this register bit to Unidirectional Enable

Cl **22** *SC* **22.2.4.1.12** *P* **24** *L* **53** # **1052**

Law, David 3Com

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

An additonal shall statement needs to be added somewhere that this bit shall only be set to a one after the management entity has enabled a Caluse 57 OAM sublayer and that it shall be cleared prior to disabling a Caluse 57 OAM sublayer.

SuggestedRemedy

Suggest the text 'A management entity shall only set bit 0.1 to a logic one after it has enabled an associated Clause 57 OAM sublayer. A management entity shall only clear bit 0.1 to a logic zero prior to it disabling an associated Clause 57 OAM sublayer.' be added with an associated PICS item.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the text to read:
"A management entity shall only set bit 0.1 to a logic one after it has enabled an associated OAM sublayer (Clause 57) or this device is a 1000BASE-PX PHY. A management entity shall clear bit 0.1 to a logic zero prior to it disabling an associated OAM sublayer when this device is not a 1000BASE-PX PHY."

Need associated PICs.

Cl **22** *SC* **22.2.4.1.12** *P* **24** *L* **53** # **1050**

Law, David 3Com

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

There appear to be contradicting shall statements. Page 24, line 54 states 'If bit 0.1 is set to a logic one, encoding and transmitting data from the media independent interface shall be enabled regardless of the value of link_status.' then page 25, line 8 states 'When bit 0.12 is one, bit 0.1 shall be ignored.'.

While it could be argued we sometimes use similar wording for the ability bits overriding the enable bits, in those cases all we say is that the enable bit will return zero if the ability is not present.

In this case the enabling of unidirectional transmit is in fact more a combination of two bits, and only when they are both is the right state will the function be enabled. If the ability bit is true and the enable bit is true the function still might not be enabled if Auto-Negotiation is also enabled. In addition in this case including the second shall statement after the default value in a different paragraph makes it difficult to find.

I therefore suggest the following rewording for consideration.

SuggestedRemedy

Suggest that the text in subclause 22.2.4.1.12 that reads:

'The ability to encode and transmit data from the media independent interface regardless of the value of link_status is controlled by bit 0.1. If bit 0.1 is set to a logic one, encoding and transmitting data from the media independent interface shall be enabled regardless of the value of link_status. If bit 0.1 is set to a logic zero, encoding and transmitting data from the media independent interface shall be dependent on the value of link_status.'

should be changed to read:

'The ability to encode and transmit data from the media independent interface regardless of the value of link_status is controlled by bit 0.1 as well as the status of Auto-Negotiation Enable bit 0.12 since this ability cannot be supported if Auto-Negotiation is enabled. If bit 0.1 is set to a logic one, and bit 0.12 to logic zero, encoding and transmitting data from the media independent interface shall be enabled regardless of the value of link_status. If bit 0.1 is set to a logic zero or bit 0.12 to logic one, encoding and transmitting data from the media independent interface shall be dependent on the value of link_status.'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution to comment #1053

Cl **22** *SC* **22.2.4.1.12** *P* **25** *L* **3** # **1051**

Law, David 3Com

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

Suggest that the text 'If a PHY reports via bit 1.7 ...' should be the start of a new paragraph as is done for similar text in existing Clause 22 (for example see IEEE Std 802.3-2002 subclause 22.2.4.1.4).

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **22.2.4.2** *P* **26** *L* **3** # **965**

Thompson, Geoff Nortel

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

Leave Table 22-8 in Legacy as prime reference

SuggestedRemedy

Carrier Grade refers to Legacy cl 6 master reference, or there is a block reserved in Legacy for CG & the details are in CG.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl **22** *SC* **22.2.4.2.8** *P* **27** *L* **1** # **563**

Booth, Brad Intel

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

This is not a delete and insert, this is a change.

SuggestedRemedy

Show strikethroughs and underlines to show the edits.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #615

Cl **22** *SC* **22.2.4.2.8** *P* **27** *L* **1** # **615**

Grow, Robert Intel

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

Instruction should be Replace and it is improperly located.

SuggestedRemedy

Move the instruction after the subclause heading and change to: "Replace 22.2.4.2.8 with the following:"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The heading is also changed for this subclause so I don't want to move the instructions.

Cl **22** *SC* **22.2.4.2.8** *P* **27** *L* **3** # **966**

Thompson, Geoff Nortel

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

Delete as option in Legacy

SuggestedRemedy

Insert into Carrier Grade

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl **22** *SC* **22.2.4.2.8** *P* **27** *L* **6** # **630**

Daines, Kevin World Wide Packets

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

This 2nd sentence just seems funny to me. I know what it is trying to say. However, it can be interpreted, I would imagine, as 'When read as a logic zero, bit 1.7 indicates the PHY lacks the ability to encode and transmit data from the MII whether link_status is TRUE or FALSE.'

Perhaps this text should more closely follow the better worded (imo) text found in Table 22-8.

SuggestedRemedy

Change "lacks the ability to encode and transmit data from the media independent interface regardless of the value of link_status." on line 7-8, to read:
"is able to transmit from media independent only when link_status=TRUE."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

"is able to transmit data from the media independent interface only when link_status=TRUE."

Cl **22** *SC* **22.2.4.2.8** *P* **27** *L* **9** # **923**

Cravens, George — Mindspeed

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

Unidirectional OAM does not apply (or make sense) for Copper interfaces (10Pass-TS and 2Base-TL).

Add a note that the Unidirectional OAM Ability will always be "0" for 10Pass-TS and 2Base-TL PHYs.

SuggestedRemedy

Add a note that the Unidirectional OAM Ability will always be "0" for 10Pass-TS and 2Base-TL PHYs.

Proposed Response *Response Status* **C**

REJECT.

A PHY that is operating in 10PASS-TS or 2BASE-TL would simply set the Unidirectional OAM Ability bit to 0. I don't believe this is the location to describe which PHYs support this function..

Cl **22** *SC* **22.2.4.3** *P* **27** *L* **9** # **617**

Grow, Robert — Intel

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

The changes are incomplete for defining additional registers.

SuggestedRemedy

Insert the following text with [instruction] appropriately followed then deleted.

22.2.4.3 Extended capability registers
Change the first paragraph of this subclause (IEEE Std 802.3af) as follows:
In addition to the basic register set defined in 22.2.4.1 and 22.2.4.2,PHYs may provide an extended set of capabilities that may be accessed and controlled via the MII management interface. [underscore on]Thirteen[underscore off, strikethrough on]Eleven[strikethrough off] registers have been defined within the extended address space for the purpose of providing a PHY-specific identifier to layer management, to provide control and monitoring for the Auto-Negotiation process, [strikethrough on]and [strikethrough off]to provide control and monitoring of power sourcing equipment[underscore on], and to provide MMD register access[underscore off].

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Also, in the 3rd paragraph of 22.2.4 (IEEE Std 802.3af), change the 12 to 14 in the sentence: "Registers 2 through 12 are part of the extended register set."

Cl **22** *SC* **22.2.4.3.11** *P* **27** *L* **13** # **631**

Daines, Kevin — World Wide Packets

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

Nowhere in 22.2.4.3.11 or 22.2.4.3.12 do we point to Annex 45B. I think we should.

SuggestedRemedy

Add a sentence after bullet d) to read "For additional insight into the operation and usage of this register, see Annex 45B."

Also, duplicate this sentence on page 28, about line 14.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **22.2.4.3.11** *P* **27** *L* **16** # **1056**

Law, David — 3Com

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

Typo.

SuggestedRemedy

Suggest that '... (register 14) ...' should read '... (Register 14) ...'. I believe that when we reference a particular register the 'r' is register is uppercase. Please perform a global search and replace for this.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **22.2.4.3.11** *P* **27** *L* **18** # **967**

Thompson, Geoff — Nortel

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

Reference to [22.2.4] in para 1 not cross linked

SuggestedRemedy

Cross link

Proposed Response *Response Status* **C**

REJECT.

No problem was found with the cross reference

Cl **22** *SC* **22.2.4.3.11** *P* **27** *L* **33** # **564**
Booth, Brad Intel

Comment Type **E** *Comment Status* **A**
MMD abbreviation is explained long after its first use.

SuggestedRemedy
Change 22.2.4.3.11 heading to read:
MDIO Manageable Device (MMD) access control register (Register 13)

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

Actually, put this in the new paragraph added to 22.2.4.3 as suggested by comment #617

Remove text expansion from 2nd paragraph in 22.2.4.3.11

Cl **22** *SC* **22.2.4.3.11** *P* **27** *L* **38** # **68**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
4

SuggestedRemedy
four

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

Cl **22** *SC* **22.7.3.4** *P* **28** *L* **15** # **616**
Grow, Robert Intel

Comment Type **E** *Comment Status* **A**
The instructions should be an Insert and it needs a subclause heading preceeding it.

SuggestedRemedy
"22.7.3.4 Management functions
Insert the following PICS ms into 22.7.3.4 after MF37:" and renumber the inserted items as MF37a through MF37d.

OR

"22.7.3.4 Management functions
Insert the following PICS items into 22.7.3.4 after MF37, and renumber the following PICS items:"

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

Cl **22** *SC* **22.7.3.4** *P* **28** *L* **29** # **1058**
Law, David 3Com

Comment Type **T** *Comment Status* **R**
PICS items are missing for Register 13 and 14.

SuggestedRemedy
Add PICS items for Register 13 and 14.

Proposed Response *Response Status* **C**
REJECT.

There are currently no "shall" statements for registers 13 & 14. Without these, PICS aren't necessary.

The commenter is strongly urged to suggest places for the shall statements so that PICS can be appropriately added.

Cl **22** *SC* **Table 22-7** *P* **24** *L* **35** # **406**
James, David JGG

Comment Type **T** *Comment Status* **A**
Inconsistent capitalization.

SuggestedRemedy
0.1 unidirectionalOamEnable. When 0.12 is one, this bit is ignored. When bit 0.12 is zero:
1 = enable transmit from media independent interface regardless of link_status
0 = enable transmit from media independent interface only when link_status=TRUE

0.0 Reserved Write as 0, ignore on read

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

Use Unidirectional enable for register bit name

Also, use Unidirectional ability for other register bit name

Cl **22** *SC* **Table 22-7** *P* **24** *L* **35** # **1055**
Law, David 3Com

Comment Type **E** *Comment Status* **A**
Typo.

SuggestedRemedy
Suggest that 'When 0.12 is one ...' should read 'When bit 0.12 is one ...'.

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

Cl **22** *SC* **Table 22-8** *P* **26** *L* **27** # **1054**

Law, David 3Com

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

Typos.

SuggestedRemedy

All non strikethrough text in the description column for bit 1.7 shoudl be underlined as new. The text 'PHY is able ...' shoudl read 'PHY able ..' to be consistent with other bits.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **Table 22-9** *P* **27** *L* **22** # **1057**

Law, David 3Com

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

Typo.

SuggestedRemedy

In the case of Table 22-9 and 22-10 there should be the usual Table footnote 'a' to the corner of R/W with the explanation of that meaning in the footnote. See Table 22-8 for example.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **22** *SC* **Table 22-9** *P* **27** *L* **23** # **1059**

Law, David 3Com

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

Please add heading to two bit encoding of Function bits (13.15:14) as is done elsewhere in the case of a two bit encoding to ensure absolute clarity.

SuggestedRemedy

Add 13.15 above the first column of numbers, 13.14 above the second. See Page 24, line 28, Bit 0.6 for an example.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **24** *SC* **0** *P* **31** *L* **6** # **411**

James, David JGG

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

Excess capitalization

SuggestedRemedy

PCS Management Counter
==>
PCS management counter

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #1065

Cl **24** *SC* **0** *P* **31** *L* **8** # **412**

James, David JGG

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

Ambiguous reference.

SuggestedRemedy

The following counter ...
==>
the coding_violation_counter counter ...

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #1065

Cl **24** *SC* **2.2.1.7** *P* **31** *L* **6** # **333**

Grow, Robert Intel

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

Counter should be defined in receive state diagram, not in isolation here. As defined, interoperability problems are likely. For example, it isn't clear what role alignment or link_status has, nor if it counts inter-frame, only code groups within a frame, or something in between (when RX_DV is asserted). The term "normal mode" not defined for the PCS.

SuggestedRemedy

Change counter definition to a variable in 24.2.3 and add to receive state diagram. I would recommend defining a constant of invalid, variable of coding_violation, and in the Figure 24-10 add the variable. The clause 45 counter then defines the counter size and behaviour in terms of the state diagram. It also should be clear this is an optional capability (independent of previously mandatory functions (probably needs its own major option in the PICS).

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See response to comment #1065

Cl **24** *SC* **24.1.1** *P* *L* # **77**

Dawe, Piers Agilent

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

This sentence will become false: "There are currently two embodiments within this family: 100BASE-TX and 100BASE-FX."

SuggestedRemedy

Change to:
This family includes 100BASE-TX, 100BASE-FX, 100BASE-LX10 and 100BASE-BX10.
Insert before last sentence of first paragraph:
100BASE-LX10 and 100BASE-BX10 are introduced in 56 and described in 58.
Modify last sentence of first paragraph to:
The term 100BASE-X is used when referring to issues common to any of these embodiments.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Adding this to Clause 24 is contrary to the intent of minimizing the number of clauses we open up so that document restructuring is more easily supported. This is better added as part of the introductory text for the "changes to Clause 24" portion of the new Clause 66.

Cl **24** *SC* **24.2.2.1.7** *P* **31** *L* **14** # **1065**

Law, David 3Com

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

The text states that this counter only increments while '... the receiver is in normal mode ...' however I have searched Clause 24 and I can find no definition of what 'normal mode' is for a receiver.

The definition of the counter then states that the counter increments on each invalid code group however on examination of Figures 24-10 and 24-11 receive state diagrams it can be seen there is no such thing as a code group for 100BASE-X when carrier has not been detected. In Figure 24-11 it can be seen the DECODE function is only called in the DATA state.

Now there is a variable called gotCodeGroup.indicate that is asserted by Figure 24-10 that may be able to help. On examination of Figure 24-11 however it can be seen that in the IDLE state, entered upon start-up and at the end of a stream, the variable RX_DV is set to FALSE. This in turn sets Figure 24-10 into the UNALIGNED state where the gotCodeGroup.indicate variable is no longer asserted.

Based on that above it is not clear when the counter should be increment. To clarify this please add the state where the counter should be incremented to one of the existing state diagrams or add a new separate State Diagram to support this counter.

SuggestedRemedy

Please add the state where the counter should be incremented to one of the existing state diagrams or add a new separate State Diagram to support this counter.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove everything from Clauses 24 & 45 related to this and modify the Clause 30 aPCSCodingViolation counter (30.5.1.1.13) to increment for every RX_CLK when RX_DV and RX_ER are both active.

Cl **24** *SC* **24.2.2.1.7** *P* **31** *L* **16** # **970**

Thompson, Geoff Nortel

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

The text implies that the /H/ code group is an invalid code group. It is not. See 24.2.2.1. It is a valid non-data code group used (primaily) in half duplex systems to propagate the information that corrupted data or other carrier events were received at a repeater.

SuggestedRemedy

Eliminate this entire text per my other comment on this sub-clause.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #1065

Cl **24** *SC* **24.2.2.1.7** *P* **31** *L* **16** # **80**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
This is a PCS counter but 45.2.1 is PMA/PMD registers.

SuggestedRemedy
Do you mean 45.2.3.17?

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment #1065

Cl **24** *SC* **24.2.2.1.7** *P* **31** *L* **17** # **1063**
Law, David 3Com

Comment Type **E** *Comment Status* **A**
Incorrect cross reference.

SuggestedRemedy
Suggest that cross ref 45.2.1 should be 45.2.3.17

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment #1065

Cl **24** *SC* **24.2.2.1.7** *P* **31** *L* **17** # **216**
Tom Mathey Independent

Comment Type **E** *Comment Status* **A**
Bad cross reference.

SuggestedRemedy
Should be 45.2.3.17

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment #1065

Cl **24** *SC* **24.2.2.1.7** *P* **31** *L* **6** # **969**
Thompson, Geoff Nortel

Comment Type **TR** *Comment Status* **A**
Wrongly placed in draft and redundant to existing counters in Clause 30, See: 30.3.2.1.5.

SuggestedRemedy
Delete and add to behavior of existing counter if neccessary.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment #1065

Cl **24** *SC* **24.2.2.1.7** *P* **31** *L* **7** # **70**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
Is the name "PCS Management Counter" the best name? It doesn't count managements, but coding violations.

SuggestedRemedy
Call it "PCS coding violation Counter"?

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment #1065

Cl **24** *SC* **24.2.2.1.7** *P* **31** *L* **7** # **69**
Dawe, Piers Agilent

Comment Type **TR** *Comment Status* **A**
This new function, PCS Management Counter, seems to be written in such a way that it would apply to all 100BASE-X PCSs with MDIO or equivalent. This would be a retrospective requirement on existing non-EFM 100BASE-X PCSs which presumably is not our intention.

SuggestedRemedy
Make it clear that this function is optional.

Proposed Response *Response Status* **U**
ACCEPT IN PRINCIPLE.

See response to comment #1065 - the counter is removed and only a Clause 30 attribute remains

Cl **24** *SC* **24.2.2.1.7** *P* **31** *L* **8** # **1060**

Law, David 3Com

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

I not sure how accurate the statement that 'If an MDIO interface is provided (see CROSS REF Clause 22), it is accessed via that interface.' is correct as this counter is included in a Clause 45 MMD register, not a Clause 22 register. To be able to access this register 1) the Clause 22 MDIO interface has to be provided, 2) the Register 13 and 14 MMD interface has to be implemented as part of that Clause 22 interface, and 3) the Clause 45 PCS MMD has to be implemented.

Furthermore if we now assume that all the above has been done it still isn't clear to me how to present the other registers in the PCS MMD registers, see subclause 45.2.3, as this subclause was never written to be able to cope with supporting a 100BASE-X PCS. What are the contents of the MMD PCS mandatory registers (see 45.5.5.7). What for example should the Speed Selection bits (3.0.5:2) in the MMD PCS register be set to and how do they interact with the Clause 22 Speed selection bits (0.6 & 0.13), are there any updates to the PCS ability bits to support 100 Mb/s operation. From the changes to Clause 45 in IEEE 802.3ah I cannot see any changes to these registers.

SuggestedRemedy

Please provide the necessary updates to Clause 45 to allow the PCS MMD to support inclusion in a 100BASE-X PHY.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #1065

Cl **24** *SC* **24.2.3.2** *P* **31** *L* **23** # **1064**

Law, David 3Com

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

The MDIO management interface is not manditory therefore the variable should be defined in such as way that it isn't dependednt on the presence of a management regsiter.

SuggestedRemedy

Suggest that the text 'Controls the enabling and disabling of unidirectional OAM capability. This bit reflects the value in MDIO register 0.1.' should be changed to read 'A control variable that enables the unidirectional OAM. This variables is provided by a management interface that may be mapped to the Clause 22 Control register Unidirectional OAM Enable bit (0.1).'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Accept changes but change register name to Unidirectional enable.

Cl **24** *SC* **24.2.3.2** *P* **31** *L* **24** # **1062**

Law, David 3Com

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

Typo.

SuggestedRemedy

The change instruction is Insert for this text therefore there should not be an underscore on 0.1.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **24** *SC* **24.2.3.2** *P* **31** *L* **29** # **1186**

Thatcher, Jonathan N/A

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

"Insert new subclause:" instruction to editor doesn't make sense. Is this an insertion or a change?

SuggestedRemedy

Remove

Proposed Response *Response Status* **C**

ACCEPT.

This was inserted between D1.1 and D1.2 for no apparent reason.

Cl **24** *SC* **24.3.4.5** *P* **32** *L* **14** # **414**

James, David JGG

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

Hard to cross-reference inconsistent state machine names.

SuggestedRemedy

START STREAM J
==>
START_STREAM_J

And, similar changes throughout (although some already have underscores).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Changes to Clause 24 are being removed as part of the response to comment #952.

Cl **24** *SC* **24.3.4.5** *P* **32** *L* **48** # **413**

James, David JGG

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

Excess capitalization

SuggestedRemedy

Far-End Fault Generate
==>
Far-end fault generate

Proposed Response *Response Status* **C**

REJECT.

This is outside the scope of P802.3ah. This is the same heading used and approved in the original 802.3u project.

Cl **24** *SC* **All** *P* *L* # **838**

Brand, Richard Nortel Networks

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

These new additions do not align with the objectives listed in 24.1.2 and no reference is made to cl 58 requirements

SuggestedRemedy

Separate the documents per comment 6.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl **24** *SC* **All** *P* **31** *L* **1** # **968**

Thompson, Geoff Nortel

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

There is no justification for the inclusion of this material in clause 24 as it is unnecessary to satify the scope and objectives of 24.1 nor has any text been proposed to the introductory material of cl 24 to provide for the inclusion of a new 4B/5B PMD such as that being proposed in cl 58.

SuggestedRemedy

Move to parallel Carrier Grade standard

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl **24** *SC* **Figure 24-16** *P* **33** *L* **4** # **1066**

Law, David 3Com

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

Typo.

SuggestedRemedy

The change instructions should read 'Change figure 24-16 as follows:' as underscore and strikeout changes are shown.

Proposed Response *Response Status* **C**

ACCEPT.

Apply to figure 24-8, also.

Cl **30** *SC* *P* **46** *L* **14** # **418**

James, David JGG

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

Values for "True" and "False" should be TRUE and FALSE, and properly indented as when listing enumerated values below.

SuggestedRemedy

Do as suggested.

Proposed Response *Response Status* **C**

REJECT.

The syntax of this attribute is not an ENUMERATED VALUE but instead is BOOLEAN as stated on line 11 hence the indenting seen below for attributes with the syntax ENUMERATED VALUE would be incorrect.

IEEE P802.3ah is not a stand alone document but instead is a amendment to IEEE Std 802.3. Due to this, the IEEE P802.3ah Task Force is not able to choose its own Clause 30 MIB syntax but instead has to be consistent with IEEE Std 802.3 Management.

Cl **30** *SC* *P* **47** *L* **3** # **419**

James, David JGG

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

This is not an "International Standard"

SuggestedRemedy

Change to something that is true, such as this document, this specification, EFM, or whatever you have standardized upon when referring to this draft.

Proposed Response *Response Status* **C**

REJECT.

The text '... this International Standard ...' appears in a paragraph that shows no change from the existing text and therefore is out of scope for this ballot.

Cl **30** *SC* *P* **47** *L* **36** # **420**

James, David JGG

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

Typo, with ".;" sequence.

SuggestedRemedy

1) Correct.
2) General search and replace (many others exist also).

Proposed Response *Response Status* **C**

REJECT.

It is not clear from the comment what the actual typo is - it can only be assumed that the commenter feels '.;' is a typo. Based on this the following response is provided.

In IEEE Std 802.3, Clause 30 provides a protocol independent management specification. This is addressed in paragraph 3 of subclause 30.1.1 'Scope' of IEEE Std 802.3-2002 which states 'This specification is defined to be independent of any particular management application of protocol.'. This enables the specifications provided in Clause 30 to be referenced in various other protocol depended MIBs such as GDMO and SNMP. We do provide some protocol dependent management specifications in the Clause 30 Annexes, Annex 30A & B provide a GDMO specification for all of Clause 30, Annex 30C provides a SNMP specification for the Link Aggregation portion of Clause 30. In the vast majority of cases however, and IEEE P802.3ah is another one of these cases, the SNMP MIB is provided by the IETF. There work will be heavily based on referencing Clause 30. This is addressed further in the presentation found at the URL -[http://www.ieee802.org/3/efm/public/sep01/law_1_0901.pdf].

Now given that Clause 30 is written in a protocol independent manner, a syntax had to be created and its syntax borrows heavily from GDMO. Due to this each object ends with a ';' and therefore as required by the syntax there is no typo present.

Cl **30** *SC* *P* **48** *L* **39** # **421**

James, David JGG

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

Enumerate values should be capitalized and described.

SuggestedRemedy

List and describe:
ENABLED
DISABLED

Proposed Response *Response Status* **C**

REJECT.

IEEE P802.3ah is not a stand alone document but instead is a amendment to IEEE Std 802.3. Due to this, the IEEE P802.3ah Task Force is not able to choose its own Clause 30 MIB syntax but instead has to be consistent with IEEE Std 802.3 Management. IEEE Std 802.3 does not capitalize the enumerations 'enable' and 'disable' nor to provide a comment for these enumerations (see IEEE Std 802.3-2002 subclause 30.3.2.1.7 for an example).

Cl **30** *SC* *P* **48** *L* **42** # **422**

James, David JGG

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

Excess capitalization, capitalize only proper nouns

SuggestedRemedy

Multi-Point MAC Control sublayer
==>
multi-point MAC control sublayer

Here and throughout.

Proposed Response *Response Status* **C**

REJECT.

See comment #456.

Cl **30** *SC* *P* **49** *L* **18** # **423**

James, David JGG

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

Excess capitalization, capitalize only proper nouns

SuggestedRemedy

MAC Control sublayer
==>
MAC control sublayer

Here and throughout.

Proposed Response *Response Status* **C**

REJECT.

IEEE P802.3ah is not a stand alone document but instead is a Amendment to IEEE Std 802.3. Due to this IEEE P802.3ah is not able to choose its own style be instead has to be consistent with IEEE 802.3 practice. In this particular case the capitalization follows that of the base standard where this sublayer is specified, Clause 31 of IEEE Std 802.3-2002. Clause 31, which is titled 'MAC Control', consistently uses only the capitalization 'MAC Control'.

Cl **30** *SC* *P* **49** *L* **41** # **424**

James, David JGG

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

Excess capitalization, capitalize only proper nouns

SuggestedRemedy

Logical Link identity (LLID)
==>
logical link identity (LLID)

Here and throughout.

Proposed Response *Response Status* **C**

REJECT.

See comment #457.

Cl **30** *SC* **30.1** *P* **36** *L* **11** # **332**

Grow, Robert Intel

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

The changes are very hard to track against approved amendments, and the source Std should be identified.

SuggestedRemedy

Page 11, lines 21, 35, page 39 line 14, page 41 line 36, insert "(IEEE Std 802.3af-2003)" following "subclause".

Page 11 line 42, page 46 line 36, page 47 lines 10 & 40, insert "(IEEE Std 802.3ae-2002, IEEE Std 802.3af-2003)".

Page 42 line 1, page 45 line 48, page 46 line 7, insert "(IEEE Std 802.3ae-2002)".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.1.2** *P* **36** *L* **32** # **1067**

Law, David 3Com

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

Subclause 30.1.2, as recently updated by IEEE Std 802.3af needs further update as it reference the entity relationship diagrams which we have now split into two, a separate one for DTE and Repeaters.

SuggestedRemedy

Suggest the text for subclause 30.1.2 in IEEE Std 802.3af that reads 'The Entity Relationship Diagrams, Figures 30–3 and 30–4, shows these bindings pictorially.' should be included in IEEE P802.3ah and updated to read 'The Entity Relationship Diagrams, Figures 30–3, 30–4 and 30-5, shows these bindings pictorially.'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.11** *P* *L* # **355**

Squire, Matt Hatteras Networks

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

We seem to have a C30 attribute to cover all information PDU fields except revision number.

SuggestedRemedy

Add aOAmRemoteRevision attribute to reflect the value of the revision field in the most recently received Information OAMPDU.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.11** *P* **59** *L* **37** # **431**

James, David JGG

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

Excess capitalization.
30.11 Management for Operations, Administration and Maintenance

SuggestedRemedy

30.11 Management for Operations, Administration and Maintenance
==>
30.11 Management for operations, administration and maintenance (OAM)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This will be referred to the IEEE publications editor.

Cl **30** *SC* **30.11** *P* **59** *L* **37** # **643**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **A**
Missing comma.

SuggestedRemedy
Add comma after "Administration" on line 37.

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

Cl **30** *SC* **30.11.1.1.10** *P* **62** *L* **31** # **646**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **A**
Punctuation.

SuggestedRemedy
Add "." after "OAMPDU" on line 31.

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

Cl **30** *SC* **30.11.1.1.19** *P* **64** *L* **52** # **356**
Squire, Matt Hatteras Networks

Comment Type **T** *Comment Status* **A**
Not clear how eventNottificationRx can go up by 16000 counts/second.

SuggestedRemedy
Make the increment rate match all of the other OAM PDU counters. Ditto 30.11.1.1.20.

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

Cl **30** *SC* **30.11.1.1.2** *P* **60** *L* **12** # **644**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **A**
Wrong words.

SuggestedRemedy
Change "enable" to "enabled" and "disable" to "disabled" on line 12.

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

Cl **30** *SC* **30.11.1.1.2** *P* **60** *L* **14** # **1072**
Law, David 3Com

Comment Type **E** *Comment Status* **A**
Typo.

SuggestedRemedy
The ';' missing from end of the subclause.

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

Cl **30** *SC* **30.11.1.1.2** *P* **60** *L* **21** # **433**
James, David JGG

Comment Type **T** *Comment Status* **R**
Enumerate values should be capitalized and described.

SuggestedRemedy
List, alphabetize, and describe all enumberated values like the following:
PASSIVE A description of this...
ACTIVE A description...

Proposed Response *Response Status* **C**
REJECT.

IEEE P802.3ah is not a stand alone document but instead is a amendment to IEEE Std 802.3. Due to this, the IEEE P802.3ah Task Force is not able to choose its own Clause 30 MIB syntax but instead has to be consistent with IEEE Std 802.3 Management. IEEE Std 802.3 does not capitalize the Clause 30 Management enumerations except in the case where the enumeration is an acronym or PHY name.

In respect of the request to add comments, these are already provided for these enumerations.

Cl **30** *SC* **30.11.1.1.2** *P* **60** *L* **5** # **432**
James, David JGG

Comment Type **T** *Comment Status* **R**
Enumerated values should be capitalized and described.

SuggestedRemedy
List, alphabetize, and describe all enumberated values like the following:
ENABLED A description of this...
DISABLED A description...

Proposed Response *Response Status* **C**
REJECT.

See comment #421.

Cl **30** *SC* **30.11.1.1.29** *P* **67** *L* **43** # **150**
Russell, Dale MRV Communications

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

The size of the second integer in sequence (four-octets) is smaller than the size of the threshold value specified in 57.5.3.1(e) (eight-octets).

SuggestedRemedy

Revise the sentence to read: The second integer is an eight-octect value...

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.11.1.1.29** *P* **67** *L* **43** # **30001**
Daines, Kevin World Wide Packets

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

Wrong width.

SuggestedRemedy

Change "four" to "eight" on line 43.

Proposed Response *Response Status* **C**

ACCEPT.

This is a duplicate of #666.

Cl **30** *SC* **30.11.1.1.29** *P* **67** *L* **44** # **1073**
Law, David 3Com

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

Typo. Also subclause 30.11.1.1.31, 30.11.1.1.33 & 30.11.1.1.35.

SuggestedRemedy

The ';' missing from end of the subclause. Also subclause 30.11.1.1.31, 30.11.1.1.33 & 30.11.1.1.35.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.11.1.1.31** *P* **68** *L* **16** # **667**
Daines, Kevin World Wide Packets

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

Wrong width.

SuggestedRemedy

Change "four" to "two" on line 16.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.11.1.1.31** *P* **68** *L* **16** # **151**
Russell, Dale MRV Communications

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

The first integer in sequence differs in size (four-octets) with the window value specified in 57.5.3.2(d) (two-octets). Though no values are lost by using a larger size, it seems reasonable to be consistant with the sizing used in the Errored Frame Event TLV.

SuggestedRemedy

Revise the sentence to read: The first integer is a two-octect value...

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.11.1.1.31** *P* **68** *L* **17** # **647**
Daines, Kevin World Wide Packets

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

"100ms" needs a space. Also, the wrong word is used within the behaviour.

SuggestedRemedy

Change "100ms" to read: "100 ms" on page 68, line 18.
Change "100ms" to read: "100 ms" on page 69, line 23.
Change "field" to "value" on page 68, line 18.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.11.1.1.34** *P* **69** *L* **8** # **648**
Daines, Kevin World Wide Packets

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

Wrong number of integers is contained within behaviour.

SuggestedRemedy

Change "two" to read: "four" on page 69, line 8.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.11.1.1.37** *P* **70** *L* **3** # **649**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **A**
Wrong word and grammar problems.

SuggestedRemedy
Change "value field" to read: "respective fields" on page 70, line 3.
Change "field" to read: "fields" on page 70, line 26.
Change "Errors" to read: "Error" on page 70, line 47.
Change "field" to read: "fields" on page 70, line 49.
Change "a" to read: "an" on page 72, line 14.
Change "a" to read: "an" on page 73, line 4.

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

Cl **30** *SC* **30.11.1.1.40** *P* **71** *L* **14** # **668**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **A**
Two field names are missing "Summary".

SuggestedRemedy
Change "Errored Frame Seconds Window"
to read "Errored Frame Seconds Summary Window" on line 14.

Change "Errored Frame Seconds Threshold"
to read "Errored Frame Seconds Summary Threshold" on line 15.

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

Cl **30** *SC* **30.11.1.1.40** *P* **71** *L* **29** # **1074**
Law, David 3Com

Comment Type **E** *Comment Status* **A**
Typo. Also 30.12.1.5.

SuggestedRemedy
The '.' missing from end of the subclause, ';' should read '.;'. Also 30.12.1.5.

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

Cl **30** *SC* **30.11.1.1.5** *P* **60** *L* **52** # **645**
Daines, Kevin World Wide Packets

Comment Type **TR** *Comment Status* **A**
Typo and missing text.

SuggestedRemedy
Change "three" to "eight" on page 60, line 52.

Add "as specified in Table 57-4" after "code" on page 61, line 13.

Add "as specified in Table 57-4" after "code" on page 61, line 30.

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

Cl **30** *SC* **30.11.1.1.5** *P* **60** *L* **52** # **353**
Squire, Matt Hatteras Networks

Comment Type **T** *Comment Status* **A**
Doesn't match table 57-8 (e.g. more than 3-bits)

SuggestedRemedy
Match up with table 57-8 after comments on 57-8 are resolved.

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

Cl **30** *SC* **30.11.1.1.7** *P* **61** *L* **42** # **830**
Russell, Dale MRV Communications

Comment Type **E** *Comment Status* **A**
The ordering of the stability bits in aOAMLocalFlagsField, fourth is Local Stable and fifth is Remote Stable, reverses the ordering of the corresponding bits declared in Table 57-3 (Flags field). This contradicts the preserved ordering of the other flag bits.

SuggestedRemedy
Change the last two sentences of BEHAVIOR DEFINED AS to read:

The fourth bit corresponds to the Remote Stable bit in the Flags field. The fifth bit corresponds to the Local Stable bit in the Flags field.;

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

Cl **30** *SC* **30.11.1.1.7** *P* **61** *L* **42** # **354**

Squire, Matt — Hatteras Networks

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

The order of these bits (remote/local stable) is different than in table 57-3.

SuggestedRemedy

Reverse the order of local/remote stable. Ditto 30.11.1.1.8.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.11.1.1.8** *P* **62** *L* **1** # **831**

Russell, Dale — MRV Communications

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

The ordering of the stability bits in aOAMRemoteFlagsField, fourth is Local Stable and fifth is Remote Stable, reverses the ordering of the corresponding bits declared in Table 57-3 (Flags field). This contradicts the preserved ordering of the other flag bits.

SuggestedRemedy

Change the last two sentences of BEHAVIOR DEFINED AS to read:

The fourth bit corresponds to the Remote Stable bit in the Flags field. The fifth bit corresponds to the Local Stable bit in the Flags field.;

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.2** *P* **39** *L* **12** # **82**

Dawe, Piers — Agilent

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

There seems to be a hierarchy problem: bookmarks 30.2.3, 30.2.5 and 30.3.5 are shown under 30.1, and 30.3.1.x under 30.2.5.

SuggestedRemedy

Please fix.

Proposed Response *Response Status* **C**

REJECT.

This is caused by the fact that the subclauses heading that are higher up in the hierarchy are not present as there are no changes required for IEEE P802.3ah to these subclauses.

To fix this would require a significant amount of manual intervention for each draft produced.

Cl **30** *SC* **30.2.2.1** *P* **37** *L* **27** # **632**

Daines, Kevin — World Wide Packets

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

The text "outside the scope of this International Standard" is used several places. See page 37, lines 27, 37, 53. However, on the following page, lines 16, 32, 51, the text "outside the scope of this standard" is used. We should probably make this consistent.

SuggestedRemedy

Choose one phrase and make consistent.

Proposed Response *Response Status* **C**

REJECT.

The text '... this International Standard ...' appears in a paragraph that shows no change from the existing text and therefore is out of scope for this ballot.

Cl **30** *SC* **30.2.3** *P* **39** *L* **21** # **633**

Daines, Kevin — World Wide Packets

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

It appears a strikethrough is missing.

SuggestedRemedy

Add strikethrough over the numberal "4" on line 21.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.2.5** *P* **42** *L* **21** # **1250**

Thaler, Pat — Agilent

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

aRateControlConfig should not be mandatory. Many existing MACs do not support rate control and won't have the package. There is no justification for making the rate control package mandatory for MACs without rate control capability.

SuggestedRemedy

Make the package optional or make it conditionally mandatory for DTEs that support rate control.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The attribute aRateControlConfig will be deleted due to the change to using the half duplex 1 Gb/s MAC in PtMP. This change means that rate control for FEC will now be performed using carrier sense and deferral as is currently defined in Clause 61 therefore all changes to Clause 4 are being removed from IEEE P802.3ah.

Cl **30** *SC* **30.3.1.1.20** *P* **45** *L* **44** # **1251**

Thaler, Pat — Agilent

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

Not clear why this change was made. The MAC either operates in half-duplex or full-duplex. Clause 4 has not been changed to add any other modes. Also, the change makes the construction unnecessarily confusing.
"The contents of this attribute are defined only for MAC entities operation in half-duplex mode.;" would be better.

SuggestedRemedy

Either remove the change or improve the wording as suggested above.

Proposed Response *Response Status* **C**

ACCEPT.

See comment #971.

Cl **30** *SC* **30.3.1.1.31** *P* **45** *L* **54** # **1252**

Thaler, Pat — Agilent

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

If a new mode for the MAC is being introduced, then the MAC clause needs to say something about it. Also, note that process deference for a MAC in half duplex defers during carrier sense so when a receive has started, it will not transmit.

SuggestedRemedy

If an operational mode is being added for the MAC, do it properly in the MAC clause.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This enumeration will be removed.

Cl **30** *SC* **30.3.1.1.33** *P* **46** *L* **32** # **1069**

Law, David — 3Com

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

Typo.

SuggestedRemedy

The ';' missing from end of the subclause.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.1.1.35** *P* **46** *L* **33** # **635**

Daines, Kevin — World Wide Packets

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

Grammar.

SuggestedRemedy

Change "enable" to read "enabled" on line 32.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.1.20** *P* **45** *L* **44** # **971**

Thompson, Geoff — Nortel

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

Remove change. It is unnecessary as:
there are no new "modes" proposed for 1.4 that I find
A PON needs this counter because it is a "A mode of operation ... in which DTEs contend for access to a shared medium. (ref 1.4.139)

SuggestedRemedy

Remove change

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

As described in subclause 61.1.4.1.1 'Summary of MAC-PHY Rate Matching specification', the 2BASE-TL/10PASS-TS PCS matches the MAC's rate of data transmission to the transmission data rate of the medium, if slower, through the use of deference function as defined in 4.2.3.2.1.

This Rate Matching function can cause excessive deferrals which will result in the excessive deferral counter being incremented as reported in the aFramesWithExcessDeferral attribute. Hence as with full duplex operation, the contents are also undefined when operating with a 2BASE-TL or 10PASS-TS PHY.

Based on accepting that references to any new MAC mode should be removed (comment #972) the last sentence of 30.3.1.1.20 should be changed to read 'The contents of this attribute are undefined for MAC entities operating in full duplex mode and also when connected to a PHY utilizing the MAC-PHY Rate Matching defined in 61.1.4.1.1.;'

Note: Commenter thinks this is okay but wants this to be review in detail during the re-circulation.

Cl **30** *SC* **30.3.1.20** *P* **45** *L* **54** # **972**

Thompson, Geoff — Nortel

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

Proposed change is not technically correct/complete and its addition would mess up the existing standard unbelieveably as the existing standard uses the term full duplex for full duplex and dual simplex interchangeably (and not always strictly correctly). In order to properly implement this change every single instance of "duplex" within 802.3 would have to be examined and redone. This unnecessary change to the exisitng standard would cause massive confusion to those users of the standard unconcerned with EFM.
Further, the proposed syntax definition is redundant as most 10/100 existing 802.3 systems operate "in half duplex mode with simultaneous receive and transmit".
Also, no definition in 1.4 for this proposed mode.

SuggestedRemedy

Remove change

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **46** *L* **44** # **349**

Squire, Matt — Hatteras Networks

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

2BASE-TL has modes of up to 5.6Mbps.

SuggestedRemedy

Change 3 Mbps to 5.5 Mbps. Ditto P47 L18.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **46** *L* **44** # **1091**

Law, David — 3Com

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

The aPhyType should contain a description of the PCS but should not contain a references to PMDs.

SuggestedRemedy

Change the text '2BASE-TL Clause 61 and Clause 63 0.5 Mb/s to 3 Mb/s TC-PAM' to read '2BASE-TL Clause 61 0.5 Mb/s to 3 Mb/s 64B65B' and the text '10PASS-TS Clause 61 and Clause 62 2.5 Mb/s to 100 Mb/s' to read '10PASS-TS Clause 61 2.5 Mb/s to 100 Mb/s 64B65B'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the text to read '2BASE-TL Clause 61 and Clause 63 0.5 Mb/s to 3 Mb/s TC-PAM' to read '2BASE-TL Clause 61 0.5 Mb/s to 3 Mb/s 64/65-octet' and the text '10PASS-TS Clause 61 and Clause 62 2.5 Mb/s to 100 Mb/s' to read '10PASS-TS Clause 61 2.5 Mb/s to 100 Mb/s 64/65-octet'.

Cl **30** *SC* **30.3.2.1.2** *P* **46** *L* **44** # **636**

Daines, Kevin — World Wide Packets

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

Missing space.

SuggestedRemedy

Add space between "61" and "and" on line 44.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **47** *L* **18** # **1068**

Law, David — 3Com

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

The aPhyTypeList should contain a description of the PCS but should not contain a references to PMDs.

SuggestedRemedy

Change the text '2BASE-TL Clause 61 and Clause 63 0.5 Mb/s to 3 Mb/s TC-PAM' to read '2BASE-TL Clause 61 0.5 Mb/s to 3 Mb/s 64B65B' and the text '10PASS-TS Clause 61 and Clause 62 2.5 Mb/s to 100 Mb/s' to read '10PASS-TS Clause 61 2.5 Mb/s to 100 Mb/s 64B65B'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #1091.

Cl **30** *SC* **30.3.2.1.5** *P* **47** *L* **37** # **1047**

Law, David 3Com

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

Remove all text realted to aSymbolErrorDuringCarrier. There is no change provided and for the following reason I belive no change is required:

The final definition of the EFM PHYs, with the exception of 10PASS-TS and 2BASE-TL, are all built upon existing PCSs and therefore the existing text is correct. Since this attribute is part of the '100/1000 Mb/s Monitor Capability (Optional)' (see Table 30-1b in IEEE Std 802.3-2002) it does not apply to the 10PASS-TS and 2BASE-TL PHYs. Now I guess that an argument could be made that a attribute similar to symbol errors during carrier could be added for the 10PASS-TS and 2BASE-TL PHYs however these PHYs also support FEC. Hence a 'symbol errors' on these PHYs will result in either a FEC correctable or uncorrectable error. In this cases therefore one of two new attributes that have been added will increment, either subclause 30.5.1.1.4 aFECCorrectedBlocks or subclause 30.5.1.1.15 aFECUncorrectableBlocks.

SuggestedRemedy

Remove all text realted to aSymbolErrorDuringCarrier.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The 2BASE-TL PHY does not support FEC however, as stated, this attribute is part of the '100/1000 Mb/s Monitor Capability (Optional)' (see Table 30-1b in IEEE Std 802.3-2002) hence it does not apply to the 10PASS-TS and 2BASE-TL PHYs so no change is necessary.

Cl **30** *SC* **30.3.2.1.5** *P* **47** *L* **39** # **973**

Thompson, Geoff Nortel

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

Can't see difference from old/approved text

Or the changed text has not yet been provided

Or this shouldn't be in the draft.

SuggestedRemedy

Add edit/compare marks if the presented text is not the same as in the existing standard.
-OR-
If the text does need to be changed and it has not yet been developed and approved byt the Task Force then the ballot should be disqualified for lack of presentation of a technically complete draft.
-OR-
If the text does not need to be changed then this subclause should be deleted from the draft.

Proposed Response *Response Status* **C**

ACCEPT.

All text related aSymbolErrorDuringCarrier will be removed from the IEEE P802.3ah draft.

The final definition of the EFM PHYs, with the exception of 10PASS-TS and 2BASE-TL, are all built upon existing PCSs and therefore the existing text is correct. Since this attribute is part of the '100/1000 Mb/s Monitor Capability (Optional)' (see Table 30-1b in IEEE Std 802.3-2002) it does not apply to the 10PASS-TS and 2BASE-TL PHYs.

Cl **30** *SC* **30.3.2.1.5** *P* **47** *L* **40** # **839**

Brand, Richard Nortel Networks

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

Where is the changed text?

SuggestedRemedy

Highlight/identify text change

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

There are no text changes required and this subclause was included in error. All text related aSymbolErrorDuringCarrier will be removed from the IEEE P802.3ah draft.

The final definition of the EFM PHYs, with the exception of 10PASS-TS and 2BASE-TL, are all built upon existing PCSs and therefore the existing text is correct. Since this attribute is part of the '100/1000 Mb/s Monitor Capability (Optional)' (see Table 30-1b in IEEE Std 802.3-2002) it does not apply to the 10PASS-TS and 2BASE-TL PHYs.

Cl **30** *SC* **30.3.2.1.5** *P* **47** *L* **40** # **637**

Daines, Kevin World Wide Packets

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

This subclause does not appear to have changed, at least from 802.3ae. Shouldn't this be removed from .ah?

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.5** *P* **47** *L* **46** # **350**

Squire, Matt Hatteras Networks

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

Does this counter have any application to 10PASS-TS or 2BASE-TL?

SuggestedRemedy

Add:
This counter has no meaning for operation on 10PASS-TS and 2BASE-TL PHYs.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This attribute is part of the '100/1000 Mb/s Monitor Capability (Optional)' (see Table 30-1b in IEEE Std 802.3-2002) hence it does not apply to the 10PASS-TS and 2BASE-TL PHYs. Therefore while it does not have application to 10PASS-TS and 2BASE-TL no change is required either.

Cl **30** *SC* **30.3.5** *P* **48** *L* **27** # **974**

Thompson, Geoff Nortel

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

No provision for subclause in preceeding material in this clause, e.g. 30.2.2.1, 30.2.3

SuggestedRemedy

Remove all of 30.3.5

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Subclause 30.2.2.1 and 30.2.3 were not updated as these don't show the existing instance of oMACControlFunctionEntity, the oPAUSEEntity object. See subclause 30.3.4 'PAUSE entity managed object class'.

On further consideration this doesn't seem correct and subclause 30.2.2.1 and 30.2.3 will be updated to include the oMPCP object as well as the oPAUSEEntity object however subclause 30.3.5 will not be removed.

Cl **30** *SC* **30.3.5** *P* **52** *L* **1** # **939**

Floyd, Gerhardt Cisco Systems

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

Attributes 30.5.1.1.2, 30.5.1.1.4, and 30.5.1.1.12-.24 are defined under the MPCP managed object class, however none of these attributes use MPCP in their naming as all of the other attributes and actions do.

SuggestedRemedy

Rename Attributes 30.5.1.1.2, 30.5.1.1.4, and 30.5.1.1.12-.24 to include aMPCP before the descriptive text.

For example 30.5.1.1.2 should be renamed to aMPCPMAUType.

Proposed Response *Response Status* **C**

REJECT.

These attributes are not new attributes under the subclause 30.3.5 'MPCP managed object class' but are instead changes to existing attributes under the subclause 30.5.1.1 'MAU attributes' (see IEEE Std 802.3-2002).

Cl **30** *SC* **30.3.5.1.1** *P* **48** *L* **45** # **638**

Daines, Kevin World Wide Packets

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

Wrong words.

SuggestedRemedy

Change "enable" to "enabled" on line 45.
Change "disable" to "disabled" on line 46.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.5.1.11** *P* **51** *L* **9** # **845**

Arnold, Brian Cisco Systems

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

Text in Behaviour section could be improved slightly.

SuggestedRemedy

Replace Behaviour section with:

A count of discovery windows generated. The counter is incremented by one for each generated discovery window.;

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.5.1.12** *P* **51** *L* **20** # **846**

Arnold, Brian — Cisco Systems

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

Text in Behaviour section could be improved slightly.

SuggestedRemedy

Replace Behaviour section with:

A count of number of attempts to perform registration. The counter is incremented by one for each registration attempted.;

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.5.1.13** *P* **51** *L* **31** # **847**

Arnold, Brian — Cisco Systems

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

Text in Behaviour section could be improved slightly.

SuggestedRemedy

Replace Behaviour section with:

A count of the number of times a discovery timeout occurs. The counter is incremented by one for each discovery processing state-machine reset resulting from timeout waiting for message arrival.;

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.5.1.2** *P* **49** *L* **6** # **639**

Daines, Kevin — World Wide Packets

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

Grammar.

SuggestedRemedy

Remove "be".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.5.1.7** *P* **50** *L* **10** # **425**

James, David — JGG

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

Enumerate values should be capitalized and described.

SuggestedRemedy

List and describe:
UNREGISTERED
REGISTERING
REGISTERED

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Comments will be added to these enumerations

However IEEE P802.3ah is not a stand alone document but instead is a amendment to IEEE Std 802.3. Due to this, the IEEE P802.3ah Task Force is not able to choose its own Clause 30 MIB syntax but instead has to be consistent with IEEE Std 802.3 Management. IEEE Std 802.3 does not capitalize the Clause 30 Management enumerations except in the case where the enumeration is an acronym or PHY name.

Cl **30** *SC* **30.3.5.1.8** *P* **50** *L* **30** # **1070**

Law, David — 3Com

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

Typo.

SuggestedRemedy

The '.' missing from end of the subclause, ';' should read '.;'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.5.2** *P* **52** *L* **1** # **938**

Floyd, Gerhardt — Cisco Systems

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

Attributes 30.5.1.1.2, 30.5.1.1.4, and 30.5.1.1.12-.24 are defined under Section 30.3.5.2

SuggestedRemedy

Renumber the attributes to fit the numbers under their appropriate section.

Proposed Response *Response Status* **C**

REJECT.

These attributes are not defined under the subclause 30.3.5.2 but are instead changes to existing attributes in IEEE Std 802.3-2002 as the editing instructions at the start of these clauses state 'Change this subclause as follows:'. See also 'Editing instructions' on page 35.

Cl **30** *SC* **30.3.5.2** *P* **52** *L* **1** # **937**

Floyd, Gerhardt — Cisco Systems

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

Section 30.3.5.2 is labeled MPCP Actions, however starting with 30.5.1.1.2 on page 52, line 1 and continuing through 30.5.1.1.24 on page 59, line 14 the variables are defined as attributes, not actions.

SuggestedRemedy

Move 30.5.1.1.2, 30.5.1.1.4, and 30.5.1.1.12-.24 to section 30.3.5.1 which defines the MPCP Attributes.

Proposed Response *Response Status* **C**

REJECT.

These attributes are not new actions under the subclause 30.3.5.2 MPCP Actions but are instead changes to existing attributes under the subclause 30.5.1.1 MAU attributes (see IEEE Std 802.3-2002).

Cl **30** *SC* **30.3.5.2.1** *P* **51** *L* **51** # **850**

Arnold, Brian — Cisco Systems

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

List the enumerated values for acMPCPAdminControl syntax, rather than say they're the same as aMPCPAdminState.

SuggestedRemedy

In the Syntax section, replace:

Same as aMPCPAdminState

with:

An ENUMERATED VALUE that has the following entries:
enabled
disabled

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This will be formatted as required.

Cl **30** *SC* **30.5.1.1.12** *P* **55** *L* **29** # **427**

James, David — JGG

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

Enumerate values should be capitalized and described.

SuggestedRemedy

List and describe:
SUBSCRIBER
OFFICE

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #425.

Cl **30** *SC* **30.5.1.1.12** *P* **55** *L* **32** # **1253**

Thaler, Pat — Agilent

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

According to the table, this attribute applies to all subscriber access MAUs, but the description appears to apply only to Clause 61 PCS and many of the other EFM Phys can't change sides through configuration.

A similar concern applies to aPCSCodingViolation - it is only defined for a subset of EFM PHYs.

SuggestedRemedy

Change aPHYSide to a package that is only for Clause 61 devices. Change aPCSCodingViolation to a package that is only for the appropriate PHYs.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The aPHYSide attribute will be placed in the 10PASS-TS/2BASE-TL Package. The aPCSCodingViolation attribute will be placed in the 100/1000 Mb/s Monitor Capability package.

Cl **30** *SC* **30.5.1.1.13** *P* **55** *L* **37** # **351**

Squire, Matt — Hatteras Networks

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

Does this counter have any applicability to 10PASS-TS/2BASE-TL PHYs?

SuggestedRemedy

Could be:

For 10PASS-TS and 2BASE-TL PHYS, it is a count of the TPS-TC CRC errors as defined in 45.2.3.17.

Proposed Response *Response Status* **C**

REJECT.

The aPCSCodingViolation counter is intended to record errors on symbol by symbol basis. Using a TPS-TC CRC error would be more similar to recording symbol error during carrier as multiple symbol errors on a segment will cause only a single TPS-TC CRC error to be recorded.

Cl **30** *SC* **30.5.1.1.13** *P* **55** *L* **37** # **976**

Thompson, Geoff — Nortel

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

This counter is redundant to the existing counter defined in 30.3.2.1.5, aSymbolErrorDuringCarrier. Further, it is difficult to read and implement as it operates at (almost) data bit rate. Operating at this speed and its resultant potential for large counts with low meaning is contrary to the established philosophy of 802.3 Layer Management.

SuggestedRemedy

Remove proposed counter and use the existing one to capture the required information.

Proposed Response *Response Status* **U**

REJECT.

The aPCSCodingViolation counter was added in support of the OAM Link Monitoring objective to provide a more accurate measure of the link error rate.

This counter is not a duplicate of aSymbolErrorDuringCarrier since the aSymbolErrorDuringCarrier counter will only increment once regardless of the number of symbol errors during a packet, the aPCSCodingViolation will be incremented once for each symbol error during a packet.

In respect to the increment rate it is no faster than the current subclause 30.5.1.1.11 aIdleErrorCount which is supported by both 100BASE-T2 and 1000BASE-T and can therefore increment at symbol rate for these PHYs as well.

Y: 7
N: 0
A: 0

Cl **30** *SC* **30.5.1.1.13** *P* **55** *L* **46** # **848**

Arnold, Brian — Cisco Systems

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

Grammar in Behaviour section could be improved slightly.

SuggestedRemedy

Replace second sentence in Behaviour section (lines 45-46) with:

For 1000 Mb/s operation it is a count of the number of times an invalid code-group is received, other than the /V/ code-group.;

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The entire behaviour of this attribute is being updated so that it operates from the MII/GMII signals.

Cl **30** *SC* **30.5.1.1.14** *P* **55** *L* **46** # **640**

Daines, Kevin — World Wide Packets

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

Typo.

SuggestedRemedy

Change "groups received" to "group is received" on line 46.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.14** *P* **55** *L* **49** # **977**

Thompson, Geoff — Nortel

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

This counter operates at (almost) data bit rate, worst case. Operating at this speed and its resultant potential for large counts with their resultant low meaning is contrary to the established philosophy of 802.3 Layer Management.

SuggestedRemedy

Modify the behavior to capture the information in a smaller counter that operates at packet rate or less.

Proposed Response *Response Status* **Z**

WITHDRAWN.

Cl **30** *SC* **30.5.1.1.14** *P* **56** *L* **2** # **708**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**
2BASE-TL does not have FEC.

SuggestedRemedy
Remove 2BASE-TL from line 2.

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

Cl **30** *SC* **30.5.1.1.14** *P* **56** *L* **3** # **641**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **A**
Improper capitalization.

SuggestedRemedy
Change "Types" to "types" on line 3 and line 17.

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

Cl **30** *SC* **30.5.1.1.15** *P* **56** *L* **16** # **709**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**
2BASE-TL does not have FEC.

SuggestedRemedy
Remove 2BASE-TL from line 16.

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

Cl **30** *SC* **30.5.1.1.15** *P* **56** *L* **7** # **978**
Thompson, Geoff Nortel

Comment Type **TR** *Comment Status* **D**
This counter operates at (almost) data bit rate, worst case. Operating at this speed and its resultant potential for large counts with their resultant low meaning is contrary to the established philosophy of 802.3 Layer Management.

SuggestedRemedy
Modify the behavior to capture the information in a smaller counter that operates at packet rate or less.

Proposed Response *Response Status* **Z**
WITHDRAWN.

Cl **30** *SC* **30.5.1.1.16** *P* **56** *L* **21** # **979**
Thompson, Geoff Nortel

Comment Type **TR** *Comment Status* **A**
This counter operates at (almost) data bit rate, worst case. Operating at this speed and its resultant potential for large counts with their resultant low meaning is contrary to the established philosophy of 802.3 Layer Management. Further, it is derivable count from the previous 3. It is generally our policy to minimize the number of counters and let higher layer applications do the derivation of additional statistics.

SuggestedRemedy
Remove.

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

Cl **30** *SC* **30.5.1.1.16** *P* **56** *L* **30** # **1254**
Thaler, Pat Agilent

Comment Type **TR** *Comment Status* **A**
Since this is in the FEC Package group, this appears to apply only to 1000BASE_PX PHYs, but the language doesn't say that, nor does it say what this counter does for the other FEC PHYs - presumably it doesn't increment. The name of the attribute appears to have nothing to do with its description. Give it a better name and provide a reference to the clause where this is described.

SuggestedRemedy
Make the definition and name of this attribute consistant with its use in the FEC package.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment #979. This attribute will be removed.

Cl **30** *SC* **30.5.1.1.17** *P* **56** *L* **40** # **428**
James, David JGG

Comment Type **T** *Comment Status* **A**
Enumerate values should be capitalized and described.

SuggestedRemedy
List, alphabetize, and describe all enumberated values like the following:
NO_DEFECT A description of this...
LOSS_OF_FRAME A description...

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment #425.

Cl **30** *SC* **30.5.1.1.18** *P* **57** *L* **1** # **1255**

Thaler, Pat — Agilent

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

This comment applies to most of the attributes in the 10PASS-TS/2BASE-TL package. Many of these attributes are defined for only one of the 2 PHY types served by this package, but since a whole package must be supported, the devices will have to respond to all of them.

SuggestedRemedy

Either split these into two packages or state the behavior of the attribute for the other PHY type.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Two new package will be created, one for 10PASS-TS only attributes and one for 2BASE-TL attributes. Attributes comment to both PHYs will remain in the current package.

Cl **30** *SC* **30.5.1.1.18** *P* **57** *L* **10** # **352**

Squire, Matt — Hatteras Networks

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

Don't we want to read the SNRM for 10PASS-TS PHYs as well as 2BASE-TL PHYs?

SuggestedRemedy

Make applicable to both copper PHY types.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.18** *P* **57** *L* **9** # **1071**

Law, David — 3Com

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

Typo.

SuggestedRemedy

The ';' missing from end of the subclause.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.18** *P* **57** *L* **9** # **642**

Daines, Kevin — World Wide Packets

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

Missing punctuation.

SuggestedRemedy

Add ".;" after "(see 63.3)" on line 9.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.18** *P* **57** *L* **9** # **849**

Arnold, Brian — Cisco Systems

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

Need semicolon.

SuggestedRemedy

Need semicolon at end of Behaviour section.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.19** *P* **56** *L* **40** # **429**

James, David — JGG

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

Enumerate values should be capitalized and described.

SuggestedRemedy

List, alphabetize, and describe all enumberated values like the following:
PROFILE_1
PROFILE_2

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #430.

Cl **30** *SC* **30.5.1.1.2** *P* **55** *L* **24** # **975**

Thompson, Geoff Nortel

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

Defines ends of an asymmetrical network rather than peer.

SuggestedRemedy

Move asymmetrical proposals to a new and separate document that can thoroughly, explicitly and unambigiously embrace the concept of Ethernet Services over asymetrical infrastructure.

Proposed Response *Response Status* **U**

REJECT.
See comments #952, #837 & #1167.

For further information regarding document restructuring, see the file:

http://www.ieee802.org/3/efm/public/sep03/frazier_1_0903.pdf

Cl **30** *SC* **30.5.1.1.22** *P* **58** *L* **27** # **430**

James, David JGG

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

Enumerate values should be capitalized and described.

SuggestedRemedy

List, alphabetize, and describe all enumberated values like the following:
PROFILE_1
PROFILE_2

Also, _don't_ use the same name here and anywhere else, including before and after listings. Common C style is to precede the listing, with something like:
MP_PROFILE_1

Profile context may not always be obvious, so distinct names are the least that the editor can do on behalf of the readers.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

However IEEE P802.3ah is not a stand alone document but instead is a amendment to IEEE Std 802.3. Due to this, the IEEE P802.3ah Task Force is not able to choose its own Clause 30 MIB syntax but instead has to be consistent with IEEE Std 802.3 Management. IEEE Std 802.3 does not capitalize the Clause 30 Management enumerations except in the case where the enumeration is an acronym or PHY name.

In the case of the profile attributes these will all be changed to the syntax INTEGER. For example the aBandplanPSDMaskProfile attribute will be an integer that indicates the number of the Bandplan PSD profile defined in 62A.3.1.

Cl **30** *SC* **30.5.1.1.4** *P* **54** *L* **3** # **426**

James, David JGG

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

Enumerated values should be capitalized iniformly.

SuggestedRemedy

Change to caps and alphabetize the following:

OTHER undefined
UNKNOWN initializing, true state not yet known
AVAILABLE link or light normal, loopback normal
NOT_AVAILABLE link loss or low light, no loopback
REMOTE_FAULT remote fault with no detail
INVALID_SIGNAL invalid signal, applies only to 10BASE-FB
REMOTE_JABBER remote fault, reason known to be jabber
REMOTE_LINK_LOSS loss remote fault, reason known to be far-end link loss
REMOTE_TEST remote fault, reason known to be test
OFFLINE offline, applies only to Clause 37 Auto-Negotiation
AUTO_NEG_ERROR Auto-Negotiation Error, applies only to Clause 37 Auto-Negotiation
PMD_LINK_FAULT PMD/PMA receive link fault
WIS_FRAME_LOSS WIS loss of frame, applies only to 10GBASE-W
WIS_SIGNAL_LOSS WIS loss of signal, applies only to 10GBASE-W
PCS_LINK_FAULT PCS receive link fault
excessive BER PCS Bit Error Rate monitor reporting excessive error rate
DXS_LINK_FAULT DTE XGXS receive link fault, applies only to XAUI
PXS_LINK_FAULT PHY XGXS transmit link fault, applies only to XAUI

Proposed Response *Response Status* **C**

REJECT.

The editing instruction state that subclause 30.5.1.1.4 should be changed as follows hence this is an existing subclause in IEEE Std 802.3-2002 and changed text is annotated by strikeout and underscores.

Even if we could changed the unchanged text IEEE P802.3ah is not a stand alone document but instead is a amendment to IEEE Std 802.3. Due to this, the IEEE P802.3ah Task Force is not able to choose its own Clause 30 MIB syntax but instead has to be consistent with IEEE Std 802.3 Management. IEEE Std 802.3 does not capitalize the Clause 30 Management enumerations except in the case where the enumeration is an acronym or PHY name.

Cl **30** *SC* **Figure 30-4** *P* **41** *L* **1** # **415**

James, David JGG

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

Inconsistent capitalization

SuggestedRemedy

existing Figures as required
==>
existing figures as required

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **Figure 30-4** *P* **41** *L* **1** # **416**

James, David JGG

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

Complete the specification

SuggestedRemedy

Complete the specification, rather than talking about what is incomplete.

Proposed Response *Response Status* **C**

REJECT.

IEEE P802.3ah is not a stand alone document but instead is a amendment to IEEE Std 802.3. The text 'Renumber existing figures as required:' is an instruction to readers and to the IEEE publications editor on how to merge changes from this amendment into an existing clause of the approved standard and is not an indication of any lack of completeness of the draft.

Cl **30** *SC* **Table 30-1b** *P* **42** *L* **22** # **417**

James, David JGG

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

Table should not have a clear bottom row; that looks funny.
In some cases, this is due to starting with a buggy IEEE table format.

SuggestedRemedy

Change to get bottom-of-row "very thin" line, here and throughout.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

It is not clear what the correct style is here since the existing published base standard IEEE Std 802.3-2002 on page 91 Table 23-4 uses this format. Will confirm with IEEE staff editor what the correct style to be used here is.

Cl **30** *SC* **Table 30-5** *P* **43** *L* **17** # **634**

Daines, Kevin World Wide Packets

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

The OAM column should ideally read "Operations, Administration and Maintenance". If that is too long, "Operations, Administration, Maintenance" could be substituted. Either way, at least two commas are missing.

SuggestedRemedy

Add the missing commas as noted above. Same table header continued on page 44 and 45.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will change the package name to be OAM.

Cl **30A** *SC* **30A.15.2** *P* **136** *L* **34** # **1078**

Law, David 3Com

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

The registration arc for aWISID [iso(1) member-body(2) us(840) ieee802dot3(10006) csmacdmgt(30) attribute(7) wisID(182)] is a duplicate of the registration arc for aSectionStatus [{iso(1) member-body(2) us(840) ieee802dot3(10006) csmacdmgt(30) attribute(7) sectionStatus(182)}]. Since Clause 57 OAM utilizes registration arcs to remotely access attributes this should really be fixed by IEEE P802.3ah

SuggestedRemedy

Add a change to IEEE P802.3ah to correct the registration arc for aWISID to be [iso(1) member-body(2) us(840) ieee802dot3(10006) csmacdmgt(30) attribute(7) wisID(181)].

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30A** *SC* **30A.19** *P* **136** *L* **37** # **1086**

Law, David 3Com

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

All subclauses after this point are incorrectly number, the following subclause is 30A.1.1, then 30A.1.1, then 30A.19.

SuggestedRemedy

Correct the subclause numbering.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30B** *SC* **30B.2** *P* **150** *L* **14** # **1092**

Law, David 3Com

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

A number of the values related to the new PHY TypeValue enumeration need updated to reflect the clauses numbers correctly. The comments related to the enumerations also need updated to reference the correct Clauses.

SuggestedRemedy

Suggest that:-

'100BASE-BX10D (601), --Simplex fiber OLT PHY as specified in Clause 60' should read '100BASE-BX10D (581), --Simplex fiber OLT PHY as specified in Clause 58',

'100BASE-BX10U (602), --Simplex fiber ONU PHY as specified in Clause 60' should read '100BASE-BX10U (582), --Simplex fiber ONU PHY as specified in Clause 58',

'100BASE-LX10 (60) --Duplex fiber PHY as specified in Clause 60' should read '100BASE-LX10 (58) --Duplex fiber PHY as specified in Clause 58',

'1000BASE-PX10D (581), --Simplex fiber OMP OLT 10Km PHY as specified in Clause 58' should read '1000BASE-PX10D (601), --Simplex fiber OMP OLT 10Km PHY as specified in Clause 60',

'1000BASE-PX10U (582), --Simplex fiber OMP ONU 10Km PHY as specified in Clause 58' should read '1000BASE-PX10U (602), --Simplex fiber OMP ONU 10Km PHY as specified in Clause 60',

'1000BASE-PX20D (583) --Simplex fiber OMP OLT 20Km PHY as specified in Clause 58' should read '1000BASE-PX20D (603) --Simplex fiber OMP OLT 20Km PHY as specified in Clause 60' and

'1000BASE-PX20U (584), --Simplex fiber OMP ONU 20Km PHY as specified in Clause 58' should read '1000BASE-PX20U (604), --Simplex fiber OMP ONU 20Km PHY as specified in Clause 60'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **31A** *SC* *P* **156** *L* **21** # **576**

Booth, Brad Intel

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

There is no indication of the edits that were performed on this text.

SuggestedRemedy

The editor must show the edits made to this text so that the IEEE editor can make the correct changes.

Proposed Response *Response Status* **C**

ACCEPT.
Edit markers shall be reintroduced to compare changes from IEEE802.3-2002

Cl **31A** *SC* *P* **157** *L* **2** # **262**

Tom Mathey Independent

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

Double colons vs period.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.

Cl **31A** *SC* *P* **157** *L* **22** # **577**

Booth, Brad Intel

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

Format of Table 31A-3 & 31A-6 need fixing on the line weights.

SuggestedRemedy

In 31A-3, there should be a thicker line between indication_operand_list element and start. Same applies to the left line and bottom line for the table cell containing discovery.

In 31A-6, the left line and bottom line for the table cell containing ID should be thicker.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **31A** *SC* **31A** *P* **155** *L* **6** # **1087**

Law, David 3Com

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

The change instruction do not follow the latest version found in the IEEE Style manual. The same is true for Annex 43B

SuggestedRemedy

Update the change instruction for 31A and 43B to include the four instructions, Change, Delete, Insert and Replace. See introduction to Clause 46 for example.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **31A** *SC* **31A** *P* **156** *L* **22** # **84**
Dawe, Piers Agilent

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

Please mark this annex up or provide editor's note to distinguish old and new material.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See 576

Cl **31A** *SC* **31A** *P* **156** *L* **7** # **1088**
Law, David 3Com

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

Need to add editing instructions.

SuggestedRemedy

Add the text 'Replace Table 31A-1 with the following:'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **31A** *SC* **Table** *P* **159** *L* **15** # **199**
Murakami, Ken Mitsubishi Electric

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

In Table 31A-6, "RTT" is defined as one of indication_operand_list elements for REGISTER MAC Control indications. However, RTT is not measured on the receipt of REGISTER message. Therefore, this element is not necessary.

SuggestedRemedy

"RTT" should be removed from Table 31A-6.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **31A** *SC* **Table 31A-1** *P* **156** *L* **16** # **1089**
Law, David 3Com

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

Typo.

SuggestedRemedy

Please size the column so that 'Hexadecimal' is not hyphenated

Proposed Response *Response Status* **C**

ACCEPT.

Cl **31A** *SC* **Table 31A-3** *P* **157** *L* **18** # **263**
Tom Mathey Independent

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

Table 31A-1 has a column labeled "Timestamp" to indicate that opcodes 02 thru 06 have a field for "Timestamp". It is so important that it deserves its own column. However, there is no text in any of the fields in Table 31A-3 to indicate where the field "timestamp" is located.

SuggestedRemedy

Show field Timestamp in opcode definition.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Timestamp field is defined in frame format description, however it is generated and sunk by MAC Control and is not exposed at the MAC Control client interface.
For that reason no field was shown in the table.
Add note to table with explanation.

Cl **36** *SC* **0** *P* **494** *L* **1** # **315**
Tom Mathey Independent

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

Summary: EPONs need a bit for uni-directional operation, much like OAM uni-directional.
Details: A very normal case for an EPON headend is when none of the subscribers are transmitting. The fiber optic light at he headend receive path is off. Then the headend receive link status, even if signal SIGNAL_DETECT is extended, becomes link fail. At link fail, the headend is not allowed to transmit any MAC data frames. Operation of any MAC Control frames is also halted. Only OAM frames, which are optional, are allowed on a uni-dir link per Clause 57.

SuggestedRemedy

Discuss. Perhaps add another uni-dir bit which is specific to EPONs.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comments #1226

Cl **36** SC **36** P L # **75**
Dawe, Piers Agilent

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

Need to refer to the additional FEC sublayer in 65.2.

SuggestedRemedy

Insert a sentence at the end of 36.1.1:
An optional forward error correction (FEC) sublayer for 1000BASE-PX is described in 65.2.
Add a new subclause 36.1.4.4 with a few lines summarising the FEC sublayer and referring to it.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #952

Cl **36** SC **36.1.1** P L # **76**
Dawe, Piers Agilent

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

This sentence will become false: "There are currently three embodiments within this family: 1000BASE-CX, 1000BASE-LX, and 1000BASE-SX."

SuggestedRemedy

Change to:
This family includes 1000BASE-CX, 1000BASE-LX, and 1000BASE-SX and several embodiments introduced in 56.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Adding this to Clause 36 is contrary to the intent of minimizing the number of clauses we open up so that document restructuring is more easily supported. This is better added as part of the introductory text for the "changes to Clause 36" portion of the new Clause 66.

Cl **36** SC **36.2.4.19** P **77** L **14** # **1075**
Law, David 3Com

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

The text states that this counter only increments while '... the receiver is in normal mode ...' however I have searched Clause 36 and I can find no definition of what 'normal mode' is for a receiver.

While I guess it could be assumed that this means that the Synchronization is complete and that Auto-Negotiation is complete it would be more preferable to included the incrementing of this counter is one of the existing state machines.

SuggestedRemedy

Suggest the counter should be increment from one of the existing Clause 36 state machines.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove everything from Clauses 36 & 45 related to this and modify the Clause 30 aPCSCodingViolation counter (30.5.1.1.13) to increment for every RX_CLK when RX_DV and RX_ER are both active.

Cl **36** SC **36.2.4.19** P **77** L **17** # **81**
Dawe, Piers Agilent

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

This is a PCS counter but 45.2.1 is PMA/PMD registers.

SuggestedRemedy

Do you mean 45.2.3.17?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution to comment #1075

Cl **36** SC **36.2.4.19** P **77** L **17** # **217**
Tom Mathey Independent

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

Bad cross reference.

SuggestedRemedy

Should be 45.2.3.17

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution to comment #1075

Cl **36** *SC* **36.2.4.19** *P* **77** *L* **6** # **72**

Dawe, Piers Agilent

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

Is the name "PCS Management Counter" the best name? It doesn't count managements, but coding violations.

SuggestedRemedy

Call it "PCS coding violation Counter"?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #1075

Cl **36** *SC* **36.2.4.19** *P* **77** *L* **6** # **71**

Dawe, Piers Agilent

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

This new function, PCS Management Counter, seems to be written in such a way that it would apply to all 1000BASE-X PCSs with MDIO or equivalent. This would be a retrospective requirement on existing non-EFM 1000BASE-X PCSs which presumably is not our intention.

SuggestedRemedy

Make it clear that this function is optional.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See response to comment #1075 - the counter is removed and only a Clause 30 attribute remains

Cl **36** *SC* **36.2.4.19** *P* **77** *L* **6** # **334**

Grow, Robert Intel

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

Counter should be defined in receive state diagram, not in isolation here. As defined, interoperability problems are likely. For example, it isn't clear how this counter relates to invalid code-groups defined in 36.2.4.6. Are the seven reserved valid code points of Table 36-2 excluded from the count, or only the five used in Table 36-3? Is comma alignment required? The term "normal mode" is used in mulitple ways in Clause 36 (e.g., for the TBI, not loopback), its use here is too imprecise.

SuggestedRemedy

Change counter definition to a variable in 36.2.5.1 and add to receive state diagram. I would recommend defining a constant of invalid, variable of coding_violation, and in the Figure 36-7 add the variable. The clause 45 counter then defines the counter size and behaviour in terms of the state diagram. It also should be clear this is an optional capability (independent of previously mandatory functions (probably needs its own major option in the PICS).

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See reseponse to comment #1075

Cl **36** *SC* **36.2.4.19** *P* **77** *L* **8** # **1061**

Law, David 3Com

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

I not sure how accurate the statement that 'If an MDIO interface is provided (see CROSS REF Clause 22), it is accessed via that interface.' is correct as this counter is included in a Clause 45 MMD register, not a Clause 22 register. To be able to access this register 1) the Clause 22 MDIO interface has to be provided, 2) the Register 13 and 14 MMD interface has to be implemented as part of that Clause 22 interface, and 3) the Clause 45 PCS MMD has to be implemented.

Furthermore if we now assume that all the above has been done it still isn't clear to me how to present the other registers in the PCS MMD registers, see subclause 45.2.3, as this subclause was never written to be able to cope with supporting a 1000BASE-X PCS. What are the contents of the MMD PCS mandatory registers (see 45.5.5.7). What for example should the Speed Selection bits (3.0.5:2) in the MMD PCS register be set to and how do they interact with the Clause 22 Speed selection bits (0.6 & 0.13), are there any updates to the PCS ability bits to support 1000 Mb/s operation. From the changes to Clause 45 in IEEE 802.3ah I cannot see any changes to these registers.

SuggestedRemedy

Please provide the necessary updates to Clause 45 to allow the PCS MMD to support inclusion in a 1000BASE-X PHY.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #1075

Cl **36** *SC* **36.2.4.19** *P* **77** *L* **9** # **1225**

Thaler, Pat — Agilent

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

This is inserting a retroactive recommendation. While you may want this feature for EFM use of the PCS, it seems excessive to recommend it at this point for all 1000BASE-X.

SuggestedRemedy

Modify the recommendation so that it applies specifically for PCS that will be used in a subscriber access network.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #1075

Cl **36** *SC* **36.2.5.1.3** *P* **77** *L* **19** # **48**

Thomas Dineen — Dineen Consulting

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

Operation of the Multipoint MAC Control Protocol of Clause 64 will require a small modification in clause 36 which is similar to that provided for the OAM Protocol:

Two Problems:

1)P2MP dose not use the Auto Negotiation (AN) protocol of Clause 37 so this needs to be turned off.

2) P2MP defines its own data link access and arbitration protocol where link start up commences with aid of the Discovery Process as defined in 64.3.7. This process in frame based and thus requires immediate transmission of frames and idles.

Both of the above problems can be fixed by setting the Clause 36 variable “xmit” to the value “data”. Thus causes AN to be bypassed and enables transmission of idles and frames.

SuggestedRemedy

In 36.2.5.1.3 define a new variable called mp_mode_enable.

Add the text:
“mp_mode_enable
controls the enabling and disabling of Clause 36 support for the Multi Point MAC Control Protocol.
Values: FALSE; Support for the Multi Point MAC Control Protocol is not enabled
TRUE; Support for the Multi Point MAC Control Protocol is enabled”

Reword the following sentence in 36.2.5.2.1 at line 40:
“When mr_unidirectional_oam_enable = TRUE or mp_mode_enable=TRUE, the Auto-Negotiation process xmit flag always takes the value DATA and the Auto-Negotiation process is never invoked.”

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Changes for Unidirectional Enable to support OAM will be implemented in the new Clause 66. Support of this capability for P2MP will be added as a reference to the new Clause 66 from the existing Clause 65.

The text in the suggested remedy will be used as a starting point.

Cl **36** *SC* **36.2.5.1.3** *P* **77** *L* **20** # **1076**

Law, David 3Com

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

Typo.

SuggestedRemedy

The change instruction is Insert for this text therefore there should not be an underscore on 0.1.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use the new text provided in Clause 24 comment #1064

Cl **36** *SC* **36.2.5.1.3** *P* **77** *L* **23** # **1226**

Thaler, Pat Agilent

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

This is being inserted without any context. Reference the location of the description of unidirectional OAM capability and explanation of when it is appropriate. Also, the first usage of OAM in the clause should be expanded to.

The consequences of setting the variable TRUE are not made apparent to the reader. For example, it should state explicitly that setting the variable TRUE disables auto-negotiation.

The choice between full duplex and half duplex also needs to be covered when autonegotiation is disabled.

There may be additional places where unidirectional operation requires some alteration of behavior.

SuggestedRemedy

Provide a suitable reference. Provide information here on when this variable should not be set TRUE. In many cases such as operation with standard bridges, we rely on knowing that the link is either bidirectional or not there at all. It is only in environments designed to tolerate unidirectional operation that this variable should be set TRUE.

Since you disable Auto-Negotiation in this mode, you should also say how the duplex mode is set. For subscriber access networks, it should be full-duplex as the distance requirements of half-duplex are not likely to be met. Also, unidirectional operation only makes sense for full duplex. If you were half duplex and your receive link was down, you could be transmitting when your partner is transmitting and your transmission would be discarded as a collision. Therefore, the unidirectional variable should also force full-duplex operation.

Also, this should be reflected in the Auto-Negotiation chapter.
Note that you could force xmit to equal data in the Auto-Negotiation chapter by disabling AutoNegotionion (mr_an_enable = FALSE) and using a unidirectional variable to override all the terms except power_on=TRUE in the global transiton to AN_ENABLE.
I think this is tidier than saying that xmit sometimes gets its value from Clause 37 and sometimes doesn't.
This also works for the issue of full/half duplex. Clause 37 is where the determination of duplex mode is made.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Make the following as part of the introductory text for the "changes to Clause 36" portion of the new Clause 66 as well as part of the text for the P2MP support of unidirectional enable in Clause 65. Separate the functions (OAM and P2MP) as appropriate for the 2 clauses.

"The 1000BASE-X PCS is capable of unidirectional operation in order to support Operations, Administration and Management (OAM) or Point to Multi-Point (P2MP) for a subscriber access network. However, this mode should only be enabled under very limited circumstances. Before enabling this mode, the MAC

should be operating in full-duplex mode and Auto-Negotiation should be disabled. In addition, the OAM sublayer above the MAC (see Clause 57) must be enabled on both ends of the link or this PCS must reside within an Optical Line Terminal (OLT) in a 1000BASE-PX network (see Clause 64). Failure to follow these restrictions results in an incompatibility with the assumptions of the bridge protocol."

Leave the changes to the XMIT variable only as part of the new Clause 66 - no "changes to Clause 37" required.

Cl **36** *SC* **36.2.5.1.3** *P* **77** *L* **29** # **550**

Booth, Brad Intel

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

Incorrect edit instruction.

SuggestedRemedy

Alter Modify to Change.

Proposed Response *Response Status* **C**

ACCEPT.

Duplicate of #1076

Cl **36** *SC* **36.2.5.1.3** *P* **77** *L* **30** # **1077**

Law, David 3Com

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

Typo.

SuggestedRemedy

The change instructions should read 'Change figure 24-16 as follows:' as underscore and strikeout changes are shown.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Duplicate of #1076

Cl **36** *SC* **36.3** *P* *L* # **73**

Dawe, Piers Agilent

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

Need to refer to the additional PCS requirements in 65.3.

SuggestedRemedy

Insert a sentence in 36.3 before 36.3.1 saying at least:
Additional requirements for a PMA in a 1000BASE-PX-D PHY are given in 65.3.

Proposed Response *Response Status* **C**

REJECT.

Adding this to Clause 36 is contrary to the intent of minimizing the number of clauses we open up so that document restructuring is more easily supported. This is already handled in 65.

Cl **43B** *SC* **43B.2** *P* **162** *L* **28** # **86**

Dawe, Piers Agilent

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

"the absolute maximum traffic loading that would result is 100 maximum length frames per second per point-to-point link and 100 maximum length frames per ONU for point-to-multipoint link."

This begs the question of what's the loading on a CMSA/CD shared medium. If it is 100 per port on the medium, then we can generalise the sentence above.

SuggestedRemedy

Change to "100 maximum length frames per port on a shared or point-to-multipoint medium."

Proposed Response *Response Status* **C**

REJECT.

The three Slow Protocols (LACP, Marker and OAM) are only defined for full-duplex media.

The referenced sentence was modified by the response to comment #85.

Cl **43B** *SC* **43B.2** *P* **162** *L* **28** # **85**

Dawe, Piers Agilent

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

"per point-to-point link", "per ONU for point-to-multipoint link."

1.4.153 and 1.4.159 define "link" as having only two ends.

SuggestedRemedy

Change the word or change the definition of "link".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: "the absolute maximum traffic loading that would result is 100 maximum length frames per second per point-to-point link and 100 maximum length frames per ONU for point-to-multipoint link."

to read: "the absolute maximum traffic loading that would result is 100 maximum length frames per second per point-to-point link and 100 maximum length frames per ONU for point-to-multipoint topologies."

Cl **43B** *SC* **43B.4** *P* **162** *L* **40** # **454**

James, David JGG

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

Excessive capitalization.

SuggestedRemedy

Link Aggregation Control Protocol (LACP)
==>
Link aggregation control protocol (LACP)

Operations, Administration, and Maintenance (OAM)
==>
operations, administration, and maintenance (OAM)

Proposed Response *Response Status* **C**

REJECT.

As the names of protocols, the OAM editor feels the capitalization is appropriate. OAM is following the pattern set by the work of 802.3ad.

Cl **45** *SC* *P* **108** *L* **53** # **449**

James, David JGG

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

Inconsistent constant-value notation.

SuggestedRemedy

"Ready" ==> READY
"Get" ==> GET
"Set if clear" ==> SET_IF_CLEAR
"Clear if same" ==> CLEAR_IF_SAME
(etc. throughout the document)

Proposed Response *Response Status* **C**

REJECT.

The STF believes that the current notation is consistent and easy to read. The proposed reponse would also create confustion between enumerated values and state names.

Cl **45** *SC* *P* **77** *L* **1** # **434**

James, David JGG

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

Excess capitalization

SuggestedRemedy

36. Physical Coding Sublayer (PCS) and Physical Medium Attachment (PMA) sublayer, type 1000BASE-X
==>
36. Physical coding sublayer (PCS) and physical medium attachment (PMA) sublayer, type 1000BASE-X

Proposed Response *Response Status* **C**

REJECT.

The clause/page/line numbers are incorrect. This comment seems not to be against C45.

Regardless, please see the response to comment 456.

Cl **45** *SC* *P* **80** *L* **1** # **435**

James, David JGG

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

Excess capitalization

SuggestedRemedy

45. Management Data Input/Output (MDIO) Interface
==>
45. Management data input/output (MDIO) interface

Proposed Response *Response Status* **C**

REJECT.

The capitalization is the same as all clauses in 802.3ae-2002. We are only making minimal changes to existing clauses. This change would be out of scope, as per the PAR.

Cl **45** *SC* *P* **82** *L* **5** # **439**

James, David JGG

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

Items in tables should be centered if not sentences or text, as per IEEE style manual.

SuggestedRemedy

Center:
45-2, 1st column
(others throughout the specification)

Proposed Response *Response Status* **C**

REJECT.

The length of the text is variable, 802.3-2002 and 802.3ae-2002 already use left justified text in this case. This has already been reviewed by the IEEE staff editors.

As in the IEEE Standards Style Manual 2000, left column values are left justified.

Cl **45** *SC* *P* **83** *L* **17** # **440**

James, David JGG

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

The column title conflicts with the enumerated value name.

SuggestedRemedy

In rows after title, change:
R/W ==> RW
This is also consistent with enumerated value names of all caps.

Proposed Response *Response Status* **U**

REJECT.

R/W has been inherited from C22 and 802.3ae-2002 C45.

Cl **45** *SC* *P* **83** *L* **23** # **441**

James, David JGG

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

Excessive capitalization.

SuggestedRemedy

Read Only
==> read only
Latches High
==> latches high
Self Clearing
==> self clearing
Non Roll-over
==> non roll-over

Here and in other tables (do a global search)

Proposed Response *Response Status* **C**

REJECT.

This convention was inherited from C22 and C45-802.3ae. The capitalization matches the acronym.

Cl **45** *SC* *P* **83** *L* **25** # **437**

James, David JGG

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

Confusing cross-references.

SuggestedRemedy

The descriptions of the figure would be better if row numbers were used, and the text after the table used the row numbers, such as:

Row 45-3-1: A one bit indicates...

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change text to match similar bits in C45 802.3ae-2002.

"When read as a one, bit 1.x.15 indicates. . ."

Cl **45** *SC* *P* **83** *L* **33** # **438**
James, David JGG

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

Inconsistent cross-references.

SuggestedRemedy

Change:
A one in bit 15 ...
==>
A one in bit 14 ...

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* *P* **86** *L* **10** # **229**
Tom Mathey Independent

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

Conflict: Line states 2048 vs line 37 which says 1024 or 2048

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove selection capabilty bits from 1.x.2:1. They are redundant.

Cl **45** *SC* *P* **86** *L* **31** # **442**
James, David JGG

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

Inconsistent and hard to cross-reference names.

SuggestedRemedy

Tx window length ==> txWindowLength
FFT/IFFT size ==> fftIfftSize
Tone spacing ==> toneSpacing
(and similar changes througout)

Proposed Response *Response Status* **C**

REJECT.

Register names are descriptive, not variable names or constants. More concise reference to specific register bits is accomplished by referring to the bits themselves, as in:

45.2.1.18.1 Tx window length (1.x.15:8)
Bits 15:7 control the PMD transmit window. . .

Cl **45** *SC* *P* **89** *L* **17** # **443**
James, David JGG

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

The descriptions seem to be a formal specification, which limits the length of the specification while making the table hard to read.

SuggestedRemedy

1) Include row numbers in the table
2) Limit the description to a description of function
3) Provide specification details in the after-table row descriptions

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

For the sake of readability, the STF preferers to have the more verbose descriptions in the table.

Effort will be made to conciseralise the descriptions.

Cl **45** *SC* *P* **93** *L* **52** # **444**
James, David JGG

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

Don't hyphenate key names across lines.

SuggestedRemedy

Elimimate '/' from line-breaking characters, in document properties.

Proposed Response *Response Status* **C**

ACCEPT.

The editor will point this out in the 2003 revision of the IEEE-SA Framemaker template review.

Cl **45** *SC* *P* **95** *L* **12** # **445**
James, David JGG

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

Names should not be capitalized, unless done so consistently

SuggestedRemedy

Code violations ==> codeViolations
Errored seconds ==> erroredSeconds
(etc.)

Proposed Response *Response Status* **C**

REJECT.

As from C22 and 802.3ae-2002 C45, register names have their first letter capitalized.

Cl **45** *SC* *P* **97** *L* **43** # **245**

Tom Mathey Independent

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

Appears to be a bad reference, no text for "segment defect", add text to provide the signal name which drives this bit.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

reference new 63.2.2.3 text re: mgmt.

Cl **45** *SC* *P* **99** *L* **12** # **446**

James, David JGG

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

Text in figures should be 8-point Arial, not smaller unless necessary, never larger, but occassionally bold for emphasis.

SuggestedRemedy

Change text in:
Figure 45-100
Figure 57-7
Figure 57-8
Figure 57-9
Figure 57-10
Figure 57-11
Figure 57-12
Figure 57-13
Figure 58-2
Figure 58-6
Figure 58-9
Figure 58-10
Figure 58-11
Figure 58-12
Figure 59-2
Figure 59-3
Figure 59-4
Figure 59-7
Figure 60-2
Figure 60-3
Figure 60-4
Figure 60-5
Figure 60-6
Figure 60-7
Figure 60-8
Figure 60-9
Figure 60-10
Figure 61-13 (& eliminate unnecessary bold)
Figure 61-14 (& eliminate unnecessary bold)
Figure 61-15 (& eliminate unnecessary bold)
Figure 61-16 (& eliminate unnecessary bold)
Figure 62-1
Figure 62-3
Figure 64-1
Figure 64-4
Figure 64-5
Figure 64-6
Figure 64-7
Figure 64-8
Figure 64-9
Figure 64-10
Figure 64-11
Figure 64-12

Figure 64-13
Figure 64-14
Figure 64-15
Figure 64-16
Figure 64-17
Figure 64-18
Figure 64-19
Figure 64-20
Figure 64-21
Figure 64-22
Figure 64-23
Figure 64-24
Figure 64-25
Figure 64-26
Figure 64-27
Figure 64-28
Figure 64-29
Figure 64-30
Figure 64-31
Figure 64-32
Figure 64-33
Figure 61A-1
Figure 61A-2

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Shall be changed to 8 point Helvetica as required by the 2000 style manual

---

Cl **45** *SC* **2.1.11.2** *P* **83** *L* **33** # **681**

Joergensen, Thomas Vitesse Semiconducto

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

Reference to wrong register bit, bit 15. In Table 45.3 it is bit 14.

SuggestedRemedy

Change to bit 14

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **2.1.11.4** *P* **83** *L* **43** # **683**

Joergensen, Thomas Vitesse Semiconducto

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

Reference to wrong register bit, bit 9. In Table 45.3 it is bit 0.

SuggestedRemedy

Change to bit 0

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **2.1.22.3** *P* **83** *L* **38** # **682**

Joergensen, Thomas Vitesse Semiconducto

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

Reference to wrong register bit, bit 11. In Table 45.3 it is bit 1.

SuggestedRemedy

Change to bit 1

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45** *P* **105** *L* **15** # **252**

Tom Mathey Independent

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

Need text to indicate that the Clause 61 PCS can also detect and report coding violations.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add a pointer to 61.2.3.3.3 for the case of the EFM PCS.

Cl **45** *SC* **45** *P* **108** *L* **8** # **259**

Tom Mathey Independent

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

p339 lines 49 to 53 implies that this register is remotely readable. Add O: and R: to register description. For remote reads, provide a 3.x.y register into which the remote read values are placed such that they can be read by local device management. Scrub clause 45 for all such instances and match up with clause 61, 62, and 63.

SuggestedRemedy

Implement.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Resolve as comment #948

Cl **45** *SC* **45** *P* **80** *L* **1** # **219**

Tom Mathey Independent

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

Need to support the generic 3.0.14 bit for loopback in generic register: PCS control 1.

SuggestedRemedy

Add support for EFM Cu PCS 3.0.14 bit to 45.2.3.1.2

Proposed Response *Response Status* **C**

ACCEPT.

See comment 1084

Cl **45** *SC* **45** *P* **80** *L* **1** # **218**

Tom Mathey Independent

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

In Clause 45, I can not find the text: buffer_head_coding_violation_counter, FEC_corrected_blocks_counter, or FEC_uncorrected_blocks_counter. These signals are used to increment the associated counter. See p508.

SuggestedRemedy

Add text buffer_head_coding_violation_counter, FEC_corrected_blocks_counter, or FEC_uncorrected_blocks_counter to aid users when searching for text strings. State that "text" is used to increment the counter. Add counters if missing.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

As this applies to 1000BASE-X, the registers would not belong in Clause 45.

Add a Clause 22 register extension MMD. This MMD is only used to provide and extension to Clause 22 registers in a PHY.

Make a table summarizing the registers in the new MMD. This table includes the three counters in the comment, with pointers to their definition in Clause 65. No further discription of the registers will be placed in C45

Talk to Ben and Ariel.

Cl **45** *SC* **45** *P* **80** *L* **1** # **220**

Tom Mathey Independent

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

Need to support the generic 3.1.7 bit for fault in generic register: PCS status 1.

SuggestedRemedy

Add support for fault to EFM Cu PCS 3.1.7 bit to 45.2.3.2.1. Also be nice to add a short summary to 45.2.3 and in Clause 61 that states which bits apply to EFM Cu, since most people assume Clause 45 applies and is specific only to 10Gig.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Read as fault if any EFM PCS fault registers become a one.

Link with comment 1084.

Cl **45** *SC* **45** *P* **80** *L* **4** # **620**

Grow, Robert Intel

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

The Working Group chair considers the assignment of registers as substantive, and will require WG recirculation prior to progressing the draft to Sponsor Ballot.

SuggestedRemedy

Assign the numbers before the "last" recirculation.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Include register assignments in the initial Sponsor Ballot draft.

The WG Chair agrees with the response, but chooses not to sign off at this time so that the comment may serve as a reminder to the editor to perform this task.

Cl **45** *SC* **45** *P* **80** *L* **8** # **1256**

Thaler, Pat Agilent

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

We didn't withhold register addresses on the registers in the initial clause 45. It seems pointless to do so now since, if we are consistent with the rest of the clause, the registers will be numbered in order as they appear in the table and the order of the subclauses will be the same as the order in the table. To do otherwise would be unfriendly to the reader. Unless the plan is to scramble the registers in the table and their corresponding subclauses before sponsor ballot, one can therefore determine the register addresses by looking at the order in the table.

We have made mistakes in register numbering before and we need to have the numbers inserted so they can be checked and rechecked.

SuggestedRemedy

Assign the addresses.

Proposed Response *Response Status* **U**

REJECT.

See the response to comment #620.

These register addresses will be assigned in the initial Sponsor Ballot draft.

Cl **45** *SC* **45.1** *P* **80** *L* **14** # **566**

Booth, Brad Intel

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

Changes to the existing paragraph would make the readability much easier.

SuggestedRemedy

Change the third paragraph to read:
This extension to the MDIO interface is applicable to the following:
- Implementations that operate at speeds of 10 Gb/s and above,
- Implementations of 10PASS-TS and 2BASE-TL subscriber network Physical layer devices.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.1.2** *P* **80** *L* **22** # **567**

Booth, Brad Intel

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

The suggested edit could be performed in a much simpler manner with a service to humanity involved.

SuggestedRemedy

Change edit to read:
Delete "10 Gb/s" from the first paragraph.

Show the change in the text.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2** *P* **80** *L* **28** # **569**

Booth, Brad Intel

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

The 10PASS-TS and R-PMA/PMD are not separately manageable devices, but are instead part of the PMA/PMD manageable devices.

SuggestedRemedy

Roll the 10PASS-T tone table and R-PMA/PMD registers into the PMA/PMD section of the clause. Hint: put the tone table after the R-PMA/PMD. Delete the edit on pg 80, line 31. Move edit on pg 80, line 36 to be a note for Table 45-2. Delete edits from Table 45-1. Add R-PMA/PMD registers to Table 45-2 starting at 1.52. Add tone table registers to Table 45-2 starting at 1.64. Renumber 45.2.99 to be 45.2.1.51. Renumber 45.2.98 to be 45.2.1.52. Add reserved bits to Table 45-2 in the gaps.

Proposed Response *Response Status* **U**

REJECT.

Vote in the OAM STF Meeting:
Reject: 6
Opposed: 0
Abstain: 2

Even though the tone table and R-PMA/PMD are not separately managable, placing them in their own MMDs makes a lot of sense.

For the R-PMA/PMD registers, this allows the register addresses for the remote to match with those in the local. Also, since the parameters being accessed actually _do_ exist in a separately manageable device, use of a separate MMD is appropriate. See also the response to comment 1227.

The tone table is a huge block of registers that may actually grow in future versions of the standard as MCM technology improves. Placing the tone table into it's own MMD gives it room. Further, placing the tone table in the middle of the PMA/PMD registers consumes a large block, after which any future PMA/PMD registers would need to reside. Growing the tone table may then involve splitting it into two MMDs anyway. Also, keeping this unique functionality in it's own MMD makes more sense than mixing it with registers for generic functionality. With this in mind, it seems to make more sense to give the tone table its own MMD.

Cl **45** *SC* **45.2** *P* **80** *L* **34** # **1227**

Thaler, Pat Agilent

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

R-PMA/PMD is a confusing name. This is especially true since 10GBASE-R is a name of a 10 Gig PHY so it looks like a name for the PMA/PMD used with that PHY family.

Also far too many references are made to this new concept before it is explained what a remote PMA/PMD is.

SuggestedRemedy

Change the name to something else such as Remote-PMA/PMD

Add a figure and explanation of the concept to 45.1 or 45.2.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

R-PMA/PMD becomes Link Partner PMA/PMD.

The individual MMDs are not described specifically in 45.2 Rather than explain the Link Partner PMA/PMD twice, add a cross ref in 45.2 to the explanation in 45.2.99.

Add a figure to 45.2.99. The figure depicts the MMD stack as in Figure 45-1 with the remote MMD stack next to it. Show that the Link Partner PMA/PMD MMD sits parallel to the PMA/PMD MMD.

Cl **45** *SC* **45.2** *P* **80** *L* **42** # **568**

Booth, Brad Intel

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

Invalid reference.

SuggestedRemedy

Cross-reference to 61.1.5.5 does not exist. Change to be 61.1.5.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2** *P* **80** *L* **42** # **757**

Horvat, Michael Infineon Technologies

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

Cross Reference 61.1.5.5 does not exist

SuggestedRemedy

cross reference to 61.1 , page 320

Proposed Response *Response Status* **C**

ACCEPT.

same as 568

Cl **45** *SC* **45.2** *P* **80** *L* **43** # **221**
Tom Mathey Independent

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

Bad cross reference.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.

same as 568

Cl **45** *SC* **45.2.1** *P* **81** *L* **23** # **570**
Booth, Brad Intel

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

Registers 1.0, 1.1 are the primary PMA/PMD control and status registers, respectively, yet there is nothing in them that specifies that this is a 10PASS-TS or 2BASE-TL device.

SuggestedRemedy

Add bit 1.1.8, EFM enabled, 1=10PASE-TS or 2BASE-TL device present, 0=10PASS-TS or 2BASE-TL device not present, RO. Define the bit in 45.2.1.2.1, increment the bits that follow.

Add sentence to end of first paragraph of 45.2.1.1.3:
If 1.1.8 is set to one, the values set in 1.0.13, 1.0.6 and 1.0.5:2 shall be ignored.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

do response to 1084 instead.

Cl **45** *SC* **45.2.1** *P* **81** *L* **27** # **1257**
Thaler, Pat Agilent

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

This replaces a row covering 32 752 registers with rows for less than 25 registers. What happened to the rest of the registers?

This comment also applies to 45.2.3 page 104 ine 5.

SuggestedRemedy

Add a row to the table for the reserved registers.

Proposed Response *Response Status* **U**

ACCEPT.

Cl **45** *SC* **45.2.1** *P* **81** *L* **37** # **571**
Booth, Brad Intel

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

Control register comes before a status register.

SuggestedRemedy

Move entries in Table 45-2. Change 45.2.1.12 to be 45.2.1.32, move 45.2.1.11 to be 45.2.1.33, increment all following registers accordingly.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The status register is going away anyway as in comment 1267

Cl **45** *SC* **45.2.1** *P* **81** *L* **37** # **572**
Booth, Brad Intel

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

Number the registers.

SuggestedRemedy

Numbering for the registers should start at 1.32 and increment from there. This will not overlap on the 10G register space that goes to 1.15, plus permit other 10G registers to fit in more smoothly if required.

Proposed Response *Response Status* **U**

REJECT.

See response to comment 620

Cl **45** *SC* **45.2.1** *P* **81** *L* **42** # **78**
Dawe, Piers Agilent

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

Can the "10P FEC correctable errors counter" and "10P FEC uncorrectable errors counter" be combined with any equivalent for 65.2 FEC?

This comment duplicated against 45.2.1 and 65.2.

SuggestedRemedy

?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to 218

Cl **45** *SC* **45.2.1** *P* **82** *L* **27** # **1082**

Law, David 3Com

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

Need to add the reserved registers to the end of the new entries.

SuggestedRemedy

Add a new row to the end of this table that reads register address '1.x through 1.32 767' and Register name 'Reserved'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1** *P* **94** *L* **22** # **823**

Beili, Edward Actelis Networks

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

A mechanism for the transmission of remote 2B PM registers is not specified.

SuggestedRemedy

Specify the mechanism underlying the retrieval of such remote statistics (Status/Full Status request, Performance Status SHDSL EOC messages).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Resolve along with Comment 915 against C63

Below are notes for the editor:

Sounds good.

For the last part (about register consistency), should we mention that the registers all be read & clear, and the remote device should also clear the registers when their values are sent back to the "-O" via the EOC?

Based on the response (below), it seems like the "get" command is handled, but we still need to deal with the "send" and "activate" commands.

If the Status Request message is done in response to the "get" command of Clause 45 (45.2.99.1), then this should be explicitly stated in Clause 45.

Part 2
1)In addition to the above text, it is recommended to change the length of the clause 45 registers to reflect the same length as the shdsl parameters. ES, SES, LOSW and UAS should be 8 rather than 16 bits long. Although there are technically no problems assigning different lengths to the clause 45 & SHDSL parameters, the EFM management entity might not be aware that the 16
bit ES register should really be refreshed at the rate of an 8 bit
register.
2)In addition, it is recommended that 2 more bits be allocated to the
clause 45 2B state defects register. Those 2 bits would correspond to bit 6 & 7 of octet 11 of message ID 141 and indicate an overflow or reset condition on the Code violations / ES/ SES/ LOSW/ UAS 2Base-TL-R registers.
3)It is also recommended that an additional clause 45 register be created recording the loop attenuation. The loop attenuation is reported as octet 4 of message ID 141. Since the info is there, we might as well take advantage of it.
4)It is also recommended that an additional clause 45 register be created to record the power back-off status. The new register would have 3 fields that correspond to
a) bit 6 of octet 1 - Power BackOff status
b) bits 0 to 3 of octet 11 - Power Back-Off Base Value (dB)
c) bit 7 of octet 12 Power Back-off Extension (dB).
5)It is also recommended that the updating mechanism be consistent across the clause 45 and the SHDSL registers. In order to facilitate this, the following additional text should be

added to 63.2.2.3 Reference section 9.
"Note that the code violation, ES, SES, LOSW and UAS in SHDSL are modulo counters. The absolute value of the counter is meaningless, however the difference in between 2 consecutive readings provides the change in code/violation/ES/SES/LOSW/UAS. Also, if there are no changes in the performance registers, message ID 139 rather than 141 will be sent by the 2Base-TL-R.
It only contains the SNR value and none of the other parameters."

Cl **45** *SC* **45.2.1.11** *P* **83** *L* **20** # **327**

Simon, Scott — Cisco Systems, Inc.

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

The "Handshake result" bit is not needed. Hanshake is only used to perform the PAF Discovery function.

SuggestedRemedy

Remove references to "Handshake result." Mark those bits as reserved.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.11** *P* **83** *L* **20** # **950**

O'Mahony, Barry — Intel Corp.

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

Changes are needed to align with PAF functions in Clause 61.

SuggestedRemedy

see omahony_4_0903.pdf

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Initialization defined as:
you have set PMA/PMD link control bit to = 1, but the link is not yet up. aggregation discoverty is disabled.

Add text to PMA/PMD link control bit to point to the 61 section that discusses link intialization.

PMA/PMD type selection may be moved to 1.0

2.3.18.5: Add reference to "register access"

2.3.18: PAF Enable on -R: Takes the value of the enable bit passed to to the -R via handshake after a link is brought up.

Cl **45** *SC* **45.2.1.11** *P* **83** *L* **8** # **222**

Tom Mathey — Independent

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

Table title differs from p81 line 38.

SuggestedRemedy

Add "/PMD" to table title.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.11.2** *P* **83** *L* **33** # **363**

Cravens, George — Mindspeed

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

The description applies to bit 14, bit says bit 15.

SuggestedRemedy

Change text to read:

"A one in bit 14 indicates" ...

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.11.2** *P* **83** *L* **33** # **223**

Tom Mathey — Independent

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

Bit 15 should be bit 14.

SuggestedRemedy

bit 15 should be bit 14

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.11.3** *P* **83** *L* **38** # **759**

Horvat, Michael — Infineon Technologies

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

Bit 11 is the wrong bit.

SuggestedRemedy

Change to bit 1.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.11.3** *P* **83** *L* **38** # **224**
Tom Mathey Independent

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

Bit 11 s/b bit 1; no cross reference to signal name.

SuggestedRemedy

Line 38: bit 11 s/b bit 1
map name: PMA_receive_synchronized to MMD bit as in: "This bit reflects the status of the signal pma_rcv_synchronized as described in 61.x.y, 62.x.y for 10P, 63.x.y for 2P."

Proposed Response *Response Status* **C**

ACCEPT.

This bit goes away! Cross with Pat's comment

Cl **45** *SC* **45.2.1.11.4** *P* **83** *L* **43** # **225**
Tom Mathey Independent

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

Bit 9 s/b bit 0

SuggestedRemedy

Bit 9 s/b bit 0

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.11.4** *P* **83** *L* **43** # **760**
Horvat, Michael Infineon Technologies

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

Bit 9 is the wrong bit.

SuggestedRemedy

Change to bit 0.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.11.4** *P* **83** *L* **43** # **364**
Cravens, George Mindspeed

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

The description of the handshake result refers to "bit 9". It seems that the text should refer to "bit 0". Also, the "result of the handshake operation" needs a reference to a sub-clause that provides a more detailed explaination of the operation.

SuggestedRemedy

Change the text to refer to bit 0 (instead of 9), and add a cross reference to the description of the handshake operation.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Bit has been removed, see comment 950, etc.

Cl **45** *SC* **45.2.1.12.1** *P* **84** *L* **1** # **226**
Tom Mathey Independent

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

Table title differs from p81 line 40

SuggestedRemedy

Add "/PMD" to table title.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.12.1** *P* **84** *L* **53** # **1259**
Thaler, Pat Agilent

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

A write that sets the PMD to an unadvertised type is meaning less and should not be allowed to succeed.

SuggestedRemedy

A PMD may ignore... should be
"A PMD shall ignore"

Proposed Response *Response Status* **U**

ACCEPT.

Cl **45** *SC* **45.2.1.12.2** *P* **84** *L* **29** # **365**

Cravens, George — Mindspeed

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

Bit 12 (the PMA/PMD link control) seems to conflict with bit 10 (handshake control). Bit 12 should be able to force the link down (by writing a "0"), but writing a "1" should be ignored since the handshake control bit is used to start the handshake process (which leads to initiating link).

SuggestedRemedy

Change the text both in Table 45-4 line 10 and in sub-clause 45.2.1.12.2:

Table 45-4:
0 = Link down (read), write to 0 forces link down.
1 = Handshake/link initiation in progress (read), writes ignored.

Sub-clause 45.2.1.12.2:
Change the text to read:
The PMA/PMD link can be forced down by writing a "0" to bit 12. To initiate a link, write a "1" to bit 10 (handshake control). The PHY shall ignore a write to this bit if handshake is in progress (bit 10), and will always ignore writing a "1".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Handshake removed as in Comment 950, etc.

1 = Link initialization in progress or link is up.

same with the text in 45.2.1.12.2

Cl **45** *SC* **45.2.1.12.2** *P* **84** *L* **30** # **359**

Squire, Matt — Hatteras Networks

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

Why is the bit ignored during handshake? Why doesn't it just terminate the handshake and take the link down?

SuggestedRemedy

If this bit is cleared while a handshake is in progress (bit 10), the PHY shall terminate the handshaking procedures and take the link down.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove reference to handshake, see comment 950, etc.

Cl **45** *SC* **45.2.1.12.3** *P* **84** *L* **13** # **328**

Simon, Scott — Cisco Systems, Inc.

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

The "Handshake control" bit is not needed. Handshake is only used by the PAF discovery function and therefore the PAF discovery registers are enough for this feature

SuggestedRemedy

Remove the "Handshake control" bit text. Mark table entries as reserved

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.12.3** *P* **84** *L* **30** # **358**

Squire, Matt — Hatteras Networks

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

What happens if you set this to 1 when the link is active? Does this force the link down (same as 1.x.12 to 0 then 1)?

SuggestedRemedy

Add: Setting this bit to 1 while it is 0 causes the link to go down and reinitialize

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

remove "reinitialize"

Cl **45** *SC* **45.2.1.13** *P* **84** *L* **43** # **227**

Tom Mathey — Independent

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

Loss of link should be when link transitions from up to down, not just when status is down.

SuggestedRemedy

Loss of link is when link transitions from up to down.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** SC **45.2.1.14** P **85** L **4** # **366**
Cravens, George Mindspeed

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

The behavior of the 10P FEC correctable errors register should be consistent with the link loss register (and others). To be consistant, the register should be reset to all zeroes upon read by a management function, and the bits should be held at all ones in the case of overflow.

SuggestedRemedy

Insert the following text between "all zeroes" and "upon execution":
(match the text on line 44, pg. 84, sub-clause 45.2.1.13)

"when the register is read by the management function or"

Add the following sentence before line 5:
"These bits shall be held at all ones in the case of overflow."

In Table 45-6, lines 13 & 14, add "NR" in the R/W* column.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Please see response to comment 1260.

Cl **45** SC **45.2.1.15** P **85** L **21** # **367**
Cravens, George Mindspeed

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

The behavior of the 10P FEC uncorrectable errors register should be consistent with the link loss register (and others). To be consistent, the register should be reset to all zeroes upon read by a management function, and the bits should be held at all ones in the case of overflow.

SuggestedRemedy

Insert the following text between "all zeroes" and "upon execution":
(match the text on line 44, pg. 84, sub-clause 45.2.1.13)

"when the register is read by the management function or"

Add the following sentence before line 22:
"These bits shall be held at all ones in the case of overflow."

In Table 45-7, lines 29 & 31, add "NR" in the R/W* column.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Please see response to comment 1260.

Cl **45** SC **45.2.1.16.1** P **86** L **5** # **369**
Cravens, George Mindspeed

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

The cross reference is incorrect. There is no clause 62.5.4.1.4.
The reference should be to clause 62.3.4.2.2

SuggestedRemedy

Change the cross reference to 62.3.4.2.2

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** SC **45.2.1.16.1** P **86** L **5** # **228**
Tom Mathey Independent

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

Bad cross reference

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Should be 62.3.4.2.2

same as 369

Cl **45** SC **45.2.1.17** P **86** L **17** # **370**
Cravens, George Mindspeed

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

The MMD at address 6 is called the 10Pass-TS tone table in Table 45-1.

SuggestedRemedy

Change text (two places in the same line) to "10Pass-TS tone table".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** SC **45.2.1.18.1** P **86** L **49** # **230**
Tom Mathey Independent

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

Bad cross reference.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Should be 62.2.4.1

Cl **45** SC **45.2.1.18.1** P **86** L **53** # **231**
Tom Mathey Independent

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

Bad cross reference.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Should be 62.2.4.2.2

Cl **45** SC **45.2.1.22.2** P **88** L **44** # **233**
Tom Mathey Independent

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

Bad cross reference. There is no text "frame size" in 62.2.4.5

SuggestedRemedy

Proposed Response *Response Status* **C**

REJECT.

62.2.4.5 includes the reference to T1.424 part 3, clause 9.3.5 which specifies DMT VDSL framing

Cl **45** SC **45.2.1.23** P **89** L **49** # **1262**
Thaler, Pat Agilent

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

This appears to be two registers not 1.

Comment also applies to 45.2.1.20, 45.2.1.26, 45.2.1.27 andother places.

SuggestedRemedy

Change the text so that one register address is one register in all of Clause 45. A 32-bit quantity is two registers.

Proposed Response *Response Status* **U**

ACCEPT.

Cl **45** SC **45.2.1.25.2** P **90** L **7** # **1261**
Thaler, Pat Agilent

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

Shouldn't EOC be VOC?

Also applies to 45.2.1.22.2

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** SC **45.2.1.25.2** P **90** L **8** # **235**
Tom Mathey Independent

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

Title uses VOC, text uses EOC

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** SC **45.2.1.27** P **90** L **52** # **1263**

Thaler, Pat Agilent

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

There is no reason to pack the values this way and we avoided doing this in creating the original register definitions. There are two instances here of a less than 16 bit value crossing registers.

Also, note that there is a typo in PSD level as the register value begins 2.x rather than 1.x.

SuggestedRemedy

Redefine so that a whole value is in a single register unless the value requires more than 16 bits.

Also fix the typo on PSD level.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Cl **45** SC **45.2.1.29** P **92** L **1** # **238**

Tom Mathey Independent

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

This table has no bit assigned for local fault and/or the local device PCS link status for passing to remote PCS. The indicator bits need to support a remote fault status bit from the PCS on the transmit path, and a local fault status bit on the receive path

SuggestedRemedy

Assign

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The commented register exists in the PMA/PMD MMD, no indicator bit registers exists currently for the PCS MMD.

Follow resolution of 1247. Create PCS ib registers (receive and send) if 1247 results in new indicator bits.

See also 376

Cl **45** SC **45.2.1.29** P **92** L **1** # **237**

Tom Mathey Independent

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

As p91, line 1 seems to be for the bits assigned by and for the local PMD, where is the table and register assigned for bits read from the remote PMA, the link partner.

SuggestedRemedy

Assign register for bits accessed from remote PMD

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Break into two registers, similar in structure. One shows the status of the bits being sent, the other the status of the bits being received.

Cl **45** SC **45.2.1.29** P **92** L **3** # **376**

Cravens, George Mindspeed

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

The description of the 10P indicator bits status register claims that it conveys both state of the bits being sent over the link by the local PMA, and those received on the link from the remote PMA. It cannot do both (all the bits are labeled "link partner" in Table 45-20).

SuggestedRemedy

Change text to correctly describe what the bits in Table 45-20 are showing (probably the remote PMA's status).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Make a duplicate register that shows the local status of the IBs being sent.

See comment 238

Cl **45** SC **45.2.1.30** P **92** L **49** # **240**

Tom Mathey Independent

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

If the selected parameters are sent to the link partner, provide a cross-reference to where this process is described. I can find no map between table 45-21 bits for Annexes and corresponding NPAR or SPAR fields in Clause 61.

SuggestedRemedy

Provide text cross reference. Provide map from the black magic of Clause 45 registers and bits to all black magic Clause 61 NPAR or SPAR fields.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add text to reference 61.3.8.7.4 and .5

Cl **45** *SC* **45.2.1.30** *P* **92** *L* **50** # **377**

Cravens, George — Mindspeed

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

Move the cross reference note on pg. 93 line 28 (sub-clause 45.2.1.31) to here since this is the first 2B PMA/PMD register. (The note points to the G.994.1 signalling description.)

SuggestedRemedy

Move the cross reference note on pg. 93 line 28 (sub-clause 45.2.1.31) to here since this is the first 2B PMA/PMD register. (The note points to the G.994.1 signalling description.)

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.32** *P* **93** *L* **50** # **822**

Beili, Edward — Actelis Networks

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

The mechanism for a transmission of remote 2B Rx SNR value is not specified.

SuggestedRemedy

Specify (possibly in Clause 63) that the Remote SNR value shall be transmitted via EOC as specified in G.991.2
(Status Request and SNR/Status SHDSL EOC messages).

Proposed Response *Response Status* **C**

ACCEPT.

See for more detail Comment #915

Cl **45** *SC* **45.2.1.32** *P* **93** *L* **51** # **867**

Kimpe, Marc — Adtran

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

a) Clause 45 refers to an SNR register. Usually, one refers to an SNR Margin register since the SNR Margin is what people care about.
b) clause 45.2.1.32 contains a one-line subclause 45.2.1.32.1. The information in that subclause could be entered into Table 45-23 and result in a more elegant document.
c) if you really believe someone claiming that they can measure an SNR or SNR Margin with an accuracy of 0.25dB, may I interest you in some nice swamp land in Alabama that could make a real swell investement opportunity.
d) whether the register contains an SNR or SNR margin measurement, there needs to be a reference to a section that define the term.
I realize that those are really 4 separate comments but since they are dependent on one another, I grouped them.

SuggestedRemedy

a) In 45.2.1.32 change all SNR notations to SNR Margin notations (6 of them if I can count).
b) remove 45.2.1.32.1
c) change the 0.25 dB notation to a dB notation and the description field of table 45-23 to "S:= Value of SNR Margin in dB".
d) add a CROSSREF to either section 63.2.2.3 (which is a new section I propose in another comment) or to the section that will refer to the management functions of 2BASE-TL.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The editor will integrate the suggested remedy appropriately.

Crocodile farms can be quite lucrative!

Cl **45** *SC* **45.2.1.33** *P* **94** *L* **19** # **868**

Kimpe, Marc — Adtran

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

There needs to be a reference to a section that defines the attenutation threshold and SNR margin threshold.

SuggestedRemedy

Add a CROSSREF to either section 63.2.2.3 (which is a new section I propose in another comment) or to the section that will refer to the management functions of 2BASE-TL.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will follow the resolution of the 63.2.2.3 comment. Add the reference.

Cl **45** *SC* **45.2.1.34** *P* **94** *L* **49** # **869**

Kimpe, Marc Adtran

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

We agreed to include G.991.2 as reference. This subclause incorporates text from G.991.2. The text should be refered, not included.

SuggestedRemedy

Strike the first paragraph and add a reference at the end of the 1st line of the second paragraph.
The reference can either be explicitely to section 9.2.1 of G.991.2 where the CRC anomaly is defined OR (better still) add a CROSSREF to either section 63.2.2.3 (which is a new section I propose in another comment) or to the section that will refer to the management functions of 2BASE-TL.

Proposed Response *Response Status* **C**

ACCEPT.

Add the reference to 63.2.2.3

Cl **45** *SC* **45.2.1.34** *P* **94** *L* **49** # **241**

Tom Mathey Independent

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

Bad cross reference. I can find no text for CRC or anomaly in 63.2..2.1.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change reference to new clause referring to 2BASE-TL management as commented in by Marc Kimpe

Cl **45** *SC* **45.2.1.34** *P* **94** *L* **54** # **368**

Cravens, George Mindspeed

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

The behavior of the 2B FEC code violation errors register should be consistent with the link loss register (and others). To be consistent, the register should be reset to all zeroes upon read by a management function, and the bits should be held at all ones in the case of overflow.

SuggestedRemedy

Insert the following text between "all zeroes" and "upon an":
(match the text on line 44, pg. 84, sub-clause 45.2.1.13)

"when the register is read by the management function or"

Add the following sentence as the next line:
"These bits shall be held at all ones in the case of overflow."

In Table 45-25, lines 13 & 15, add "NR" in the R/W* column.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Please see response to comment 1260.

Cl **45** *SC* **45.2.1.35** *P* **95** *L* **18** # **870**

Kimpe, Marc Adtran

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

We agreed to include G.991.2 as reference. This subclause incorporates text from G.991.2. The text should be refered, not included.

SuggestedRemedy

Strike the first paragraph. Change the first line of the 2nd paragraph to "This 16-bit counter contains the number of Errored Seconds (see CROSSREF XXX)" where XXX is a reference. The reference can either be explicitely to section 9.3.2 of G.991.2 where the ES is defined OR (better still) add a CROSSREF to either section 63.2.2.3 (which is a new section I propose in another comment) or to the section that will refer to the management functions of 2BASE-TL.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.35** *P* **95** *L* **21** # **242**
Tom Mathey Independent

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

As only synch mode is allowed, wny even mention.

SuggestedRemedy

Remove text "In synchronous mode, "

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.36** *P* **95** *L* **50** # **871**
Kimpe, Marc Adtran

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

We agreed to include G.991.2 as reference. This subclause incorporates text from G.991.2. The text should be refered, not included.

SuggestedRemedy

Change the current text from:
"The 2B severely errored seconds register is a 16-bit counter that contains the number of 1-second intervals during which at least 50 CRC anomalies are declared or one or more LOSW defects are declared. (50 CRC anomalies during a 1-second interval is equivalent to a 30% errored frame rate for a nominal frame length (see CROSS REF 63.2.2.1). " to
"This 16-bit counter contains the number of severely errored seconds (see CROSS REF XXX). " where XXX is a reference. The reference can either be explicitely to section 9.3.3 of G.991.2 where the SES is defined OR (better still) add a CROSSREF to either section 63.2.2.3 (which is a new section I propose in another comment) or to the section that will refer to the management functions of 2BASE-TL.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.36** *P* **95** *L* **53** # **243**
Tom Mathey Independent

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

Appears to be a bad reference. I can find no text in 63.2.2.1 for "errored seconds"

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Reference should be 63.2.2.3, as defined in a comment by Michael Horvat. See comment 868.

Cl **45** *SC* **45.2.1.37** *P* **96** *L* **19** # **872**
Kimpe, Marc Adtran

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

We agreed to include G.991.2 as reference. This subclause incorporates text from G.991.2. The text should be refered, not included.

SuggestedRemedy

Change the current text from:
"The 2B loss of sync seconds register is a 16-bit counter that contains the number of 1-second intervals during
which one or more 2BASE-TL LOSW defects are declared, as in (CROSS REF 63.2.2.1)."
"This 16-bit counter contains the number of loss of sync seconds (see CROSS REF XXX). "
where XXX is a reference. The reference can either be explicitely to section 9.3.4 of G.991.2 where the SES is defined OR (better still) add a CROSSREF to either section 63.2.2.3 (which is a new section I propose in another comment) or to the section that will refer to the management functions of 2BASE-TL.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.37** *P* **96** *L* **20** # **244**
Tom Mathey Independent

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

Appears to be a bad reference. I can find no text on "loss of sync" here.
Same for p96, line48 on "unavailable seconds".

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The signals are present in the reference text. See G.991 Clauses 9.3.5 and 7.1.2.5.4

Also see new text added in 63.2.2.3 by MK

Cl **45** *SC* **45.2.1.38** *P* **96** *L* **42** # **873**

Kimpe, Marc — Adtran

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

We agreed to include G.991.2 as reference. This subclause incorporates text from G.991.2. The text should be refered, not included.

SuggestedRemedy

Change the current text from:
"The 2B unavailable seconds register is a 16-bit counter that contains the number 1-second intervals for which the 2BASE-TL PMA/PMD is unavailable. The 2BASE-TL line becomes unavailable at the onset of 10 contiguous severely errored seconds. The 10 severely errored seconds are included in the unavailable time. Once unavailable, the 2BASE-TL line becomes available at the onset of 10 contiguous seconds with no severely errored seconds. The 10 s with no severely errored seconds are excluded from unavailable time. These bits shall be set to all zeros when the register is read by management or upon an MMD reset. These bits shall be held at all ones in case of overflow. See (CROSS REF 63.2.2.1)"
to
"This 16-bit counter contains the number of unavailable seconds (see CROSS REF XXX). These bits shall be set to all zeros when the register is read by management or upon an MMD reset. These bits shall be held at all ones in case of overflow.
where XXX is a reference. The reference can either be explicitely to section 9.3.5 of G.991.2 where the SES is defined OR (better still) add a CROSSREF to either section 63.2.2.3 (which is a new section I propose in another comment) or to the section that will refer to the management functions of 2BASE-TL.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.39** *P* **97** *L* **15** # **379**

Cravens, George — Mindspeed

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

The 2B state defects register bits should be cleared to zero upon MMD reset.

SuggestedRemedy

Add the following text to the description of the bits of the register (45.2.1.39.1 through 45.2.1.39.4), after "by the STA":

"or upon MMD reset"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.39** *P* **97** *L* **38** # **874**

Kimpe, Marc — Adtran

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

We agreed to include G.991.2 as reference. This subclause incorporates text from G.991.2. The text should be refered, not included.

SuggestedRemedy

Remove subclauses 45.2.1.39.1 to 45.2.1.39.4.
Add "Those bits are cleared to zero when read by the STA" in 45.2.1.39.
Add "See CROSS REF XXX" in 45.2.1.39.
where XXX is a reference. The reference can either be explicitely to section 9.2.3 to 9.2.6 of G.991.2 where those terms are defined OR (better still) add a CROSSREF to either section 63.2.2.3 (which is a new section I propose in another comment) or to the section that will refer to the management functions of 2BASE-TL.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.39.1** *P* **97** *L* **40** # **712**

Horvat, Michael — Infineon Technologies

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

According to clause 63.2.2 2BASE-TL does not support the use of regenerators. Therefore, this register will always remain zero.

SuggestedRemedy

Remove segment defect register.

Proposed Response *Response Status* **C**

REJECT.

Cl **45** *SC* **45.2.1.39.2** *P* **97** *L* **47** # **713**

Horvat, Michael — Infineon Technologies

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

SNR margin will be set using 2B line quality thresholds regsiter (Table 45-24).

SuggestedRemedy

Add a note that SNR margin will be set using 2B line quality register.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.39.3** *P* **98** *L* **3** # **714**

Horvat, Michael — Infineon Technologies

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

Loop attenuation threshold will be configured in 2B line quality thresholds register (Table 45-24).

SuggestedRemedy

Add a footnote that the configured loop attenuation threshold will be set in 2B line quality thresholds register.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.39.4** *P* **98** *L* **8** # **715**

Horvat, Michael — Infineon Technologies

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

Define minimum interval for clearing LOSW defect.

SuggestedRemedy

The G.991.2 standard (SHDSL) specifies a time between 2 and 20 seconds. Therefore, set a minimum interval for LOSW defect of 2 seconds.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.11.4** *P* **83** *L* **39** # **357**

Squire, Matt — Hatteras Networks

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

I'm not sure what the value of the result should be when the handshake is happening. The last result? Unsuccessful (e.g. not completed successfully)?

SuggestedRemedy

Add sentence: During the handshaking operation, the PHY shall set this value to 0 pending the handshake completion.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The bit no longer exists, see Comment 950, etc.

Cl **45** *SC* **45.2.2.16** *P* **98** *L* **11** # **1080**

Law, David — 3Com

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

It isn't clear why the text being removed here can be removed without impacting existing implementations.

SuggestedRemedy

Proposed Response *Response Status* **Z**

WITHDRAWN.

The removed text is superceded by global text in C45 stating the same thing. 802.3ah introduces many 32-bit counters. Comments on previous drafts requested that this text be moved to a global location.

See 45.2 in Draft 2.0, page 80, line 46.

Please see response to comment 1260.

Cl **45** *SC* **45.2.2.16** *P* **98** *L* **12** # **1264**

Thaler, Pat — Agilent

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

Note that these section numbers are not right. The referenced sections are 45.2.2.14 and 45.2.2.15.

The primary issue is that these changes are not correct. WIS used a valid method to define counters that span two registers. There is no reason to change the existing text and the change creates the problem that the two reads may not return consitent values.

Also, these are not in scope for .3ah.

SuggestedRemedy

Delete the changes to 45.2.2

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Fix the typo.

Please see response to comment 1260. Also, see 45.2 in Draft 2.0, page 80, line 46.

Cl **45** *SC* **45.2.2.16** *P* **98** *L* **12** # **380**
Cravens, George Mindspeed

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

There are two 45.2.2.16 sub clauses, and neither of them should be here. The first is really 45.2.2.14, and the second is 45.2.2.15, but they are both correct in the 802.3ae-2002 document, so delete mention of them here.

SuggestedRemedy

Delete both of the sub-clauses numbered 45.2.2.16.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See 1260. The text in these subclauses is correct, but is superceded by new text in 45.2, Draft 2.0, page 80, line 46.

Cl **45** *SC* **45.2.2.16** *P* **98** *L* **12** # **1079**
Law, David 3Com

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

Subclause 45.2.2.16 is not '10G WIS far end line BIP errors (Registers 2.55 and 2.56)' nor is subclause 45.2.2.16 is not '10G WIS line BIP errors (Registers 2.57 and 2.58)' - see IEEE Std 802.3ae.

SuggestedRemedy

Change the first subclause 45.2.2.16 to be 45.2.2.14. Change the second subclause 45.2.2.16 to be 45.2.2.15.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.2.16** *P* **98** *L* **14** # **573**
Booth, Brad Intel

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

Edit instructions should show the change in the affected text.

SuggestedRemedy

Show the strikethroughs on the affected text.

The first 45.2.2.16 should be 45.2.2.14.

Same would apply to the second 45.2.2.16 which should be 45.2.2.15.

Word of caution, these headings in draft D2.0 are not the same as in 802.3ae. Watch the case.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Good idea. fix the typo. See also 1080

Cl **45** *SC* **45.2.3** *P* **104** *L* **1** # **248**
Tom Mathey Independent

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

Move PCS registers to end of p98 such that MMD 3.x comes after 1.x and before 6.x. This keeps registers in numerical order.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3** *P* **104** *L* **14** # **574**
Booth, Brad Intel

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

Number the registers.

SuggestedRemedy

Start the numbering at 3.64.

Proposed Response *Response Status* **U**

REJECT.

See response to 620.

Cl **45** *SC* **45.2.3** *P* **104** *L* **38** # **1081**
Law, David 3Com

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

Need to add the reserved registers to the end of the new entries.

SuggestedRemedy

Add a new row to the end of this table that reads register address '3.x through 3.32 767' and Register name 'Reserved'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3** *P* **104** *L* **40** # **575**

Booth, Brad Intel

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

Registers 3.0, 3.1 are the primary PCS control and status registers, respectively, yet there is nothing in them that specifies that this is a 10PASS-TS or 2BASE-TL device.

SuggestedRemedy

Add bit 3.1.8, EFM enabled, 1=10PASE-TS or 2BASE-TL device present, 0=10PASS-TS or 2BASE-TL device not present, RO. Define the bit in 45.2.3.2.1, increment the bits that follow.

Add sentence to end of first paragraph of 45.2.3.1.4:
If 3.1.8 is set to one, the values set in 3.0.13, 3.0.6 and 3.0.5:2 shall be ignored.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See also response to 1084

Cl **45** *SC* **45.2.3** *P* **104** *L* **6** # **1084**

Law, David 3Com

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

Are there not additional changes required for the MMD PCS registers to support 2BASE-TL and 10PASS-TS. Looking at the contents of the MMD PCS mandatory registers (see 45.5.5.7), what for example should the Speed Selection bits (3.0.5:2) in the MMD PCS register be set to. At the moment the only speed available seems to be 10Gb/s.

SuggestedRemedy

Add additional changes to Clause 45 as necessary to support 2BASE-TL and 10PASS-TS.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Update C45 PICS to separate 10G PCS registers and 2B/10P PCS registers.

The following changes are needed to existing general PCS registers:

3.0 -- speed selection bits 13 & 6: add little table in each bit field:

13 6
----
1 1 -- bits 5:2 select speed
0 x -- Unspecified
x 0 -- Unspecified

keep the same language as found in 45.3.1.1.3 - 802.3ae

-- bits 5:2, add one row in table for 10PASS-TS and 2BASE-TL (speed variable, with a pointer to the PMA/PMD select registers for each PMA/PMD) (use the 00001 codepoint)

3.1 -- this register applies to 10B/2P. Bit 2, is already amended properly in 802.3ah D2.0

3.2:3 -- this register applies unchanged to 10P/2B, no text needed

3.4 -- add a row to the table refering to the 10PASS-TS and 2BASE-TL PCS. Note that the speed is determined by the attached PMA/PMD

3.5:6 -- remove individual tables and text for registers 5 and 6 in each individual MMD. Add a global table and text right after Table 45-1, with explanitory text. Change all references in Clause 45 from the individual reg 5,6 tables and text to the global table. Also, add the rows corresponding to the tone table and Link Partner PMA/PMD MMDs to the global table.

The rest of the C45 10G PCS registers do not apply

Cl **45** *SC* **45.2.3** *P* **81** *L* **23** # **1267**

Thaler, Pat — Agilent

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

The existing registers need to be dealt with. Registers 3.0, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.14, and 3.15 are defined as general registers. Therefore, they will apply to 10PASS-T and 10PASS-T devices. Text must be added to the existing subclauses to clarify how they are applied to the new PCS's.

SuggestedRemedy

Provide the necessary information.

Proposed Response *Response Status* **U**

ACCEPT.

See 1084

Cl **45** *SC* **45.2.3.17** *P* **105** *L* **10** # **1085**

Law, David — 3Com

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

Typo.

SuggestedRemedy

Suggest '... Only,, NR ...' should read '... Only, NR ...'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.17** *P* **105** *L* **15** # **725**

Horvat, Michael — Infineon Technologies

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

Reference not correct

SuggestedRemedy

Adjust reference to clause 61.2.3.3.3 (page 347,line 3)

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.17** *P* **105** *L* **15** # **253**

Tom Mathey — Independent

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

I note that the task force has chosen to update the 100 BASE and 1Gig PCSs for the coding violation counter, but has not updated the 10 Gig clauses such as Clause 48 and 49 to include coding violation counter.

SuggestedRemedy

Treat all historical, legacy PHYs equally. Update all or none. Thus include update of Clause 48 and 49 to include coding violation counter. What is a coding violation for 10 BASE-T, for 10 BASE-F.

Proposed Response *Response Status* **C**

REJECT.

Philosophically, the commenter may be correct, but the suggested remedy is too vague. The suggested rememdy is outside the scope of this project.

Cl **45** *SC* **45.2.3.18** *P* **105** *L* **38** # **770**

Horvat, Michael — Infineon Technologies

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

"PAF supported" is called "PAF_available" at other places

SuggestedRemedy

"change to PAF_available;adapt name also in 45.2.3.18.4"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

use "PAF available"

Cl **45** *SC* **45.2.3.18** *P* **105** *L* **40** # **771**

Horvat, Michael — Infineon Technologies

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

Information about remote side is contained in local register. For PMA/PMD-Registers there is a remote register set defined (MMD7)

SuggestedRemedy

For consistency reasons: Define a Remote PCS-Register-Set (MMD8)

MMD8 is especially important for remote access to error counters, see table 45-201

Proposed Response *Response Status* **C**

REJECT.

The EFM PMA/PMD layers already include a mechanism for transmitting their remote parameters, counters and status across the link so that the R-PMA/PMD register may work. The EFM PCS does not have a mechanism for retrieving remote PCS information.

Cl **45** *SC* **45.2.3.18** *P* **105** *L* **43** # **254**
Tom Mathey Independent

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

P339 indicates that the PAF enable on the remote can be read by the central office. Should 3.x.10 be a R/O on CPE and R/W remotely per p339. If r/w remotely, then what register holds the remote value that is to be sent to the remote.

SuggestedRemedy

Implement.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #950

Cl **45** *SC* **45.2.3.18** *P* **106** *L* **4** # **255**
Tom Mathey Independent

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

Bad cross reference; also prove actual clause 61 signal name.

SuggestedRemedy

In a PCS that I believe has no uniqueness between use in a Central Office vs use in a Remote, I do want to see the name of the signal to the PCS layer that provides such uniqueness. Also want to see text in Clause 61 that details such uniqueness. This will provide fodder for next round of comments.

Since the PCS has no uniqueness, one of the lower layers must have such uniqueness. Provide here, and in Clause 61, signal names which cross the alpha-beta to set Central Office vs Remote operation.

Scrub clauses 45, 61, 62, and 63 to ensure that all signals have a complete path from MMD register all the way to the affected destination.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Generate a comment into Clause 61.

This comment is mis-classified as an editorial. Should be technical.

The PCS is unique from CO to CPE because the CPE contains the PAF discover registers and the CO does not. I do not think the lower layers need to be aware of what type of PCS is present, therefore we don't need signals across the interfaces.

Cl **45** *SC* **45.2.3.18** *P* **106** *L* **4** # **772**
Horvat, Michael Infineon Technologies

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

wrong crossreferences

same holds for lines 9, 15, 21 and 28

SuggestedRemedy

delete crossreferences

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cross ref will be replaced with 61.1

Cl **45** *SC* **45.2.3.18.3** *P* **106** *L* **10** # **256**
Tom Mathey Independent

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

p106 line 10: provide actual clause 61 signal name
p106 line 15: provide actual clause 61 signal name
p106 line 22: provide actual clause 61 signal name
p106 line 28: provide actual clause 61 signal name, correct bad cross reference

SuggestedRemedy

Implement

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

punted to C61

Cl **45** *SC* **45.2.3.18.5** *P* **106** *L* **22** # **925**
Cravens, George Mindspeed

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

The cross reference for the Remote PAF bit is incorrect.

SuggestedRemedy

Change cross reference to: Table 61-21 for 10Pass-TS and Table 61-50 for 2Base-TL.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.18.6** *P* **106** *L* **27** # **773**
Horvat, Michael Infineon Technologies

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

"while link is active" should be described more concrete. Which signal should have which value?

SuggestedRemedy

Add required information: TC_synchronized? Data mode reached?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

change "link is active" to

"while like is up or initializing see CROSS REF. . ."

Cl **45** *SC* **45.2.3.19.2** *P* **107** *L* **6** # **926**
Cravens, George Mindspeed

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

For PHYs that only support MII, the Tx_En and CRS infer collision bit is unneeded. Add text stating that the bit will default to a supported mode, and writes to unsupported modes are ignored.

SuggestedRemedy

Add text:

This bit will default to a supported mode, and writes to unsupported modes will be ignored.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.2.2** *P* **104** *L* **42** # **768**
Horvat, Michael Infineon Technologies

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

wrong crossref.

SuggestedRemedy

Crossref to 61.2.3.3.7, signal "TC_synchronized"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.2.2** *P* **104** *L* **42** # **249**
Tom Mathey Independent

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

This bit should be a Latching Low version of PCS link status, just like in 802.3ae. Actual present link status should be in another 3.x.y, just like in 802.3ae. For the new 3.x.y register, reference the PCS signal TC_Sync'd.

SuggestedRemedy

Implement

Proposed Response *Response Status* **C**

ACCEPT.

The written behavior definition does not mesh with the original .3ae latched low behavior. The comment is correct.

Cl **45** *SC* **45.2.3.2.2** *P* **104** *L* **47** # **250**
Tom Mathey Independent

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

Text ", The" should be lower case for "the"

SuggestedRemedy

Lower case

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.2.2** *P* **104** *L* **47** # **251**
Tom Mathey Independent

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

Bad cross reference.

SuggestedRemedy

61.2.3.3.7

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.2.2** *P* **104** *L* **48** # **1083**
Law, David 3Com

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

Suggest that a particular state in a State Diagram should be referenced in relation to the text '.. function is synchronized.'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

TC_synchronized as in Figure 61-19.

Cl **45** *SC* **45.2.3.20** *P* **107** *L* **7** # **257**
Tom Mathey Independent

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

Add text "3.45, 3.46" to clause title.
Also, someplace in the text prove actual clause 61 signal name or names.

SuggestedRemedy

Implement.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 61.2.2.7.3 needs a little rewrite so that the registers are actually defined in C61 and then C45 can be changed accordingly to be a window into these registers. As the text appears now, the register is wholly defined in C45.

Similar comment against clause 61 was resolved and agreed to rewrite appropriately. Follow the resolution of that comment.

Cl **45** *SC* **45.2.3.21** *P* **107** *L* **43** # **258**
Tom Mathey Independent

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

Add text "3.47, 3.48" to clause title.
Also, someplace in the text prove actual clause 61 signal name or names.

SuggestedRemedy

Implement.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause 61.2.2.7.3 needs a little rewrite so that the registers are actually defined in C61 and then C45 can be changed accordingly to be a window into these registers. As the text appears now, the register is wholly defined in C45.

See corrections in Clause 61.

Cl **45** *SC* **45.2.3.21** *P* **107** *L* **45** # **774**
Horvat, Michael Infineon Technologies

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

What is meant by "adressed PMI"? This register is available per PCS, not per PMI.

SuggestedRemedy

change to "adressed PCS"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

change sentence:

"The …. register is used to select PMIs for aggregation."

Cl **45** *SC* **45.2.3.21** *P* **107** *L* **49** # **775**
Horvat, Michael Infineon Technologies

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

Purpose of this paragraph is not clear.

SuggestedRemedy

change to "The 10P/2B PMI_aggregate_register shall be available per PCS".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

same change to the PMI available register

Cl **45** *SC* **45.2.3.21** *P* **107** *L* **54** # **726**

Horvat, Michael — Infineon Technologies

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

Definition of PAF not clear if just 1 bit in PMI aggregate register is set.

SuggestedRemedy

Add a note that PAF will be done if the corresponding bit in the PMI aggregate register is set (also applies if just 1 bit is set).

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.22** *P* **108** *L* **17** # **948**

O'Mahony, Barry — Intel Corp.

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

This senction defines registers for remotely accessing the CPE remote_discovery_register. However, registers for accessing the CPE PMI_Aggregate_register are missing (in 61.2.2.7.3, it states this register is remotely accessable).

SuggestedRemedy

Add a sublcause, substantially similar to 45.2.3.22, but defining registers to read and set the remote PMI_Aggregate_register

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Reference new text in 61. Setting this new register would cause an immediate handshake message to set the remote register.

Cl **45** *SC* **45.2.3.22** *P* **108** *L* **26** # **329**

Simon, Scott — Cisco Systems, Inc.

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

More text is required to specify when this register may be used and the behavior of the bits.

SuggestedRemedy

Add the text:

"This register may only be accessed while link is down. Writes to this register while the link is up shall be ignored."

Change 3rd sentence of 45.2.3.18.5 to read:

"This bit shall be set acordingly follwing the completion of a 'Get' operation perfomed using the 10P/2B aggregation discovery control register"

Add the appropriate PICS entries to capture this behavior.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

"This register may not be accessed while link is up or initializing as in (CROSS REF) . Writes to this register while the link is up or initializing shall be ignored."

Harmonize with 950.

Cl **45** *SC* **45.2.3.22.1** *P* **108** *L* **54** # **928**

Cravens, George — Mindspeed

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

If PAF is not supported, the Discovery Operation bits should indicate "Ready" and ignore writes.

SuggestedRemedy

Add text:
If PAF is not supported, the Discovery Operation bits should indicate "Ready" (value = 01) and ignore writes.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.22.1** *P* **109** *L* **13** # **930**

Cravens, George Mindspeed

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

The Discovery Operation bits should return to the "Ready" state (value = 01) upon MMD Reset.

SuggestedRemedy

Add text:

The Discovery Operation bits should return to the "Ready" state (value = 01) upon MMD Reset.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.22.2** *P* **109** *L* **23** # **929**

Cravens, George Mindspeed

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

If PAF is not supported, the Discovery Operation Result bit should indicate "operation completed successfully" (value = 0) and ignore writes.

SuggestedRemedy

Add text:
If PAF is not supported, the Discovery Operation Result bit should indicate "operation completed successfully" (value = 0) and ignore writes.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.22.2** *P* **109** *L* **23** # **931**

Cravens, George Mindspeed

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

The Discovery Operation should have a time limit after which the Discovery Operation Result bit should be set to 1 (operation unsuccessful), and the Discovery Operation bits should be set to "ready" (value = 01).

A timeout will prevent the possibility of a hang-up on the interface due to corrupted responses, or mis/non-behaviour on the part of the link partner.

SuggestedRemedy

Add text:

If the Discovery Operation Result does not complete within a 3 second timeout, the Discovery Operation bit will be set to "1" (operation unsuccessful), and the Discovery Operation bits will be set to "01" (ready).

NOTE: The 3 second timeout value is simply a placeholder. A value must be specified (TBD is unacceptable), and any value agreed to by the appropriate experts is acceptable.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The number shall be 255.

Cl **45** *SC* **45.2.3.23** *P* **109** *L* **24** # **776**

Horvat, Michael Infineon Technologies

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

aggregation_discovery_code_register: according to the description in chapter 61A, this register must be available per PMI, not per PCS.

SuggestedRemedy

move register into chapter 45.2.1 (PMA/PMD registers).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

also move discovery control register

Cl **45** *SC* **45.2.3.23** *P* **109** *L* **37** # **932**

Cravens, George Mindspeed

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

Add reference to the clause 61 tables describing access to the remote values.

SuggestedRemedy

Add text:

(See Tables 61-41 through 61-48 for 10Pass-TS and Tables 61-111 through 61-118 for 2Base-TL.)

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.24** *P* **109** *L* **51** # **933**

Cravens, George Mindspeed

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

The PAF error registers and the TPS-TC CRC error register should be part of the "-R" MMD set so that the "-O" PHY can access the information for debug.

SuggestedRemedy

Add text necessary to include the following registers in the "-R" MMD set:

10P/2B PAF Rx error register
10P/2B PAF small fragments register
10P/2B PAF large fragments register
10P/2B PAF overflow register
10P/2B PAF bad fragments register
10P/2B PAF lost fragments register
10P/2B PAF lost start of fragment register
10P/2B PAF lost end of fragment register
10P/2B TPS-TC CRC error registers

Proposed Response *Response Status* **C**

REJECT.

C61 does not provide a mechanism to read this information over the link, so we cannot provide registers to read them over the link

Cl **45** *SC* **45.2.3.24** *P* **110** *L* **3** # **260**

Tom Mathey Independent

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

p110 line 3 provide actual clause 61 signal name
p110 line 19 bad cross reference, also provide actual clause 61 signal name
p110 line 36 bad cross reference, also provide actual clause 61 signal name
p110 line 54 bad cross reference, also provide actual clause 61 signal name
p111 line 21 prove actual clause 61 signal name
p111 line 36 bad cross reference, also prove actual clause 61 signal name
p112 line 2 prove actual clause 61 signal name
p112 line 20 prove actual clause 61 signal name

SuggestedRemedy

Implement

Proposed Response *Response Status* **C**

ACCEPT.

will provide signal names and fix references.

Cl **45** *SC* **45.2.3.32** *P* **112** *L* **31** # **261**

Tom Mathey Independent

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

Do not increment this counter if coding violation occurs.
p112 line 34 bad cross reference, also prove actual clause 61 signal name
p112 line 34 primitive s/b signal or variable

Add text that if the coding violation counter is incremented, this counter is not incremented. This maintains the MIB philosophy that any given error increments one and only one management counter.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.32** *P* **112** *L* **34** # **777**

Horvat, Michael Infineon Technologies

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

wrong crossref.

SuggestedRemedy

Cross ref to 61.2.3.3.9

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.98** *P* **99** *L* **1** # **1265**
Thaler, Pat Agilent

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

This clause defines device 6 so it should be inserted after DTE XS. Such a change is also much less disruptive. Other clauses reference existing clause 45 subclauses so the suggested renumbering would ripple all through the standard.

SuggestedRemedy

This subclause should be 45.2.6 Similarly 45.2.99 should be 45.2.7.

Proposed Response *Response Status* **U**

ACCEPT.

Make the appropriate changes to insert the MMDs in subclauses 45.2.6 and 45.2.7

Cl **45** *SC* **45.2.98** *P* **99** *L* **17** # **1266**
Thaler, Pat Agilent

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

Need to say that the rest of the registers are reserved.

SuggestedRemedy

Add the statement.

Proposed Response *Response Status* **U**

ACCEPT.

Cl **45** *SC* **45.2.98** *P* **99** *L* **5** # **246**
Tom Mathey Independent

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

Add text to title (Register 6.0) to make it easy to spot just where you are at.
Also p101 line 4 add (Register 7.0).

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.99** *P* **101** *L* **22** # **913**
Cravens, George Mindspeed

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

The details of the access method for the "-R" registers needs to be explained (at least by cross reference). It seems that this explanation belongs in Clauses 62 and 63, with a brief mention and cross reference here in clause 45.

(Note: This would be classified as a TR if I were going to be present at the interim.)

SuggestedRemedy

Insert a brief paragraph describing how the "-R" registers are transferred across the link along with a cross reference to the appropriate (currently non-existant) sub-clauses in 62 and 63.

The cross reference looks like it should be to 62.3.4.6.4 for 10Pass-TS and 63.1.4.3 (and a new 63.3.2.3) for 2Base-TL.

Proposed Response *Response Status* **C**

ACCEPT.

Insert such a paragraph. Reference resolution to 915.

Link with Comment 915 against C63 and Comment 823

Cl **45** *SC* **45.2.99** *P* **101** *L* **24** # **716**
Horvat, Michael Infineon Technologies

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

STA command is called "get link partner parameters" and not "retrieve link partner parameters".

SuggestedRemedy

Replace "retrieve" with "get".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.99** *P* **101** *L* **26** # **717**
Horvat, Michael Infineon Technologies

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

Using the command "get link partner parameters" results in a read of all '-R' registers and, therefore, all MMD #7 registers will be updated.

SuggestedRemedy

Add a comment that using the command "get link partner parameters" will update all MMD #7 registers.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.99** *P* **101** *L* **50** # **718**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A** *done*
Wrong register name; register is not called 2B paramter register, but it is called 2B PMD.

SuggestedRemedy
Replace 2B parameter register by 2B PMD register.

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

Cl **45** *SC* **45.2.99** *P* **101** *L* **54** # **719**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A** *done*
Typo in register address; address only consists of 2 digits.

SuggestedRemedy
Remove last digit (1) in register address.

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

Cl **45** *SC* **45.2.99.1** *P* **102** *L* **28** # **721**
Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A** *done*
Chapter 45.2.1 defines dedicated registers for status and control.

SuggestedRemedy
Split up R-PMA/PMD control register to 2 registers: 1 control and 1 status.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

R/W registers go to control, RO go to status.

Cl **45** *SC* **45.2.99.1** *P* **102** *L* **44** # **764**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **R** *done*
Not just "read only", but also "clear on read"

SuggestedRemedy
Add "clear on read" information

Proposed Response *Response Status* **C**
REJECT.

Cl **45** *SC* **45.2.99.1** *P* **102** *L* **49** # **765**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **R** *done*
Not just "read only", but also "clear on read"

SuggestedRemedy
Add "clear on read" information

Proposed Response *Response Status* **C**
REJECT.

Cl **45** *SC* **45.2.99.1** *P* **103** *L* **26** # **247**
Tom Mathey Independent

Comment Type **E** *Comment Status* **A** *done*
Bad grammar.

SuggestedRemedy
Perhaps solved by removing word "which".

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

Remove "which"

Cl **45** *SC* **45.2.99.1** *P* **103** *L* **5** # **766**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **R** *done*
Not just "read only", but also "clear on read"

SuggestedRemedy
Add "clear on read" information

Proposed Response *Response Status* **C**
REJECT.

The bit reflects the result of the previous operation or a zero if reset. There is no need to clear the bit on read.

Cl **45** *SC* **45.2.99.1.1** *P* **103** *L* **12** # **722**
Horvat, Michael Infineon Technologies

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

Description of how all the commands should be decoded at the '-R' device is missing.

SuggestedRemedy

Define dedicated EOC/VOC messages for "get link partner parameters", "get link partner result", "send link partner parameters", "send link partner result", "activate link partner parameters" and "activate link partner result".

For 2BASE-TL use EOC message IDs from 95.

Proposed Response *Response Status* **C**

REJECT.

We are not adding new EOC/VOC messages. The PHY will have to use the pre-existing messages to gather all of the parameters when these commands are executed.

See comment 950

Cl **45** *SC* **45.2.99.1.2** *P* **103** *L* **25** # **920**
Cravens, George Mindspeed

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

The time to acquire link partner results (due to a Get, Send, or Activate command) cannot be unbounded since all writes to MMD #7 (the "-R" PMA/PMD) are ignored during this time.

Add text defining a timeout period for the link partner results. If the results have not been returned before the timeout expires, the result will be marked as "failed" and the corresponding operation will be marked as "complete".

NOTE: The timeout period may need to be configurable, but there should be a default value in the spec.

SuggestedRemedy

Replace the sentence at line 25 with the following:

The "Get Link partner parameters" operation must complete within 3 seconds, or its result will be marked as "failed" and the operation marked as "complete".

NOTE: The value of 3 seconds is simply a swag. Please have the relevant experts come up with an appropriate number.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

use 10 seconds

Cl **45** *SC* **45.2.99.2** *P* **103** *L* **40** # **723**
Horvat, Michael Infineon Technologies

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

Action of an unsuccessful "send link partner paramters" missing.

SuggestedRemedy

Copy from section 45.2.99.1.2 last sentence (beginning line 26) and append it to line 40.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.99.2.1** *P* **103** *L* **42** # **921**
Cravens, George Mindspeed

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

The time to acquire link partner results (due to a Get, Send, or Activate command) cannot be unbounded since all writes to MMD #7 (the "-R" PMA/PMD) are ignored during this time.

Add text defining a timeout period for the link partner results. If the results have not been returned before the timeout expires, the result will be marked as "failed" and the corresponding operation will be marked as "complete".

SuggestedRemedy

Insert the following text:

The "Send Link partner parameters" operation must complete within 3 seconds, or its result will be marked as "failed" and the operation marked as "complete".

NOTE: The value of 3 seconds is simply a swag. Please have the relevant experts come up with an appropriate number.

Proposed Response *Response Status* **C**

ACCEPT.

Use 10 seconds

Cl **45** *SC* **45.2.99.2.3** *P* **103** *L* **54** # **922**

Cravens, George Mindspeed

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

The time to acquire link partner results (due to a Get, Send, or Activate command) cannot be unbounded since all writes to MMD #7 (the "-R" PMA/PMD) are ignored during this time.

Add text defining a timeout period for the link partner results. If the results have not been returned before the timeout expires, the result will be marked as "failed" and the corresponding operation will be marked as "complete".

SuggestedRemedy

Insert the following text:

The "Activate Link partner parameters" operation must complete within 3 seconds, or its result will be marked as "failed" and the operation marked as "complete".

NOTE: The value of 3 seconds is simply a swag. Please have the relevant experts come up with an appropriate number.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use 10 seconds

Cl **45** *SC* **45.2.99.2.3** *P* **103** *L* **54** # **724**

Horvat, Michael Infineon Technologies

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

Action of an unsuccessful "activate link partner parameters" missing.

SuggestedRemedy

Copy from section 45.2.99.1.2 last sentence (beginning line 26) and append it to line 54.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.5** *P* **113** *L* **1** # **450**

James, David JGG

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

Excessive length subclause title, which would mandate manual table-of-contents updates to correct wrapping error, which is (in itself) prone to human errors.

SuggestedRemedy

1) Change:
Clause 45, MDIO/MDC management interface
==>
Clause 45
2) Use a nonbreaking space within:
Clause 45
^
3) Apply the same heading-text changes to all PICS headings.

Proposed Response *Response Status* **C**

REJECT.

This comment is out of scope as the clause title in this case is only a reference to a clause that is being amended in this draft.

Cl **45** *SC* **45.5.5.5** *P* **116** *L* **8** # **451**

James, David JGG

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

Brackets look like a square box.

SuggestedRemedy

Change:
[]
==>
[ ]
^
two thin spaces

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-1** *P* **81** *L* **2** # **710**
Horvat, Michael Infineon Technologies

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

Device address 7 registers R-PMA/PMD are only defined for '-O' devices.

SuggestedRemedy

Add a footnote that device address 7 registers are only defined for '-O' devices.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add the text to 45.2

Cl **45** *SC* **Table 45-101** *P* **102** *L* **10** # **918**
Cravens, George Mindspeed

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

The 10P/2B PMA/PMD link loss register, 10P FEC correctable errors register and 10P uncorrectable errors register are missing from the table. All of the other error registers are present, and these should be as well.

SuggestedRemedy

Add entries in Table 45-101 for the 10P/2B PMA/PMD link loss register (45.2.1.13), the 10P FEC correctable errors register (45.2.1.14), and the 10P FEC uncorrectable errors register (45.2.1.15).

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-101** *P* **102** *L* **13** # **917**
Cravens, George Mindspeed

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

The 2B PMD Parameters register comes before the 2B Rx SNR register (see 45.2.1.31).

SuggestedRemedy

Move line 13 (2B PMD parameters) above the 2B Rx SNR row.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-101** *P* **102** *L* **3** # **720**
Horvat, Michael Infineon Technologies

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

Register 2B general parameter missing in this table.

SuggestedRemedy

Add a line with register 2B general parameter to table 45-101.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-101** *P* **102** *L* **3** # **916**
Cravens, George Mindspeed

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

The column header "R-PMA/PMD" is followed by a (6). This should be (7) for MMD 7.

SuggestedRemedy

Change the (6) to (7).

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-101** *P* **102** *L* **4** # **763**
Horvat, Michael Infineon Technologies

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

In the header of table 45-101, the MMD of R-PMA/PMD is "6"

SuggestedRemedy

Change to 7

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-102** *P* **102** *L* **44** # **919**
Cravens, George Mindspeed

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

Each of the three result bits (Get, Send, and Activate) should be marked "LH".

SuggestedRemedy

Mark bits 14, 13, and 10 as "RO, LH" in the R/W* column.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-11** *P* **87** *L* **40** # **371**
Cravens, George Mindspeed

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

Downstream (and upstream) data rates are described as multiple of 64,000 bits per second. Is this correct? (As opposed to 64 kbps multiples?)

Same for the upstream data rates (Table 45-14).

SuggestedRemedy

Change table entries (two per table in Table 45-11 and 45-14)to:

"Data rate = M x 64 kbps"

Proposed Response *Response Status* **C**

REJECT.

The text is correct.

Cl **45** *SC* **Table 45-12** *P* **88** *L* **12** # **372**
Cravens, George Mindspeed

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

Interleaver Parameters "M" and "I" are in a second register ("Bit(s)" should say "1.x+1.").

Same goes for the upstream register (Table 45-15).

SuggestedRemedy

Fix the "Bit(s)" column for the Interleaver Parameters "M" and "I".

Change to 1.x+1.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Separate into two separate 16 bit registers.

Cl **45** *SC* **Table 45-12** *P* **88** *L* **5** # **144**
Dawe, Piers Agilent

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

This standard isn't written in C; its chosen programming language is (pseudo) Pascal. Clause 45 like most of 802.3 did not use "0x" up until now and new notation is not worth the reader's while for just a few occurrences.

SuggestedRemedy

Please replace "0x10" with "hexadecimal 10" and similarly, in this table and table 54-15, and on p109.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Denote hex with a subscript 16

Cl **45** *SC* **Table 45-12** *P* **88** *L* **5** # **373**
Cravens, George Mindspeed

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

The RS overhead field can only contain one legal value (0x10), so it should be either removed or labeled "Read Only".

SuggestedRemedy

Change the "R/W*" column entry for RS Overhead to "RO".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

remove the bits, mark as reserved.

Cl **45** *SC* **Table 45-13** *P* **88** *L* **32** # **374**
Cravens, George Mindspeed

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

The Max DS VOC frame size description calls out EOC (same as the previous line).

If the table is correct, then the text needs to at least explain the acronynms (VOC & EOC), and preferably explain why two register parameters are needed for the same description. (Sub-clause 62.2.4.5 doesn't explain much of anything.)

Same goes for the Upstream EOC/VOC register (table 45-16).

SuggestedRemedy

NOTE: This may just be editorial, but I can't be sure based on the explanation, thus the "technical" label.

Change EOC to VOC if that would be correct, and add a sentence or two to explain what this does (or a cross reference to text that provides the explanation).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

It's just a typo, but these registers go away with resolution of comment #828

Cl **45** *SC* **Table 45-13** *P* **88** *L* **32** # **232**
Tom Mathey Independent

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

Name uses VOC, Description uses EOC

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change EOC in line 32 to VOC

Cl **45** *SC* **Table 45-16** *P* **89** *L* **50** # **234**
Tom Mathey Independent

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

Name uses VOC, Description uses EOC

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change EOC in line 49 to VOC

Cl **45** *SC* **Table 45-18** *P* **91** *L* **5** # **375**
Cravens, George Mindspeed

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

Spurious line appears in the "Bit(s)" column:
1.x.4:0.

SuggestedRemedy

Delete the following entry from the "Bit(s)" column: 1.x.4:0.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-18** *P* **91** *L* **6** # **236**
Tom Mathey Independent

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

1.x.4:0 for min snr margin seem to be already used by target snr margin
also, line 10 for 2.x should be 1.x

SuggestedRemedy

Do we need a separate register for target?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The comment is correct. Target SNR should be split out into non overlapping bits. Also the text for target SNR refers to Min SNR, correct.

line 10 should be corrected as commented.

Cl **45** *SC* **Table 45-2** *P* **81** *L* **37** # **360**
Cravens, George Mindspeed

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

To be consistent with the existing registers in Clause 45 and Clause 22, the Control Register and Status register's addresses should be swapped (Control reg = 0, Status = 1).

NOTE: This also requires swapping clause 45.2.1.11 (the Status register definition), and 45.2.1.12 (the Control register definition).

SuggestedRemedy

Change the order of the 10P/2B PMA/PMD Status register and the 10P/2B PMA/PMD Control register so that the Control register has the lower address.

Also renumber sub-clause 45.2.1.11 (the status register definition) to 45.2.1.12, and sub-clause 45.2.1.12 (the control register definition) to 45.2.1.11.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Status is going away anyway, as per Scott Simon's comment

Cl **45** *SC* **Table 45-2** *P* **81** *L* **42** # **361**
Cravens, George Mindspeed

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

Several of the registers in the table consume multiple addresses which are not shown.

For multiple-word registers, either add lines in the table to describe all valid addresses, or revise the entries to denote the register size.

SuggestedRemedy

Modify Table 45-2 to show that the following registers are multiple words wide:

10P FEC correctable errors counter (MS, LS)
10P FEC uncorrectable errors counter (MS, LS)
10P downstream datarate configuration (min, max)
10P downstream RS/inteleaver configuration (RS, Interleaver)
10P upstream data rate (min, max)
10P upstream RS/inteleaver configuration (RS, Interleaver)
10P tone group (lower, upper)
10P tone control parameter (actually three registers)

2B code violation errors counter (MS, LS)

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-2** *P* **82** *L* **10** # **362**

Cravens, George — Mindspeed

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

Two registers are missing from the table:

10P tone control action register
10P indicator bits status register

SuggestedRemedy

Add the two missing registers to the table:

10P tone control action register
10P indicator bits status register

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-2** *P* **82** *L* **10** # **758**

Horvat, Michael — Infineon Technologies

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

In table 45-2, the two registers "10P tone control action" and "10P indicator bits status" are missing. See 45.2.1.28 and 45.2.1.29

SuggestedRemedy

Add registers in table.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-20** *P* **92** *L* **38** # **239**

Tom Mathey — Independent

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

What is the definition of "slow data", this seems like an unsupported option.

SuggestedRemedy

Scrub document and remove all options. Only operating modes are supported.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

reserve bits 2,3

Add explanitory subclause that states that we are using the "slow channel" from t1.424 are we refer to it here to ease a comparison of the two documents.

Cl **45** *SC* **Table 45-201** *P* **104** *L* **10** # **767**

Horvat, Michael — Infineon Technologies

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

Table 45-201: register names not identical to the names used in clause 61

SuggestedRemedy

Make register names consistent (use underscore, append "_register" etc.)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This is intentional since the registers in Clause 61 are separate entities than the management method used to access them.

Add exact register name references to the description of each register.

Cl **45** *SC* **Table 45-203** *P* **105** *L* **26** # **769**

Horvat, Michael — Infineon Technologies

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

Table 45-203: register names not identical to the names used in clause 61

SuggestedRemedy

make register names consistent (use underscore etc.)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This is intentional since the registers in Clause 61 are separate entities than the management method used to access them.

Add the reference in the descriptive text to the exact name in C61.

Cl **45** *SC* **Table 45-203** *P* **105** *L* **33** # **924**

Cravens, George — Mindspeed

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

Add "-O" to bit 14's definition (CO supported), and "-R" to bit 13's definition since those are the official names.

SuggestedRemedy

Add "-O" to bit 14's definition (CO supported), and "-R" to bit 13's definition since those are the official names.

Also add "(-O)" after CO in 45.2.3.18.2, pg. 106, line 3, and add "(-R)" after CPE in 45.2.3.18.3, pg. 106, line 9.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-22** *P* **93** *L* **44** # **378**
Cravens, George Mindspeed

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

Two undocumented states for the Constellation field should be defined as "reserved".

SuggestedRemedy

Add two lines to the "Constellation" field description:

11 = reserved
10 = reserved

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **Table 45-25** *P* **95** *L* **10** # **711**
Horvat, Michael Infineon Technologies

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

Not clear whether counter overflows or does not overflow.

SuggestedRemedy

Non-roll-over counter; clearing read or upon MMD reset, in case of an overflow held to all one.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Please see response to comment 1260.

Cl **45** *SC* **Table 45-29** *P* **97** *L* **1** # **761**
Horvat, Michael Infineon Technologies

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

"clear on read" missing in table 45-29

SuggestedRemedy

Add "clear on read". Define whether also clear when read from remote side.

Proposed Response *Response Status* **C**

REJECT.

Clear on read is not indicated in the table.

Cl **45** *SC* **Table 45-30** *P* **97** *L* **20** # **762**
Horvat, Michael Infineon Technologies

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

"clear on read" missing in table 45-30

SuggestedRemedy

Add "clear on read" where appropriate. Define whether also clear when read from remote side.

Proposed Response *Response Status* **C**

REJECT.

Clear on read is not indicated in the table.

Cl **45B** *SC* **45B** *P* **164** *L* **01** # **1090**
Law, David 3Com

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

Line 1 uses the term '... Clause 45 registers ...' however line uses the term '... Clause 45 MMD ...'.

SuggestedRemedy

Suggest that 'Clause 22 provides access to Clause 45 registers using registers 13 and 14.' should read.' should read 'Clause 22 provides access to registers in a Clause 45 MMD using registers 13 and 14.'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45B** *SC* **45B** *P* **164** *L* **01** # **1045**
Law, David 3Com

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

I would hope that the Clause 22 describe how accesses to registers 13 and 14 work. Instead what I think this Annex describes is how registers 13 and 14 can be used to access MMDs.

SuggestedRemedy

Suggest that the text 'This informative annex provides users with some insight regarding how these accesses are intended to work.' to read 'This informative annex provides users with some insight how these registers can be utilized to access Clause 45 registers.'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45B** *SC* **45B** *P* **164** *L* **01** # **1046**

Law, David 3Com

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

Line 1 states that register 13 and 14 are used to access '... Clause 45 registers ...' yet line 3 states these registers are used to access '... registers in a Clause 45 MMD ...'. Please use a consistent term.

SuggestedRemedy

See comment - please use a consistent term.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: "Clause 22 provides access to Clause 45 registers using registers 13 and 14."

to read: "Clause 22 provides access to Clause 45 MMD registers using registers 13 and 14."

Cl **45B** *SC* **45B.4** *P* **165** *L* **38** # **1044**

Law, David 3Com

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

This text states that 'MMDs with the same PHY Address, regardless of their access mechanisms, can coexist on the same bus using different Device Address values.' and then goes on to state 'MMDs using the Clause 22 access mechanism and sharing a common PHY address avoid bus conflicts using Device Address as well. However, the Device Address is available from the contents of the MMD's register 13.'

This Annex is informative so in itself cannot require the behavior described above from a Clause 22 device, nor, to be fair, does it try. The problem is that based on existing Clause 22 description it is permissible from a device to drive the MDIO line based only on a read cycle to its PHYADDR. There is no change that I can see to Clause 22 proposed in IEEE P802.3ah to change this to support any other behavior therefore the text reproduced above is not correct and should be removed.

Even if there were additional changes to Clause 22 to support this particular behavior, the implication that a MMD can be supported only by a Clause 22 logical interface would require other considerations. Clause 22 for example only supports a PHY, not MMDs. It further requires the provision of register 0 and 1 and 15 based on the PHY interface type, either MII or GMII. Based on this consider the case MMDs that form a single MII PHY supported only through Clause 22 logical interfaces. Since registers 0 and 1 are mandatory, they would also have to be provided in all MMDs. How is contention prevented when the status register 0 is read - which control register 1 when written to would actually have any effect.

To summarize the problem, as far as I am aware, there has been no proposal to modify Clause 22 to support stand alone MMDs.

SuggestedRemedy

Change the text 'MMDs with the same PHY Address, regardless of their access mechanisms, can coexist on the same bus using different Device Address values.' to read 'MMDs accessible via the Clause 45 access mechanism with the same PHY Address can coexist on the same bus using different Device Address values.'

Change the text 'Coexistence of MMDs with the same PHY Address is worth more consideration. MMDs using the Clause 45 access mechanism and sharing a common PHY address avoid bus conflicts because Device Address is part of the frame structure. Only an MMD with a matching Device Address responds to the bus access. MMDs using the Clause 22 access mechanism and sharing a common PHY address avoid bus conflicts using Device Address as well. However, the Device Address is available from the contents of the MMD's register 13.' to read 'Coexistence of MMDs with the same PHY Address is worth more consideration. MMDs using the Clause 45 access mechanism and sharing a common PHY address avoid bus conflicts because Device Address is part of the frame structure. Only an MMD with a matching Device Address responds to the bus access.'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **45B** *SC* **45B.4** *P* **165** *L* **50** # **455**
James, David JGG

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

Improper list usage.

SuggestedRemedy

Use the first-level list styles, not the second level.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **46** *SC* **46** *P* **123** *L* **1** # **452**
James, David JGG

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

The orphan 46 number looks strange.

SuggestedRemedy

Use a nonbreaking space within:
Clause 46
^

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This issue goes away with the document restructuring adopted with the resolution of comment #952.

Cl **46** *SC* **46** *P* **124** *L* **1** # **453**
James, David JGG

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

Excessive capitalization.

SuggestedRemedy

Change:
Reconciliation Sublayer (RS) and 10 Gigabit Media Independent Interface (XGMII)

==>

Reconciliation sublayer (RS) and 10 gigabit media independent interface (XGMII)

Proposed Response *Response Status* **C**

REJECT.

This is outside the scope of P802.3ah as this is copied from the approved standard that has already been reviewed by the IEEE editors.

Cl **46** *SC* **46** *P* **124** *L* **10** # **1230**
Thaler, Pat Agilent

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

There is nothing to be gained by transmitting when receiving Remote Fault. Your link partner can't receive the transmission.

SuggestedRemedy

Remove transmission when receiving Remote Fault or explain its use.

Proposed Response *Response Status* **U**

REJECT.

To have uniform OAM Link Fault signaling, the OAM sublayer will interpret the Clause 46 link fault status=Remote Fault as the value FAIL. Under this condition, the OAM sublayer will transmit link fault OAMPDUs. These need to be transmitted.

Cl **46** *SC* **46** *P* **124** *L* **10** # **1229**
Thaler, Pat Agilent

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

This is being inserted without any context. Reference the location of the description of unidirectional OAM capability and explanation of when it is appropriate. Also, the first usage of OAM in the clause should be expanded to.

The consequences of setting the variable TRUE are not made apparent to the reader. For example, it should state explicitly that setting the variable TRUE disables auto-negotiation.

SuggestedRemedy

Provide a suitable reference. Provide information here on when this variable should not be set TRUE. In many cases such as operation with standard bridges, we rely on knowing that the link is either bidirectional or not there at all. It is only in environments designed to tolerate unidirectional operation that this variable should be set TRUE.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Make the following as part of the introductory text for the "changes to Clause 46" portion of the new Clause 66.

The 10Gb/s RS is capable of unidirectional operation in order to support Operations, Administration and Management (OAM) for a subscriber access network. However, this mode should only be enabled when the OAM sublayer above the MAC (see Clause 57) is enabled on both ends of the link. Failure to follow this restriction results in an incompatibility with the assumptions of the bridge protocol.

Cl **46** *SC* **46.3.4** *P* **124** *L* **16** # **335**

Grow, Robert Intel

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

IPG may not be a multiple of four bytes and remote fault is a four byte status, therefore, not all IPG can be replaced with Remote Fault. The Terminate is also part of the interframe spacing.

SuggestedRemedy

Delete "all".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **46** *SC* **46.3.4.2** *P* **124** *L* # **1228**

Thaler, Pat Agilent

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

This change effectively disables detection of remote fault when unidirectonal_oam_enable is true because it doesn't take into account the behavior of the Link Fault Signalling state machine. The existing Link Fault Signalling state machine cancels a sequence ordered set if it doesn't see one for 127 columns. Also, to prevent false detection due to noise, it requires 3 sequence ordered sets before it will detect. If there are packets, it detect the sets intermittently or not at all.

SuggestedRemedy

Take out undirectional operation for 10 Gig or propose an alternate Link Fault Signalling state machine that will when unidirection operation is enabled so that Remote Fault may be detected when intersperced with packts.

Proposed Response *Response Status* **U**

REJECT.

With the response to comment 57001 that limits the frequency of OAMPDUs reporting Remote Fault to once per second, the following description is valid.

If the RS is receiving Remote Fault, the only frames that it will be interrupted with are those that also report the Link Fault. These packets are currently only 64 octets and not long enough to force the Link fault signaling state diagram to receive 127 columns without an Sequence ordered set. This includes when both ends of the link have a XAUI extension of the XGMII. With the response to comment 57001 the frequency of these packets is limited to once per second.

In the interest of supporting a common mechanism across all physical layers to support the announcement of Link Fault, this should be retained.

Cl **46** *SC* **46.3.4.3** *P* **124** *L* **44** # **336**

Grow, Robert Intel

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

PICS items LF4 and LF5 are in disagreement with the changes.

SuggestedRemedy

Amend the PICS items. Add a new PICS item for the transmission of a column of idles.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change LF2 Features to read:

((link_fault = OK) or (link_fault = Local Fault and Unidirection_Oam_Enable=TRUE)) and MAC frames

Change LF4 Features to read:

link_fault = Local Fault and Unidirection_OAM_Enable = False

Add LF6 to read:

link_fault = Local Fault and Unidirection_OAM_Enable = True and no MAC frames

After completing the transmission of a MAC frame and transmitting one full column of IDLE, in the absence of MAC frames, RS transmits continuous Remote Fault Sequence ordered_sets

Need additional changes to keep packet transmission during reception of RF and transmission of IDLE.

Cl **56** *SC* *P* **169** *L* **36** # **456**

James, David JGG

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

Excessive capitalization.

SuggestedRemedy

Change:
1000BASE-X Physical Coding Sublayer (PCS)
==>
1000BASE-X physical coding sublayer (PCS)

Physical Medium Attachment(PMA)
==>
physical medium attachment(PMA)

Signal to Noise Ratio (SNR)
==>
signal to noise ratio (SNR)

Optical Network Units (ONUs)
==>
optical network units (ONUs)

56.1.2.1 Multi-Point MAC Control Protocol (MPCP)
==>
56.1.2.1 Multi-point MAC control protocol (MPCP)

The Multi-Point MAC Control Protocol (MPCP)
==>
The multi-point MAC control protocol (MPCP)

Optical Line Termination(OLT)
==>
optical line termination(OLT)

Proposed Response *Response Status* **C**

REJECT.

IEEE 802.3ah is an ammendment to 802.3. The style is consistant with the 802.3 style and has been reviewed by the IEEE Staff Editor.

Cl **56** *SC* **56** *P* **168** *L* **1** # **1268**

Thaler, Pat Agilent

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

This section of the standard is more complex than the 10 Gig addition as it defines physical layers that are based on a combination of new and old clauses. It should have a table similar to 44-1 showing which clauses apply to which PHYs.

SuggestedRemedy

Add the table.

Proposed Response *Response Status* **C**

ACCEPT.

Refer to comment 1033

Cl **56** *SC* **56.1** *P* **168** *L* **1** # **109**

Dawe, Piers Agilent

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

Need to mention that 100BASE-LX10 has broad market applicability in commercial and industrial as well as residential (FTTH) use: equipment is already deployed. See http://www.ieee802.org/3/smfx_study/public/jonsson_1_0302.pdf .

SuggestedRemedy

Insert another sentence e.g. at line 12:
100BASE-LX10 also fills a standards gap in the set of PMDs for conventional dual single mode fibre cabling.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1** *P* **168** *L* **47** # **1030**

Law, David 3Com

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

Since the first line of 56.1 states that Ethernet for subscriber access networks is also know as EFM I think the text 'An important characteristic of EFM is that only full duplex links are supported in subscriber access networks.' could be seen to mean 'An important characteristic of EFM is that only full duplex links are supported in EFM.'. I also don't think the intent is to imply that Half Duplex would be supported if an EFM PHY was not being used in a subscriber access networks be in some other network.

SuggestedRemedy

Suggest that the text 'An important characteristic of EFM is that only full duplex links are supported in subscriber access networks.' should be changed to simply read 'An important characteristic of EFM is that only full duplex links are supported.'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1** *P* **168** *L* **5** # **833**

Brand, Richard — Nortel Networks

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

Overview:
Defines "EFM" as a "minimal" set of extensions to... These are more than minimal.

SuggestedRemedy

Delete "minimum"

Proposed Response *Response Status* **Z**

WITHDRAWN.

Cl **56** *SC* **56.1** *P* **168** *L* **51** # **88**

Dawe, Piers — Agilent

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

"defer transmission by the MAC": do we really need such an arcane and specialised term in an overview?

SuggestedRemedy

Replace "defer" with "regulate", or perhaps "throttle back the MAC's throughput".

Proposed Response *Response Status* **C**

REJECT.

Cl **56** *SC* **56.1** *P* **168** *L* **6** # **650**

Daines, Kevin — World Wide Packets

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

Wording can be improved.

SuggestedRemedy

Change "Physical (PHY) Layers. These Physical Layers include"
ro read: "Physical Layer entities (PHY sublayers). These include"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Refer to resolution of comment 1093.

Cl **56** *SC* **56.1** *P* **168** *L* **6** # **1093**

Law, David — 3Com

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

I do not believe the text '... Physical (PHY) Layers.' is not correct. A 'PHY' as defined in 802.3 is a sublayer, not a layer, Figures 56-1/56-2 below this text correctly illustrates this. I believe in this context the text is correct, it is just the use of the abbreviation PHY which is incorrect. Please review the first two paragraphs of 34.1 Overview in the Introduction to 1000Mb/s baseband networks for the correct use of this terminology.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

Remove the "(PHY)" from line 6

Cl **56** *SC* **56.1** *P* **168** *L* **6** # **1028**

Law, David — 3Com

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

I do not believe the text '... Physical (PHY) Layers.' is correct. A 'PHY' as defined in 802.3 is a sublayer, not a layer, Figures 56-1/56-2 below this text correctly illustrates this. I believe in this context the text is correct, it is just the use of the abbreviation PHY which is incorrect. Please review the first two paragraphs of 34.1 Overview in the Introduction to 1000Mb/s baseband networks for the correct use of this terminology.

SuggestedRemedy

Suggest the text '... with a family of Physical (PHY) Layers.' be changed to read '... with a family of Physical Layers.'.

Proposed Response *Response Status* **C**

ACCEPT.

Refer 1093

Cl **56** *SC* **56.1** *P* **168** *L* **8** # **1029**

Law, David 3Com

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

I do not believe that the text '... in which a point to multipoint (P2MP) network topology is implemented with passive optical splitters, along with optical fiber PMDs that support this topology.' is sufficient as modifications to the MAC Control and Reconciliation sublayer are also required to support this topology.

SuggestedRemedy

suggest the text '... in which a point to multipoint (P2MP) network topology is implemented with passive optical splitters, along with optical fiber PMDs that support this topology.' be changed to read '... in which a point to multipoint (P2MP) network topology is implemented with passive optical splitters, along with extensions to the MAC Control sublayer and Reconciliation sublayer and well as optical fiber PMDs to support this topology.'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1** *P* **169** *L* **6** # **844**

Arnold, Brian Cisco Systems

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

Figure 56-2, the architectural positioning of P2MP, could be slightly improved and made more consistent by making the datalink layer of the OLT stack more like that in Figure 64-2, page 438. In Figure 64-2, there are separate instances on the OLT of the MAC, OAM, and LLC (per ONU), which more accurately represents the architectural P2P emulation of P2MP than does Figure 56-2.

SuggestedRemedy

Modify Figure 56-2 such that the datalink layer of the OLT shows multiple instances of the MAC, OAM, and LLC sublayers, similar to Figure 64-2 on page 438.

Proposed Response *Response Status* **C**

REJECT.

Cl **56** *SC* **56.1.1** *P* **169** *L* **34** # **1187**

Thatcher, Jonathan N/A

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

Initial portion of paragraph under 56.1.1 and 56.1.2 begins with "EFM supports operation at several different bit rates, depending...."

This is unnecessarily redundant for one. But, more importantly, it is confusing in the context of P2MP.

SuggestedRemedy

Change 56.1.1 to: "EFM P2P supports operation at...."

Change 56.1.2 to: "EFM P2MP supports operation at a nominal bit rate of 1000 Mb/s, shared...."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

For 56.1.1 accept the addition of P2P

For 56.1.2:
- Refer to 834 for 56.1.2
- and add the word "shared"

Cl **56** *SC* **56.1.1** *P* **169** *L* **38** # **90**

Dawe, Piers Agilent

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

Re "In the case of point to point optical fiber media, bit rates of 100 Mb/s and 1000 Mb/s .... In the case of point to point copper, EFM supports a variety of bit rates, ...".
We can be more even handed and more informative.

SuggestedRemedy

Insert limits of range: "a variety of bit rates from X Mb/s to Y Mb/s, depending ...".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add a footnote similar to 106 where the reader is refered to Annexes 62B and 63B as appropriate.

Add the nominal rate at the nominal reach for each PMD type listed.

Cl **56** *SC* **56.1.2** *P* **169** *L* **44** # **834**

Brand, Richard — Nortel Networks

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

The first sentence of this paragraph is confusing and also redundant to the first sentence of the preceeding paragraph. P2MP does not support operation at several different bit rates.

SuggestedRemedy

Delete the first sentence of that para.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete the first sentence and the words "In the case of" from the next sentence. Add the word "For" to the front second sentence.

Cl **56** *SC* **56.1.2** *P* **169** *L* **44** # **835**

Brand, Richard — Nortel Networks

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

Both this paragraph and Fig 56-2 above it are misleading in that they do not detail that P2MP is NOT a peer to peer relationship between the OLT and the ONU. Cl 2 clearly states peer to peer so cl 56 needs to point out the difference in this overview.

SuggestedRemedy

Add text to define that P2MP is an exception to the peer to peer relationship.

Proposed Response *Response Status* **U**

REJECT.
P2MP as described in the draft does in fact provide a peer to
peer relationship at the MAC Client interface, therefore it would be incorrect to define that it is an exception.

Cl **56** *SC* **56.1.2** *P* **169** *L* **47** # **91**

Dawe, Piers — Agilent

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

As in 56.1.1, need to mention where the PMA/FEC/PCS come from.

SuggestedRemedy

Add sentence:
"These PHYs use the 1000BASE-X Physical Coding Sublayer (PCS) and Physical Medium Attachment (PMA) sublayers defined in Clauses 36 and 65, with an optional FEC sublayer defined in 65."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.2** *P* **170** *L* **27** # **164**

Bruce Tolley — Cisco

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

It seems inconsistent to adopt two different suffix nomenclatures for CO or OLT vs NID or CPE. The copper suffixes are O and R. The optical bidi suffixes are D and U. Can we just adopt one set for both copper and optics?

See also table 56-1

SuggestedRemedy

Use O and R for the comment nomenclature for suffixes for copper and bidirectional fiber

Proposed Response *Response Status* **C**

REJECT.

Cl **56** *SC* **56.1.2.1** *P* **169** *L* **52** # **193**

Yukihiro, Fujimoto — NTT

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

Using "OLT" as an equipment with "ONU:Optical Network Unit", OLT should be "Optical Line Terminal".

SuggestedRemedy

Optical Line Termination -> Optical Line Terminal

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.2.1** *P* **169** *L* **54** # **93**

Dawe, Piers — Agilent

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

In this sentence, "Each ONU in the P2MP topology contains an instance of the MPCP, which communicates with an instance of the MPCP in the OLT." Is there just one instance of MCPC in the OLT, or as many instances as there are ONUs?

SuggestedRemedy

Please clarify.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the last sentence to read:

One of several instances of the MPCP in the OLT communicates with the instance of the MPCP in the ONU. A pair of MPCPs that communicate between the OLT and ONU are a distinct and associated pair.

Cl **56** *SC* **56.1.2.2** *P* **170** *L* **1** # **457**

James, David JGG

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

Excessive capitalization.

SuggestedRemedy

Change:

56.1.2.2 Reconciliation Sublayer (RS) and media independent interfaces
==>
56.1.2.2 Reconciliation sublayer (RS) and media independent interfaces

56.1.2.2.1 Extentions of the Reconciliation Sublayer (RS) for Point to Point Emulation
==>
56.1.2.2.1 Extentions of the reconciliation sublayer (RS) for point to point emulation

of the Reconciliation Sublayer (RS)
==>
of the reconciliation sublayer (RS)

for P2P Emulation makes
==>
for P2P emulation makes

Logical Link Identification (LLID)
==>
logical link identification (LLID)

the family of 100BASE-X Physical Layer signaling systems
==>
the family of 100BASE-X physical layer signaling systems

(Bidirectional long wavelength Downstream laser)
==>
(bidirectional long wavelength downstream laser)

(Bidirectional long wavelength Upstream laser)
==>
(bidirectional long wavelength upstream laser)

Forward Error Correction (FEC)
==>
forward error correction (FEC)

1000BASE-PX10-D (Passive Optical Network Downstream laser 10 km)
==>
1000BASE-PX10-D (passive optical network downstream laser 10 km)

referred to as Frequency Division Duplexing (FDD)
==>
referred to as frequency division duplexing (FDD)

a new distinct PMD based on Multiple Carrier Modulation (MCM, also referred to as Discrete Multi-Tone or DMT).
==>
a new distinct PMD based on multiple carrier modulation (MCM, also referred to as discrete multi-tone or DMT).

from the Single-Pair High-Speed Digital Subscriber Line (SHDSL)
==>
from the single-pair high-speed digital subscriber line (SHDSL)

Etc., remembering that acronyms are not capitalized when spelled out, unless they are actually proper nouns.

Proposed Response *Response Status* **C**

REJECT.

IEEE 802.3ah is an ammendment to 802.3. The style is consistant with the 802.3 style and has been reviewed by the IEEE Staff Editor.

Cl **56** *SC* **56.1.2.2** *P* **170** *L* **3** # **1019**

Law, David 3Com

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

I do not believe the statement that 'The MII and GMII defined in Clause 22 and Clause 35, respectively, are employed for the same purpose in EFM, that being the interconnection between the MAC sublayer and the PHY.' is correct. The Clause 22 and Clause 35 MII and GMII do not connect the MAC to the PHY. In both cases these clauses define a RS as well. See subclause 22.1, first paragraph - 'This clause defines the logical, electrical, and mechanical characteristics for the Reconciliation Sublayer (RS) and Media Independent Interface (MII) between CSMA/CD media access controllers and various PHYs.', and subclause 35.1, first paragraph - 'This clause defines the logical and electrical characteristics for the Reconciliation Sublayer (RS) and Gigabit Media Independent Interface (GMII) between CSMA/CD media access controllers and various PHYs.'. It is the RS in combination with the MII/GMII that connect the MAC to the PHY.

SuggestedRemedy

Suggest that the text 'The MII and GMII defined in Clause 22 and Clause 35, respectively, are employed for the same purpose in EFM ...' to read 'The Clause 22 RS and MII, and Clause 35 RS and GMII, are both employed for the same purpose in EFM ....'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.2.2** *P* **170** *L* **4** # **1027**
Law, David 3Com

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

See suggested remedy.

SuggestedRemedy

Suggest that the text 'interconnection between the MAC sublayer and the PHY.' be changed to read 'interconnection between the MAC and the PHY sublayers.' since both the MAC and the PHY are both sublayers.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.2.2** *P* **170** *L* **4** # **1018**
Law, David 3Com

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

I do not believe that the text 'Extensions to the RS and GMII for P2MP topologies are described in Clause 65.' is correct' On examination of Clause 65 it can be seen no extensions to the GMII are provided, only extensions to the Clause 35 RS. This is clearly stated in the title of subclause 65.1 which reads 'Extensions of the Reconciliation Sublayer (RS) for Point to Point Emulation' and also in the Title of subclause 56.1.2.2.1 below.

SuggestedRemedy

Suggest that the text 'Extensions to the RS and GMII for P2MP topologies are described in Clause 65.' be changed to read 'Extensions to the Clause 35 RS for P2MP topologies are described in Clause 65.'

Alternatively consider deleting this altogether since the following subclause covers this in more detail.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

First proposed remedy will be implemented

Cl **56** *SC* **56.1.2.2.1** *P* **170** *L* **11** # **652**
Daines, Kevin World Wide Packets

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

The LLID, as part of the preamble, is prepended to the beginning of a frame, not a packet.

SuggestedRemedy

Change "packet" to read: "frame" on line 11.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace "packet" with "data frame"

Refer to 1.4.96 and 1.4.198 for definitions of the above two terms

Cl **56** *SC* **56.1.2.2.1** *P* **170** *L* **11** # **1024**
Law, David 3Com

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

A packet consists of the data frame preceded by the Preamble and the Start Frame Delimiter (see 1.4.198). Based on this definition I do not believe that the LLID is being 'prepended' to the beginning of each packet [prepend: To append to the beginning. For example, a Media Access Control (MAC) frame is prepended with a preamble, and appended with a frame check sequence (FCS) - see 1.4.218]. Instead I believe that the LLID is replacing some of the preamble.

SuggestedRemedy

Suggest that the text 'It achieves this by prepending a Logical Link Identification (LLID) to the beginning of each packet, replacing two octets of the preamble.' should be changed to read 'It achieves this by replacing two octets of the preamble with a Logical Link Identification (LLID).'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Please refer to resolution of comment 652.

Cl **56** *SC* **56.1.2.2.1** *P* **170** *L* **7** # **163**
Bruce Tolley Cisco Systems

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

In two places the word Extentions is misspelled

SuggestedRemedy

correct spelling to Extensions

also on line 9

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.2.2.1** *P* **170** *L* **7** # **92**
Dawe, Piers Agilent

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

Spelling: line 4 has Extensions, line 7 has Extentions, 9 has extention.

SuggestedRemedy

Extensions ?

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.2.2.1** *P* **170** *L* **9** # **1023**

Law, David 3Com

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

I believe it is only the Clause 35 RS that is being extended by Clause 65, not the Clause 22 RS.

SuggestedRemedy

Suggest that while it might be an idea to change the title to include the text 'Clause 35', but at least for now change the text 'The extension of the Reconciliation Sublayer (RS) for P2P Emulation ...' be changed to read 'The extension of the Clause 35 Reconciliation Sublayer (RS) for P2P Emulation...'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.2.2.1** *P* **170** *L* **9** # **1188**

Thatcher, Jonathan N/A

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

Text "The extention of the Reconciliation Sublayer (RS)... above the MAC Client)" cannot be correct since the this must be in fact hidden from the upper sublayers in order to be architecturally consistent.

SuggestedRemedy

Do you mean: "Extentions to the Reconciliation Sublayer (RS) for P2MP hide the complexities of the underlying P2MP shared media from the higher protocol layers and makes it appear as a dedicated P2P link for each instance of the...." ???

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the first sentence to read:

The combination of MPCP and the extension of the Reconciliation Sublayer (RS) for P2P Emulation allows an underlying P2MP network to appear as a collection of point to point links to the higher protocol layers (at and above the MAC Client).

Cl **56** *SC* **56.1.3** *P* **170** *L* **19** # **264**

Tom Mathey Independent

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

p170 line 19 bad clause reference, 60 should be 58.
p170 line 33 bad clause reference, 58 should be 60.

SuggestedRemedy

Implement

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.3** *P* **170** *L* **19** # **653**

Daines, Kevin World Wide Packets

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

Wrong clause references.

SuggestedRemedy

Change "60" to "58" on page 170, line 19.
Change "58" to "60" on page 170, line 33.

Proposed Response *Response Status* **C**

ACCEPT.

Refer to comment 264

Cl **56** *SC* **56.1.3** *P* **170** *L* **22** # **101**

Dawe, Piers Agilent

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

Use of "extended" could cause confusion. Telecoms talk about "Extended reach" for (say) 40+ km, and 802.3ae use E for Extra long wavelength (1550 band). 1000BASE-XL10 is neither of these.

SuggestedRemedy

Delete "extended".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.3** *P* **170** *L* **28** # **1184**

Thatcher, Jonathan N/A

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

These are not "enhancements to the RS...." To say this denegrates the existing RS.

SuggestedRemedy

Change "enhancements" to "extensions... for the support of P2MP operation."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.3** *P* **170** *L* **28** # **1021**

Law, David 3Com

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

I do not believe that there have been enhancements to the GMII for P2MP. On examination of Clause 65 it can be seen no extensions to the GMII are provided, only extensions to the Clause 35 RS. This is clearly stated in the title of subclause 65.1 which reads 'Extensions of the Reconciliation Sublayer (RS) for Point to Point Emulation' and also in the Title of subclause 56.1.2.2.1 above.

SuggestedRemedy

Suggest that text '... but which include enhancements to the RS, GMII, PCS and PMA ...' be changed to read '... but which include enhancements to the RS, PCS, and PMA ...'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.3** *P* **170** *L* **33** # **200**

Murakami, Ken Mitsubishi Electric

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

The referred clause is not correct. Not Clause 58 but Clause 60.

SuggestedRemedy

Change "Clause 58" to "Clause 60".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.3** *P* **170** *L* **35** # **97**

Dawe, Piers Agilent

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

Need to remind the reader that we aren't talking about the building wiring "copper cable" that is commonplace in Ethernet. Also, some phone lines are made of aluminium.

SuggestedRemedy

"For electrical cabling, EFM introduces a family of Physical Layer signaling systems. There are two distinct signaling systems specified for voice grade telephony cabling."

Proposed Response *Response Status* **C**

REJECT.

Copper cabling is a common industry refernce

Cl **56** *SC* **56.1.3** *P* **170** *L* **35** # **104**

Dawe, Piers Agilent

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

Do the phone lines have to be unloaded? 62 and 63 specify non-loaded.

SuggestedRemedy

If non-loaded is a hard or soft requirement, insert the term in this subclause.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The following sentence will be added:

Non-loaded cable is a requirement of the signalling methods employed.

Cl **56** *SC* **56.1.3** *P* **170** *L* **39** # **1020**

Law, David 3Com

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

I believe that Clauses 62 and 63 define a physical Layer signaling system specific PMA and PMD for 10PASS-TS and 2BASE-TL respectivly, not just the PMD. Earlier on (lines 36 and 37) there is the statement 'There are two distinct signaling systems specified for copper cabling. Both of them share a set of common functions and interfaces as described in Clause 61.' This implies that the PCS is part of the signaling systems which is fine but why then exclude the PMA from being part of the signaling system. Are the PMA functions such as Scrambling, FEC and Interleaving considered part of the 'signaling system' or not.

SuggestedRemedy

Suggest the text (line 39) 'Underlying these functions, a set of PMD specific functions are described in Clauses 62 and 63.' be changed to read 'Underlying these functions, two Physical Layer signaling system specific PMAs and PMDs are described in Clauses 62 and 63.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.3** *P* **170** *L* **41** # **96**

Dawe, Piers — Agilent

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

There's a problem of narrative here. We talk about optical PMDs which achieve at least 100 Mb/s and 10 km then say "For high speed applications, the 10PASS-TS" (nom. 10 Mb/s) and then "For long distance applications, ... 2BASE-TL." (nom. 2.7 km).

SuggestedRemedy

Could insert more words:
"For high data rate transport on telephone cables", "For longer distance transport on telephone cables".
Another fix would be to create two subordinate clauses (optical, electrical) containing three paragraphs each, and move the last sentence and table earlier to become the body of 56.1.3.
Maybe the best would be to do both.

Proposed Response *Response Status* **C**

REJECT.

Cl **56** *SC* **56.1.3** *P* **170** *L* **53** # **1022**

Law, David — 3Com

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

I don't believe the text 'For long distance applications, EFM introduces a new distinct PMD, 2BASE-TL.' is correct as 2BASE-TL is a PHY, not just a PMD. It is of course true to say a new PMD has been introduced to support the 2BASE-TL PHY. Suggest therefore that this sentence and the following one be modified to align them to the parallel text at the start of the 10PASS-TS paragraph.

SuggestedRemedy

Suggest the text 'For long distance applications, EFM introduces a new distinct PMD, 2BASE-TL. The 2BASE-TL signaling system is defined in Clause 63.' be change to simply read 'For long distance applications, the 2BASE-TL signaling system is defined in Clause 63.' to make it parallel with the text at the start of the 10PASS-TS paragraph.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.3** *P* **171** *L* **1** # **98**

Dawe, Piers — Agilent

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

This PMDs

SuggestedRemedy

This PMD or These PMDs ?

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.3** *P* **171** *L* **1** # **654**

Daines, Kevin — World Wide Packets

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

Grammar.

SuggestedRemedy

Change "This PMDs support" to read: "This PMD supports" on page 171, line 1.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.3** *P* **171** *L* **1** # **1231**

Beck, Michael — Alcatel

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

The sentence "This PMDs support a nominal full duplex data rate of approximately 2 Mb/s." is grammatically incorrect, and ambiguous (it is not clear if it is about G.SHDSL or about 2BASE-TL).

SuggestedRemedy

Replace the sentence with: "The 2BASE-TL PMD supports a nominal full duplex data rate of approximately 2 Mb/s."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.3** *P* **171** *L* **2** # **727**

Horvat, Michael — Infineon Technologies

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

Data rates of up to 5.7 Mb/s (n=89) are agreed for 2BASE-TL.

SuggestedRemedy

Replace 'full-duplex data rate of approximately 2Mb/s' with 'full-duplex data rate of up to 5.7Mb/s'.

Proposed Response *Response Status* **C**

REJECT.

Cl **56** *SC* **56.1.3** *P* **171** *L* **6** # **146**
Dawe, Piers Agilent

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

Clause 66 is an orphan, in the sense that someone reading this "Introduction to EFM" would not be made aware of its presence.

SuggestedRemedy

Easy fix: add another sentence after this one: "System considerations for Ethernet subscriber access networks are described in Clause 66."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **56.1.3** *P* **171** *L* **6** # **99**
Dawe, Piers Agilent

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

These physical layer specifications are not unique (e.g. several options for each rate). As this table acts as a catalogue for network builders:

SuggestedRemedy

Change "Specifications unique to the operation of" to "Summary characteristics for the deployment of".

Proposed Response *Response Status* **C**

REJECT.

Cl **56** *SC* **56.1.4** *P* **171** *L* **50** # **840**
Brand, Richard Nortel Networks

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

Although one of the objectives of 802.3ah is to define OAM for subscriber access networks, the wording used here is not correct.

SuggestedRemedy

Change text (line 51) to delete "subscriber access networks to Ethernet" and replace with "point to point and emulated point to point to IEEE 802.3 links." as per 57.1.5.1
or
create new document specific to SP networks

Proposed Response *Response Status* **U**

REJECT.

Refer to responses to 837 and 952.

For further information regarding document restructuring, see the file:

http://www.ieee802.org/3/efm/public/sep03/frazier_1_0903.pdf

Cl **56** *SC* **56.3** *P* **172** *L* **10** # **1031**
Law, David 3Com

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

Why has a conformance requirement, to complete a PICS, been added to the introduction. This was not included in IEEE Std 802.3ae and I'm not too sure why it would be needed.

SuggestedRemedy

Suggest that the text '... shall complete a Protocol Implementation Conformance Statement (PICS) proforma.' should be changed to read '... demonstrates compliance by completing a Protocol Implementation Conformance Statement (PICS) proforma.'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **Figure 56-1** *P* **168** *L* **15** # **651**
Daines, Kevin World Wide Packets

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

The dashed lines appear in the pdf but are not readily printed. Could be a shading or line thickness problem?

SuggestedRemedy

Fix lines delineating layers in Figures 56-1 and 56-2.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will try to improve the dashed lines by increasing the line widths to 1.0 from 0.5.

Cl **56** *SC* **Figure 56-2** *P* **169** *L* # **194**
Yukihiro, Fujimoto NTT

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

Using "OLT" as an equipment with "ONU:Optical Network Unit", OLT should be "Optical Line Terminal".

SuggestedRemedy

Optical Line Termination -> Optical Line Terminal

Proposed Response *Response Status* **C**

ACCEPT.

Refer 197

Cl **56** *SC* **Figure 56-2** *P* **169** *L* **16** # **89**
Dawe, Piers Agilent

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

We have an opportunity to show the optional FEC sublayer in the right hand stack.

SuggestedRemedy

Insert optional FEC sublayer in the right hand stack.

Proposed Response *Response Status* **C**

ACCEPT.

Ensure that all the P2MP diagrams are the same.

Cl **56** *SC* **Figure 56-2** *P* **169** *L* **17** # **1025**
Law, David 3Com

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

Typo.

SuggestedRemedy

Please correct align the text 'PHY' with the PMA sublayer on the right-hand PHY.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **Figure 56-2** *P* **169** *L* **7** # **1026**
Law, David 3Com

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

Formatting typo.

SuggestedRemedy

The word 'Optional' should be Uppercase in both the OLT and ONU as it is in Figure 65-1.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **Table 56-1** *P* **171** *L* **13** # **1033**
Law, David 3Com

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

While the title of the table is 'physical layer signaling systems' the Clause number provide in the Clause column is only either the PMD clause or the PMA/PMD clause number. For the sake of additional clarity, consider adding a table similar to table 44-1 found in IEEE Std 802.3ae.

SuggestedRemedy

Consider adding a table similar to table 44-1 found in IEEE Std 802.3ae. I am happy to assist in its generation.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **56** *SC* **Table 56-1** *P* **171** *L* **13** # **102**
Dawe, Piers Agilent

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

This issue was raised in the last commenting cycle but then was not the time to address it. I was invited to present an alternative naming convention that has broad consensus (!) but have not had time to progress that. Here's a comment and suggested remedy which is not a global fix but at least moves the problem out of clause 56:

We need to sort out the terminology used in Table 56-1 (and in other places). In the location columns, we need to agree the same words for both optical and electrical. As I believe OLT and ONU are items, not locations (or interfaces) and cannot apply to the electrical systems, perhaps the use of "CO" and "subscriber" will work here. To explain them I have used the terminology chosen for 66A.

SuggestedRemedy

In Table 56-1, change "OLT" to "CO" and "ONU" to "subscriber". In Figure 56-2, write "Central Office" and "Subscriber" under the two LAN stacks. In 56.1.2.1, insert extra words "... (OLT) at the side nearer the center of the network ("CO" side for "central office"), plus one or more ONUs nearer the periphery of the network ("subscriber" side), as shown ...

Proposed Response *Response Status* **C**

REJECT.

Cl **56** *SC* **Table 56-1** *P* **171** *L* **15** # **100**
Dawe, Piers Agilent

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

This table gives the misleading impression that there are 14 physical layer signaling systems (the number of rows).

SuggestedRemedy

Merge (straddle) the "Nominal reach", "Medium" and "Clause" cells for each D/U and O/R pair.

Proposed Response *Response Status* **C**

ACCEPT.

Will simplify table to merge and stradle complementary PMDs

Cl **56** *SC* **Table 56-1** *P* **171** *L* **29** # **1032**
Law, David 3Com

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

Would it be possible to add the range of nominal reach for each of the Copper PHYs. It will save the reader going elsewhere to figure out the range of distances supported.

SuggestedRemedy

Add the range of nominal reach for each of the Copper PHYs.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Referto comment 106.

Cl **56** *SC* **Table 56-1** *P* **171** *L* **29** # **103**
Dawe, Piers Agilent

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

Some phone lines are made of aluminium. I assume they are usable to at least some extent for DSL.

SuggestedRemedy

Replace each "copper" or "voice grade copper" in the table with "telephony".

Proposed Response *Response Status* **C**

REJECT.

Terminology is consistant with other standards

Cl **56** *SC* **Table 56-1** *P* **171** *L* **29** # **106**
Dawe, Piers Agilent

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

Can the electrical reaches be achieved always?

SuggestedRemedy

If not, give worst/best spec. reaches.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add a footnote to the copper reach numbers that states:
"Reach may vary depending on plant. Refer to Annex" (62B/63B as approproiate) "for further information"

Cl **56** *SC* **Table 56-1** *P* **171** *L* **29** # **105**
Dawe, Piers Agilent

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

"Varies" is too weak.

SuggestedRemedy

Replace each "varies" with the lower and upper limits of rates.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Refer to Comment 90.

Cl **57** *SC* *P* **200** *L* **17** # **468**
James, David JGG

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

Illegal and ill-advised OUI usage. All new identifier uses based on the OUI are required to use the EUI-64 unique identifier format. Relying on the owner of the OUI to properly administer Data/Pad values uniquely does not (in practice, speaking an as IEEE/RAC member) work.

SuggestedRemedy

Change illustration on right to include OUI plus 5-byte extension, forming an EUI-64 value.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See response to comment #1155.

Cl **57** *SC* **30.11.1.1.29** *P* **67** *L* **43** # **666**

Daines, Kevin — World Wide Packets

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

Wrong width.

SuggestedRemedy

Change "four" to "eight" on line 43.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57** *P* **173** *L* **01** # **458**

James, David — JGG

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

Excessive capitalization.

SuggestedRemedy

Change:

57. Operations, Administration, and Maintenance (OAM)
==>
57. Operations, administration, and maintenance (OAM)

Proposed Response *Response Status* **C**

REJECT.

As the name of the clause, the capitalization seems appropriate. It is also patterned after 802.3ad/Clause 43 - the other Slow Protocols clause.

Cl **57** *SC* **57** *P* **173** *L* **01** # **816**

Martin, David — Nortel Networks

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

The OAM clause has broader applicability than just EFM PHYs and subscriber access networks. The OAM clause could be applied to any 802.3 PHY (granted the uni-directional operation may not work for all types) and any 802.3 link, wherever that link may be located in the network.

My concern is that this broader applicability will not be obvious given the structure of the CSMA/CD document. As was pointed out by David Law and Geoff Thompson at the opening 802.3 WG plenary at the July San Francisco meeting, the 2000 version of the document is about 1540 pages, with another 529 pages coming for 10Gig, 562 pages for EFM, and another 300 plus pages for DTE power etc, making a total of around 3000 pages for the 2004 version. The OAM clause is a slim 45 pages buried within the EFM portion of this SF phonebook sized document.

SuggestedRemedy

The OAM clause (and related portion of c30) should be moved out of the EFM portion of the CSMA/CD document into a new document capturing all clauses describing enhanced Ethernet functionality (i.e. non-legacy). The possibility of re-structuring the CSMA/CD document was briefly mentioned during the 802.3 WG discussion I noted above.

Besides relocating the OAM clause, there are only two obvious wording changes required. A word search of clause 57 for "OLT, ONU, subscriber, access" only had hits in subclause 57.1.2, where they are appropriate, and 57.1.3, where they could be removed to help with the broader applicability issue discussed above. Specifically, page 174 line 49 and page 174 line 51.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #952 regarding splitting the document.

Per the 2nd half of your suggested remedy, the following changes will be made:

Change: "These functions, while valuable in subscriber access networks, do not fall within the scope of this standard."

to read: "These functions, while valuable, do not fall within the scope of this standard."

Change: "a) Management functions not pertaining to a single link such as protection switching, station management and subscriber management are not covered by this clause."

to read: "a) Management functions not pertaining to a single link such as protection switching and DTE management are not covered by this clause."

Cl **57** *SC* **57** *P* **173** *L* **01** # **1180**

Parsons, Glenn — Nortel Networks

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

PICS mapping to clause is incomplete as not all PICS entries are supported by 'mandatory', 'shall', 'optional' or 'may' text within the clauses.

SuggestedRemedy

Review clause to ensure that all instances of 'mandatory', 'shall', 'optional' or 'may' within the clause have a corresponding PICS entry.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57** *P* **174** *L* **09** # **980**

Thompson, Geoff — Nortel

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

What set of documented requirements is being satisfied by OAM?
The only justification that I can find is the vague "The OAM described in this clause provides data link layer mechanisms that complement applications that may reside in higher layers." (emphasis added).
There is no reference to any particular application, set of applications, documented set of requirements for such applications or protocol/interface to any such thing as an "OAM client". There is no definition of an OAM Client or what standard defines the requirements, interfaces or interoperability parameters for such a client. If such a client is speculated for the future, then there is not even documentation of a commitment for such a project by a standards group.

SuggestedRemedy

Delete OAM for lack of a defined standards based
interface
customer
set of requirements
Or provide appropriate justification/references/information

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Adequate justification has been provided as evidenced by the liaison from ITU-T SG 13 indicating their willingness to adopt the OAM client interface and endorsement of the functions provided by the OAM sublayer.

OAM STF will continue responding to liaison/communication statements to seek feedback on OAM. These will be sent to T1, MEF and 802.1.

- - -

Per the commenter's suggestion to provide appropriate justification, references and information, the following is provided:

The recent ITU-T liaison contains the following excerpts, which indicate their endorsement and intended use of OAM as currently defined and architected.

Under "Requirements for Maintenance Entities" (Section 9):

A requirement is "ETY link connection OAM based on IEEE 802.3ah" (see P15, L7 or so).

So as to whether other organizations have reviewed it, find it useful, and will use it, I think that ITU making it a REQUIREMENT in their document should calm that fear.

Under "General requirements for Ethernet OAM Functions " (Section 8):

Some requirements, but not the full set, and why these are satisfied by 802.3ah OAM include:

- (#1) on demand and continuous connectivity checking (OAM Information TLVs and Variable Requests satisfy this)
- (#3) defect notification (OAM critical link events and TLV-based link events satisfy this). They also list defect correction as a requirement, but we're not in the topology maintenance business.
- (#4) customers don't detect own problems (event notification from CPE-CO satisfy this)
- (#5) detecting the following anomolies: loss of connectivity, lost frames, errored frames (events or status for all of these) - also ask for topology problems, but thats not our business
- (#6) Ethernet OAM on same path as Ethernet data (e.g. do in data flow, not preamble, like we're doing)
- (#8) OAM functions simple and auto configuring (OAM discovery helps address this)
- (#9) OAM optional (all management optional in 802.3)
- (#10) backward compatible (e.g. frames not preamble)
- (#14) connectivity checking not dependent on customer traffic (e.g. OAM running anyway)

Note that they have other requirements not applicable to us (topology, layering, etc.), but we fit very well into these requirements.

Finally, in "Required OAM functions", they list many that we help satisfy:
- continuous connectivity checking
- loopback
- discovery
- performance monitoring

And some that are out of our scope
- alarm suppression
- path trace
- survivability (protection switching)

But there are none that are within our scope that we do not perform. It doesn't seem like we're missing anything.

Cl **57** *SC* **57.1** *P* **174** *L* **10** # **1168**

Parsons, Glenn — Nortel Networks

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

The fact that OAMPDUs use slow protocols is not mentioned until 57.4. This is a significant detail that should be mentioned in the overview.

SuggestedRemedy

Add text in appropriate subclause of 57.1 to indicate that OAMPDUs use slow protocols

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See proposed response to comment #981.

Cl **57** *SC* **57.1** *P* **174** *L* **11** # **981**

Thompson, Geoff — Nortel

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

There is no mention of the type of PDU used for the OAM PDU until deep into this clause. It is key to the readers understanding that they be told that the mechanism being used for the OAMPDU is the Annex 43B slow protocol.

SuggestedRemedy

Add text in paragraph 2 indicating that the mechanism being used for the OAMPDU is the Annex 43B slow protocol.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change:

"OAM information is conveyed in frames called OAM Protocol Data Units (OAMPDUs)."

to read:

"OAM information is conveyed in Slow Protocol frames (see Annex 43B) called OAM Protocol Data Units (OAMPDUs)."

Cl **57** *SC* **57.1.1** *P* **174** *L* **13** # **1**

Thomas Dineen — Dineen Consulting

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

"OAMPDUs traverse a single link and are not forwarded by bridges or switches."

I assume that when you mention "bridges" that you are referencing IEEE 802.1 bridges. It is out of the scope of 802.3ah to attempt to standardize the behavior of bridges in regard to the forwarding behaviour of OAM PDUs, especially IEEE 802.1 Bridges. As far as I am aware there is no standard or standardization effort for "switches". Switches tend to be a generic of marketing term.

SuggestedRemedy

Delete: "OAMPDUs traverse a single link and are not forwarded by bridges or switches."

and replace it with:

"OAMPDUs traverse a single link, being passed between OAM Client Entities or OAM Sublayer Entities."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The referenced sentence is not an attempt by 802.3ah to standardize the behavior of bridges. Rather, it is a statement of fact. Since OAMPDUs are only passed between OAM clients/sublayers, and hence, are not passed up to the MAC client, 802.1 bridges have no opportunity to forward them.

The OAM STF has desired text of this nature so as to be very clear in the mind of the reader about the non-forwarding behavior of OAMPDUs.

Per 802.3-2002, 1.4.264, "switch" is defined as a synonym of bridge (1.4.53) and is is perfectly legal here.

Change last two sentences as follows:
"OAMPDUs traverse a single link, being passed between peer OAM entities, and as such, are not forwarded by MAC clients (e.g., bridges or switches)."

Cl **57** *SC* **57.1.1** *P* **174** *L* **14** # **201**

Squire, Matt — Hatteras Networks

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

"OAM peer entities" sounds weird.

SuggestedRemedy

In multiple other places in this clause, we use "peer OAM entities".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.1.1, 57.1.2 and 57.1.** *P* **174-175** *L* **15 and 45** # **326**

Alan Weissberger — Data Communications

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

No mention of whether OAM can operate over concatenated physical links, e.g. 100Mb/sec SMF -to- 100 Base T/F or 1G SMF (subscriber access)-to- 1G MMF (local premises distribution). This is especially important for Fault Localization when "critical events" occur and must be conveyed to the far end DTE. These need to be transmitted as "real time critical" OAM PDU(s) and a MAC frame created to transport these indicators/flags.

SuggestedRemedy

Either list OAM operation over concatenated physical links as an objective in 57.1.2 or a non objective in 57.1.3

If it is an objective:

-Define an OAM Relay Function to be implemented in a 2 port bridge that interconnects the concatenated Physical links.
-Then specify a "Link Location" field in the appropriate OAM PDU(s) that identifies which of the links has failed (e.g. left or right side of the bridge).

Proposed Response *Response Status* **C**

REJECT.

Per 57.1.1, OAM operates over a single link. OAMPDUs are not forwarded, relayed or otherwise passed beyond the OAM client.

In other words, OAMPDUs are not passed to the MAC client and do not traverse more than a single link.

802.3 does not reference concatenated links or "media converters."

Cl **57** *SC* **57.1.2** *P* **174** *L* **33** # **265**

Tom Mathey — Independent

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

Clause 57 needs to specifically exclude clause 61 from support of unidirectional operation, but allow other generic OAM frames per p.323 line 52

SuggestedRemedy

Implement

Proposed Response *Response Status* **C**

REJECT.

No justification is provided as to the reason to exclude Clause 61 from support of unidirectional operation. An MII register exists which provides the indication from the PHY as to support for OAM Unidirectional operation. Management will configure a link as being able to run in unidirectional operation based on the presence and enabling of the OAM sublayer and support from the PHY.

Cl **57** *SC* **57.1.5** *P* **175** *L* **33** # **460**

James, David JGG

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

Excess capitalization.

SuggestedRemedy

Change:

57.1.5 Compatibility Considerations
==>
57.1.5 Compatibility considerations

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.2.1** *P* **176** *L* # **165**

Bruce Tolley Cisco Systems

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

Several acronyms are in the diagram and are not defined in the text of the clause which precedes or closely follows the diagram : MCF, MADR, MADI.

SuggestedRemedy

Define/spellout acronymns in the text description of the diagram.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #1166.

Cl **57** *SC* **57.2.1** *P* **176** *L* **21** # **1166**

Parsons, Glenn Nortel Networks

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

Abbreviations in figure 57-2 (e.g., MCF:MADI, OAM:MADR) are not obvious.

SuggestedRemedy

Add a legend to the figure to explain these.

Proposed Response *Response Status* **C**

ACCEPT.

<need details>

Cl **57** *SC* **57.2.1** *P* **176** *L* **27** # **1157**

Parsons, Glenn Nortel Networks

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

'Control' box in figure 57-2 could be confused with MAC control

SuggestedRemedy

Preface with OAM to call box 'OAM control'

Proposed Response *Response Status* **C**

REJECT.

Figure 57-1 clearly shows the architectural positioning of the OAM sublayer and the MAC Control sublayer. I would hope we wouldn't need to add prefixes to internal blocks.

Cl **57** *SC* **57.2.1** *P* **176** *L* **38** # **1158**

Parsons, Glenn Nortel Networks

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

In figure 57-2 the label of the OAM box should be consistent with other optional sublayer (like MAC control) and explicitly state it is optional as in figure 57-1.

SuggestedRemedy

Replace the 'OAM' label with 'OAM (optional)'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Figure 57-1 shows the architectural diagram and includes "(optional)." Figure 57-2, which is modeled after Figure 43-2, does not need "(optional)." However, to be consistent with Figure 43-2 it will be renamed "OAM sublayer".

Cl **57** *SC* **57.2.2** *P* **170** *L* **11** # **166**

Bruce Tolley Cisco Systems

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

Line 11 TLV is not defined and has not been defined or spelled out earlier in the clause

SuggestedRemedy

Define or spell out: TLV

Proposed Response *Response Status* **C**

REJECT.

TLV is spelled out in 1.5 Abbreviations in 802.3-2002.

Cl **57** *SC* **57.2.2** *P* **177** *L* **09** # **2**

Thomas Dineen — Dineen Consulting

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

OAMPDUs are not forwarded by OAM clients.
"OAMPDUs are not forwarded by OAM clients."

Relative to the previous sentenence in the clause, the above sentenence is redundant.

SuggestedRemedy

Delete the sentence: "OAMPDUs are not forwarded by OAM clients."

Proposed Response *Response Status* **C**

REJECT.

See response to comment #1.

Since there has been some confusion about OAM and whether or not it can operate "end-to-end," this sentence adds emphasis and the important "forwarding" term.

Cl **57** *SC* **57.2.2** *P* **177** *L* **11** # **659**

Daines, Kevin — World Wide Packets

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

The Organization Specific Information TLV is not mentioned. For completeness it should be.

SuggestedRemedy

Change bullet g) to read:
"OAM is extensible through the use of an Organization Specific OAMPDU, Organization Specific Information TLV and Organization Specific Event TLV. These may be used for functions outside the scope of this standard."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.2.2** *P* **177** *L* **11** # **581**

Braga, Aldobino — UNH-IOL

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

Organization Specific Information TLV not mentioned as another way to make OAM extensible.

SuggestedRemedy

OAM is extensible through the use of an Organization Specific OAMPDU, Organization Specific Information TLV, and Organization Specific Event TLV.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #659.

Cl **57** *SC* **57.2.3** *P* **177** *L* **13** # **841**

Brand, Richard — Nortel Networks

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

OAM Client. The cl. 57 Overview states that The OAM descriptions within the clause provide "mechanisms that complement applications that may reside in higher layer". No interface to these mechanisms is defined in any way.

SuggestedRemedy

This is incomplete. We define how to i/f to the MAC client. Same applies to the OAM client.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The interface to the OAM client, as found within 57.2.5, is on par with the interface to the MAC client, as found within 802.3-2002/2.3.

Figure 57-2 will be changed as follows:
- Add labels for the (4) OAM client service interfaces similar to labels for the MA_DATA.request/indication service interfaces.

Cl **57** *SC* **57.2.3** *P* **177** *L* **14** # **1165**

Parsons, Glenn — Nortel Networks

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

The OAM client definition is insufficient given that it is put on par with the more well understood and defined MAC client. Further, it is not clear why in figure 57-2 there are OAM service interfaces and MAC service interface (plural vs singluar).

SuggestedRemedy

Add additional description of the requirements and functioanlity of the OAM client including details on all the interfaces supported.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution to comment #841.

The reason for the plural vs. singular difference is the inclusion of the OAM_CTL.request/indication service primitives.

So, up to the MAC client, MADR.request/indication is used.

Up to the OAM client, OAM.request/indication AND OAM_CTL.request/indication are used. Figure 57-2 was patterned after Figure 43-2, which also used the singular.

Cl **57** *SC* **57.2.4** *P* **177** *L* **35** # **982**

Thompson, Geoff Nortel

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

DRAFT COMMENT NEEDS FURTHER REFINEMENT

The insertion of the OAM sublayer (into the stack) as specified in 57.2.4 breaks the functionality of the MAC Control sublayer because you have blocked the MA_CONTROL indication and request per figure 31-2.

MAC Control no longer has any mechanism for communicating with the MAC Control Client.

Whoops, I am wrong, just found the text (lines 40-43). I guess I still have a problem that this only appears in text, not in any figures and the text has no topical heading. It must be easily findable for those who are NOT implementing the OAM sub-layer.

SuggestedRemedy

Break 57.2.4 into separate titled sub-clauses, one for each instance or interface. Certainly, at least, there should be a separate titled sub-heading for MAC_Control.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.2.4** *P* **177** *L* **44** # **983**

Thompson, Geoff Nortel

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

OAM per Figure 57-2 only uses 3 instances of the MAC service interface. (Actually of the MAC DATA service interface).

SuggestedRemedy

Change "four" to "three".
Change "MAC service interface" to "MAC data service interface" or "MAC service interface for data"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See proposed response to comment #984.

Cl **57** *SC* **57.2.4** *P* **177** *L* **50** # **984**

Thompson, Geoff Nortel

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

LBF-MADR is not an instance of a sub-layer service interface per Figure 57-2. It does not appear at either the upper or lower service interface.
The "interface between the Parser and other OAM functions" is depicted as a sub-layer internal data path.

SuggestedRemedy

Delete from this list. Place elsewhere as appropriate.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

After further review, the use of the 802.3 MAC service interface internal to Link Ag (Figure 43-3) and OAM (Figure 57-2) is incorrect.

A new figure will be created. This new figure will be patterned after 802.3-2002/Figure 31-2.

Figure 57-2 will be modified by using a new construct called "internal service interface." This internal service interface will mimic the 802.3 MAC service interface.

LBF:MADR, OAM:MADR, OAM:MADI are all instances of this new internal service interface - used internally to pass frames between sub-blocks within the OAM sublayer.

Cl **57** *SC* **57.2.5.1** *P* **178** *L* **10** # **1159**

Parsons, Glenn Nortel Networks

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

Unnecessary sub-clause makes paragraph inaccurate.

SuggestedRemedy

Remove clause 57.2.5.1 and move paragraph to the end of clause 57.2.5

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.2.5.2.2** *P* **178** *L* **25** # **461**

James, David JGG

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

Excess and inconsistent indentation.

SuggestedRemedy

Change to:

```
OAMPDU.request (
   source_address,
   flags,
   code,
   data
)
   ^ two 18-point tabs
^ one 18-point tab
```

The same for other service primitive indentations.

Proposed Response *Response Status* **C**

REJECT.

802.3-2002/Clause 2 and 802.3ae/Clause 2 have maintained this indentation. 802.3ah/Clause 57 is following this pattern.

Cl **57** *SC* **57.2.5.4.2** *P* **179** *L* **54** # **580**

Braga, Aldobino UNH-IOL

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

The description of local_satisfied makes reference to a comparison between the local configuration and the remote configuration found in the Remote Information TLV.

But if its the "remote's" Information TLV won't it be a comparison between the local configuration and the remote's Local Information TLV?

SuggestedRemedy

The local_satisfied parameter is set by the OAM client as a result of comparing its local configuration and the remote configuration found in the received Local Information TLV.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.2.5.4.2** *P* **180** *L* **09** # **660**

Daines, Kevin World Wide Packets

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

The optional Organization Specific Information TLV fields are not mentioned in context of the automatic, once-a-second Information OAMPDU sent to prevent the Discovery process from restarting.

SuggestedRemedy

Change "Remote Information TLV fields"
to read: "Remote Information and Organization Specific Information TLV fields" on page 180, line 09.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.2.5.4.2** *P* **180** *L* **10** # **202**

Squire, Matt Hatteras Networks

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

The term "sent automatically each second by the multiplexer function" is incorrect as the mux need not send frames each second automatically (e.g. if the OAM client is sending stuff, nothing is automatically generated).

SuggestedRemedy

Remove "each second".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.2.5.5.2** *P* **180** *L* **38** # **152**

Russell, Dale MRV Communications

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

Since the flags field of each error-free OAMPDU is already passed to the OAM client entity in the OAMPDU.indication() primitive, it is certainly capable of detecting and acting on any flag changes while servicing that primitive. Thus there is no need for a separate OAM_CTL.indication() to inform the client entity that flags have changed, and the remote_flags_field parameter in the OAM_CTL.indication() primitive becomes unnecessary.

SuggestedRemedy

Remove the remote_flags_field parameter from the OAM_CTL.indication() primitive specified in 57.2.5.5.2, and the corresponding discussion (lines 49-50) in 57.2.5.5.3.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.2.5.5.2** *P* **180** *L* **38** # **817**

Martin, David — Nortel Networks

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

The OAM_CTL.indication primitive contains the remote_flags_field. The Flags field received from the remote end is also passed up to the OAM Client via the flags portion of the OAMPDU.indication primitive (subclause 57.2.5.3.2 on page 179 line 7). At first glance this looks redundant, but I think it was done to simplify inputs to the Discovery process.

I suspect that only bits 3 and 4 (Remote Stable and Local Stable) of the received Flags field is required in the OAM_CTL.indication remote_flags_field, intended for use by the Discovery process.

SuggestedRemedy

If my suspicion above is correct, then add the following after p.180 line 44: "The Remote Stable and Local Stable indications in the received Flags field are used by the Discovery process."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #152. The OAM editor agrees with Dale Russell in that the remote_flags_field of the OAM_CTL.indication service primitive is redundant to the flags field of the OAM.indication service primitive. David, your first glance was correct I believe.

Cl **57** *SC* **57.2.6.1** *P* **181** *L* **36** # **582**

Braga, Aldobino — UNH-IOL

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

should not -> shall not

SuggestedRemedy

Active devices shall not respond to loopback commands and variable requests from a Passive peer.

Proposed Response *Response Status* **C**

REJECT.

The behavior of OAM clients is not defined and therefore can not be constrained with "shalls."

Cl **57** *SC* **57.2.7.1** *P* **181** *L* **54** # **211**

Alan Weissberger — Data Communications

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

-Nothing in this sub-clause gives examples states when critical events need to be conveyed to the far end DTE (immediately or once per 100m sec). This comment was made above for subclause 57.2.7.3 Local Event Procedure, but is repeated here as an upfront "health warning."

-No examples of critical events are given to distinguish amongst the 3 that are listed in Table 57-2 on pg 182 (see related comment submitted earlier)

SuggestedRemedy

-If a critical event must be conveyed to the far end DTE in real time (to invoke protection/ restoration or for quick fault diagnosis), then an OAM PDU conveying such events should be sent at the next transmit opportunity. The appropriate OAM PDU(s) was suggested in Remedy of previous comment for subclause 57.2.7.3 Local Event Procedure.

-The exact interpretation of a critical event is vendor dependent. Some examples are:

For Link Fault: No carrier detected/loss of signal/loss of light (fiber), Error thresholds (previously crossed and conveyed in Event Notification PDUs) have exceeded their absolute maximum value or upper bound

For Dying Gasp: Power Failure or Hardware/ Interface Failure

No suggestions here for "Critical Event" which seems to be redundant and unnecessary.

Proposed Response *Response Status* **C**

REJECT.

See proposed response to comment #210, #325. The OAM Editor will focus his response on the operative word "need" in the comment.

'Need' is subjective. Some will deem OAM as required. Others will deem OAM as a nice to have. Some uses of critical event indications require very fast signaling. Other uses may be less stringent. I'll give two examples.

If the recipient of a link fault event uses this information to change spanning tree tables or route information, then very fast signaling is certainly desired.

If the recipient of a dying gasp event merely changes the nature/level of an alarm being sent to a management console, the timing is much more relaxed.

However, and this is the most important point, critical event signaling isn't guaranteed. This is explained in the proposed response to #210. Again, the thought is, "if a critical event happens, it would be nice to have additional information just before the link went down."

Cl **57** *SC* **57.2.7.3** *P* **182** *L* **25** # **210**

Alan Weissberger Data Communications

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

57.2.7.3 a] 2nd sentence states that critical link events are communicated via Flag bits "on any subsequently generated OAM/PDU."

-Which PDU Type? Certainly a Loopback Control or Variable Response PDU would be inappropriate in this case.

-Further, if the critical link event is such that far end needs to be notified in real time, then a specific OAM MAC frame needs to be composed and transmitted immediately- not wait for up to 100msec (=10 frames/sec). What OAM PDU should be used?

SuggestedRemedy

-There are 2 possible OAM PDU types that could be sent:

1. Once critical event(s) is detetected, suggest using the (Local} Information OAM PDU, with appropriate Flag bit(s) set for each (locally detected) critical event. Within the State field of this PDU (refer to Tabel 57-7 on pg 202), suggest that the Multiplexer Action bit be set to 1 and Parser Action bits be set to 10 to indicate that Device is discarding non OAM PDUs. Rationale: the critical event (e.g. power failure, no carrier detect/ broken link/ local hardware or interface failure, etc) is presumed to be such that normal data communications has been disrupted.

2. It might also be possible to use the Event Notification PDU with a new Event TLV codepoint "Critical Event Detected," taken from one of the reserved Type values (refer to Table 57-11 on pg 204)

-When to send the OAM PDU upon detection of critical event

Whichever OAM PDU is selected, the OAM MAC frame should be composed and sent at the next transmit opportunity, e.g. after the current frame being transmitted, if any, is completed.

Proposed Response *Response Status* **C**

REJECT.

Responses principally addressing the comment:

57.2.7.3 (a) defines the action to be taken by the OAM sublayer when a critical link event is signalled via the OAM_CTL.request service primitive. The action is very clear. The OAM sublayer shall set/clear, as appropriate, the bits within the Flags field on subsequently generated OAMPDUs.

If a critical link event has occurred, either on the link or within the DTE, that DTE would want it signaled as soon as possible. This could be on the OAMPDU that is currently being formed or the very next OAMPDU - regardless of OAMPDU code. The Flags field is carried within each and every OAMPDU for this very reason. If a critical link event has occurred, it becomes the most important information to communicate down the wire.

Figure 57-5 multiplexes OAMPDU transmit requests from the Control block/OAM client, MAC client frames and loopback frames. When a critical link event occurs, an OAMPDU may be sent immediately without waiting for 100 ms (or the interval between 10 fps). This is clear in the state machine. Furthermore, if the link is operating unidirectionally (with only OAMPDUs permitted on the link) OAMPDUs may be sent continuously to increase the chances of reception at the remote DTE.

Responses principally addressing the suggested remedy:

As explained earlier, a DTE experiencing/detecting a critical link event will naturally want to convey this as soon as possible. This could mean altering the Flags field of an OAMPDU being formed or creating an OAMPDU.

Depending upon the implementation, an Information OAMPDU or Event Notification OAMPDU may not be the fastest PDU to send. Perhaps another OAMPDU would be quicker. The OAM Editor doesn't feel this should be constrained.

The behavior that needs to be constrained is what the OAM sublayer does when a critical link event is signaled across the OAM_CTL.request service interface. We do not want to mandate large batteries in all devices implementing OAM in order to be compliant with the specification. The notion is "Notify the remote DTE of the critical link event, if possible." The "if possible" caveat includes: if the DTE has enough time before 'critical' becomes 'fatal', if the OAMPDU is transmitted by lower sublayers (not guaranteed), if the OAMPDU is received without errors (again, not guaranteed), etc.

In summary, OAM is an optional value-add for access links. Links will run without OAM. If enabled on a link, additional diagnostic, troubleshooting and event information can be gleaned.

Cl **57** *SC* **57.2.8** *P* **182** *L* **48** # **1171**

Parsons, Glenn Nortel Networks

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

No mandatory or optional indication given to support PICs entry.

SuggestedRemedy

Reword first sentence:

OAM provides an optional data link layer frame-level loopback mode, which is controlled remotely.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.2.8.1** *P* **183** *L* **33** # **684**

Joergensen, Thomas Vitesse Semiconducto

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

If two active stations initiates remote loopback simultaniusly, the result is undetermined. The text in 57.2.8.1 RECOMMEND that the local DTE with the highest MAC address is going into loopback mode.
Why not make thas behavior mandatory? We want the standard to be robust, so an undifined behavior is not acceptable

SuggestedRemedy

Change the procedure to be required:
- Replace "recommended" with "required" in line 35
- Replace "should" with "shall" in line 36 and 38
- Remove line 41-42
- Create PICS entry

Proposed Response *Response Status* **C**

REJECT.

Clause 57 defines the OAM sublayer, the OAMPDU field/frame formats, and the interfaces to superior and subordinate sublayers. Clause 57 does not define the OAM client. That is the reason the draft uses words such as "recommended."

Cl **57** *SC* **57.2.8.5** *P* **184** *L* **40** # **685**

Joergensen, Thomas Vitesse Semiconducto

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

It is required that the frames lost during OAM loopback are counted.

SuggestedRemedy

Replace line 40 with "Loopback frames that are discarded by the OAM sublayer within the remote DTE shall be counted"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: "Loopback frames that are discarded by the OAM sublayer within the remote DTE are counted."

to read: "Loopback frames that are discarded by the OAM sublayer within the remote DTE are counted and if Clause 30 is present are reflected in 30.11.1.1.4."

Cl **57** *SC* **57.2.8.6** *P* **184** *L* **09** # **583**

Braga, Aldobino UNH-IOL

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

How can you send an INFO OAMPDU reflecting a change that hasn't been made yet? I understand that there is a 1 second time contraint here, so its best to get the PDU out the door ASAP, but it doesn't make sense to me.

Can the order be changed?

SuggestedRemedy

After receiving a Loopback Control OAMPDU with the Disable Remote Loopback command, the remote OAM client first sets the local_par_action and local_mux_action parameters to FWD via the OAM_CTL.request service primitive and then sends an Information OAMPDU with updated state information reflecting the local_par_action and local_mux_action parameters set to FWD.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See proposed response to comment #584.

Cl **57** *SC* **57.2.8.6** *P* **185** *L* **03** # **584**

Braga, Aldobino UNH-IOL

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

Should the order of c and d be changed?
ie set the variables first, then send the PDU

SuggestedRemedy

make c -> d and d -> c

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The rationale for the current bullet ordering was explained in a recent OAM STF meeting and will be added as a note, appropriately wordsmithed:

"Sending the Info PDU first allows the remote device to flip its local_par_action to FWD prior to the earliest possible reception of a MAC client frame. This does assume the Info PDU is received error-free.

This is a slight optimization over reversing the bullets. The possibility exists, if the bullets were reversed, that after (d), the MAC client begins sending frames that are discarded by the remote DTE before the OAM client can send the Info PDU telling the remote DTE to change its local_par_action."

Cl **57** *SC* **57.2.9** *P* **185** *L* **14** # **1170**

Parsons, Glenn — Nortel Networks

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

No mandatory or optional indication given to support PICs entry.

SuggestedRemedy

Change sentence to:

Some physical layer devices may optionally support Unidirectional OAM operation

Proposed Response *Response Status* **C**

REJECT.

Cl **57** *SC* **57.2.9** *P* **185** *L* **16** # **661**

Daines, Kevin — World Wide Packets

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

Second to last sentence is ambiguous in terms of which critical link event is being referenced.

SuggestedRemedy

Change "contain the critical link event indicating" on line 16
to read: "contain the Link Fault critical link event indicating".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.2.9** *P* **185** *L* **17** # **686**

Joergensen, Thomas — Vitesse Semiconducto

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

According to Annex 43B, the maximum number of OAM frames is 10 per second.
In this section is is said that unidirectional OAMPDUs may be send continuously.
There is no need to send more than 10 unidirectional OAMPDUs per second

SuggestedRemedy

Remove line 17 in 57.2.9

Proposed Response *Response Status* **C**

REJECT.

The rationalization to send more than 10 frames per second when the link is operating unidirectionally is as follows:

a) Since there is no data traffic flowing on a unidirectional link, there is no harm in sending more than 10 OAMPDUs per second.

b) A link operating in unidirectional mode could be experiencing high bit/frame errors. Sending more than 10 OAMPDUs per second increases the chance of the remote device receiving one or more OAMDPUs with one or more Critical Link Event flags.

Cl **57** *SC* **57.3.1.1** *P* **185** *L* **34** # **462**

James, David — JGG

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

Inconsistent capitalization of constants.

SuggestedRemedy

Change to:

57.3.1.1 Constants
OAM_SUBTYPE
The value of the subtype field for OAMPDUs (see Table 43B–3).
SLOW_PROTOCOLS_MULTICAST
The value of the slow protocols multicast address. (see CROSS REF Table 43B-1.)
SLOW_PROTOCOLS_TYPE
The value of the slow protocols lengthType field. (see CROSS REF Table 43B-2.)

57.3.1.2 Variables

begin
A variable that resets the functions within OAM.
(...)

Proposed Response *Response Status* **C**

REJECT.

57.3.1.1 uses the proper capitalization of the constants found in 802.3-2002/Annex 43B.

Cl **57** *SC* **57.3.1.2** *P* **187** *L* **08** # **594**

Braga, Aldobino — UNH-IOL

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

local_satisfied is defined as: A parameter of the OAM_CTL.request service primitive, as defined in 57.2.5.4. This indicates the
OAM client finds the local and remote OAM configuration settings are agreeable.

But what is it that makes two remote OAM configurations agreeable? Can and should this be defined by this standard? Isn't the auto-negotiation resolution process defined?

If we define rules as to why two configurations aren't agreeable, then we won't have to create a mechanism to indicate to the remote oam why the two configurations don't mesh (a to-think-about from the meeting in SF).

SuggestedRemedy

Create an annex detailing the procedure of determining if an oam link is agreeable or not

Proposed Response *Response Status* **C**

REJECT.

See proposed response to comment #679.

Cl **57** *SC* **57.3.1.2** *P* **187** *L* **41** # **662**

Daines, Kevin World Wide Packets

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

Grammar.

SuggestedRemedy

Change "with no critical link events set" on line 41
to read: "with no critical link event(s) set".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.3.1.5** *P* **188** *L* **52** # **586**

Braga, Aldobino UNH-IOL

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

Timers usually have a range associated with them. Most clauses, including Clause 28 which has a large number of timers, have ranges for each timer.

SuggestedRemedy

replace "nominal" with +/- some number or percent

Proposed Response *Response Status* **C**

REJECT.

True. However, sometimes timers are just described as having nominal values. See 23.2.4.3, 32.3.4.2, 36.2.5.1.7, 40.3.3.3 for some examples.

Cl **57** *SC* **57.3.2.1** *P* **189** *L* **26** # **585**

Braga, Aldobino UNH-IOL

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

remote_state_valid just means that the local oam has seen an Info OAMPDU (not that the local oam has seen an Info OAMPDU with the remote's local info TLV).

I know that an Info OAMPDU shall have at a minimum a local info TLV, but I would still like to see that spelled out either in the variable or in the state machine.

SuggestedRemedy

Change the definition of remote_state_valid to indicate that the remotes local information TLV was received

or

change the state machine to check the type of info TLV

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The OAM Editor feels that the existing remote_state_valid definition as found within 57.3.1.2 is sufficient. However, if it makes UNH IOL that much more friendly, a small change is warranted.

Change: "This is used to indicate OAM client has received remote state information contained within Information OAMPDUs."

to read: "This is used to indicate OAM client has received remote state information found within Local Information TLVs of received Information OAMPDUs."

Cl **57** *SC* **57.3.2.1** *P* **190** *L* **01** # **728**

Horvat, Michael — Infineon Technologies

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

Case that the '-R' device and the '-O' device are both configured to passive mode is not excluded.

SuggestedRemedy

Add that '-O' device always has to support active mode.

Proposed Response *Response Status* **C**

REJECT.

It is not appropriate for Clause 57 to mandate behavior of '-O' devices for at least two reasons. First, OAM is not mandatory. Second, it is not practical to update Clause 57 for all devices to come in the future.

Please see 66.6.2 for a brief subclause that mentions active and passive mode access devices.

In addition, 61.1.4.1.4 mentions OAM. Some OAM/copper specific text could be added here.

Cl **57** *SC* **57.3.3** *P* **191** *L* **17** # **3**

Thomas Dineen — Dineen Consulting

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

In Figure 57-5 the Transition from state WAIT_FOR_TX to state CHECK_PHY+LINK has an extra parentheses on the right hand side of the state transition equation:

"!pdu_timer_done * !valid_pdu_req
* ((MCF:MADR * local_mux_action=FWD)
+ LBF:MADR))"

SuggestedRemedy

Delete the last parentheses on the right hand side of the equation.

Proposed Response *Response Status* **C**

ACCEPT.

Eagle eye award goes to Tom!

Cl **57** *SC* **57.3.3.1.2** *P* **192** *L* **13** # **663**

Daines, Kevin — World Wide Packets

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

The incorrect local_pdu value is referenced.

SuggestedRemedy

Change "NONE" to "RX_INFO" on line 13.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.3.3.1.3** *P* **192** *L* **37** # **664**

Daines, Kevin — World Wide Packets

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

To assist the reader in understanding Unidirectional OAM capability, a cross-reference could be added here.

SuggestedRemedy

After "capability" add "(See 57.2.9)" on line 37.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.3.3.1.4** *P* **192** *L* **53** # **203**

Squire, Matt — Hatteras Networks

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

The term 'enabled' here seems misleading as OAM may be enabled, but the discovery process may not be completed (two different things).

SuggestedRemedy

Remove "and thus OAM has not been enabled on the link".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.4** *P* **194** *L* **21** # **4**

Thomas Dineen — Dineen Consulting

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

Section 57.4.1 subsections a through d are redundant to clause 3 sections 3.2 and 3.3

SuggestedRemedy

Delete subsections a through e and relpace with a reference to clause 3.

Add: "Issues of OAM PDU Octet and bit ordering are described in Clause 3 subsections 3.2 and 3.3.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

57.4.1 will be changed as follows:

"57.4.1Ordering and representation of octets

All OAMPDUs comprise an integral number of octets. When the encoding of (an element of) an OAMPDU is depicted in a diagram:
a) Octets are transmitted from top to bottom.
b) Within an octet, bits are shown with bit 0 to the left and bit 7 to the right.
c) When consecutive octets are used to represent a binary number, the octet transmitted first has the more significant value.
d) When consecutive octets are used to represent a MAC address, the least significant bit of the first octet is assigned the value of the first bit of the MAC address, the next most significant bit the value of the second bit of the MAC address, and so on for all the octets of the MAC address.

When the encoding of an element of an OAMPDU is depicted in a table, the least significant bit is bit 0."

Cl **57** *SC* **57.4.2** *P* **195** *L* **06** # **463**

James, David — JGG

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

Inconsistent field naming conventions

SuggestedRemedy

Change:

Destination Address ==> destinationAddress
Source Address ==> sourceAddress
Length/Type ==> lengthType
Data/Pad ==> dataPad
FCS ==> fcs

Etc. for following farmes also.

Proposed Response *Response Status* **C**

REJECT.

Clause 57 OAM was patterned after Clause 43 Link Aggregation. LACP used field descriptors such as "Destination Address", "Length/Type" etc. The OAM editor doesn't feel there is a need to change the naming convention.

Cl **57** *SC* **57.4.2** *P* **195** *L* **06** # **464**

James, David — JGG

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

Fields should be centered.

SuggestedRemedy

1) Center the field names within the boxes.
2) Describe the specific values in the field definitions.

Proposed Response *Response Status* **C**

REJECT.

1) Since some boxes contain both field names and values, for readability sake, left-justified text is acceptable here.

2) The OAM editor feels the values are sufficiently described in the field definitions.

Cl **57** *SC* **57.4.2** *P* **195** *L* **06** # **465**

James, David JGG

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

Inconsistent hex notation:
0X03
88-99
01-80-c2-00-00-02

SuggestedRemedy

1) Use a consistent notation through-out the document.
2) My preference is two thin spaces or '.' between pairs of digits, followed by a subscript 16, with A-F being capitals.

Proposed Response *Response Status* **C**

REJECT.

The hexadecimal notations used in Clause 57 are consistent with 802.3ah and prior 802.3 projects. The canonical notation is used for addresses. The "0x03" style is used for field values. Refer to 802.3-2002/43.4.2.2 for an example.

Cl **57** *SC* **57.4.2** *P* **195** *L* **11** # **149**

Dawe, Piers Agilent

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

Looks like you have made heavy use of "0x" notation which I understand comes from C; not required knowledge for reading a standard. Please refer to 1.2.5 at first use.

SuggestedRemedy

Per comment. Thanks!

Proposed Response *Response Status* **C**

REJECT.

See proposed response to comment #465.

Cl **57** *SC* **57.4.2** *P* **195** *L* **21** # **592**

Braga, Aldobino UNH-IOL

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

There is no PICS entry for this shall statement.

OAMPDUs shall have the following fields:

SuggestedRemedy

Create a PICS entry for this shall statement.

Proposed Response *Response Status* **C**

REJECT.

Doesn't PDU2 cover this? Can two related 'shalls' map to the same PICS entry?

Cl **57** *SC* **57.4.2** *P* **195** *L* **21** # **467**

James, David JGG

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

Inconsistent field names.
The use of two field names for the same thing is confusing.

SuggestedRemedy

Delete mention of DA and SA.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

DA and SA are properly identified as acronyms after first use. They are used consistently throughout the standard.

However, they are missing from 1.5 and will be added.

Cl **57** *SC* **57.4.2** *P* **195** *L* **21** # **466**

James, David JGG

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

Inconsistent formats for descriptions.

SuggestedRemedy

For _all_ fields, use a DefinitionLike style, to produce:

57.4.2 Destination Address: The ...

Proposed Response *Response Status* **C**

REJECT.

The field definitions follow the 802.3ad/Clause 43, which first define Slow Protocols LACP and Marker. Clause 57 uses Clause 43 as a model.

Cl **57** *SC* **57.4.3** *P* **195** *L* **53** # **5**

Thomas Dineen — Dineen Consulting

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

Text from line 53:
"All OAMPDUs contain a common, fixed header comprising the Destination Address, Source Address, Length/Type field, Subtype field, Flags field and Code field."

Since OAM PDUs are really compliant IEEE 803.3 frames this sentence is redundant to clause 3.

SuggestedRemedy

Delete:
"All OAMPDUs contain a common, fixed header comprising the Destination Address, Source Address, Length/Type field, Subtype field, Flags field and Code field."

Add:

"OAM PDUs shall be formatted as compliant IEEE 802.3 Frames, where the IEEE 802.3 Frame Header format is described in clause 3. OAM PDUs are further defined, as shown in figure 57-7, to include a Subtype Field, a Flags Field, and a Code Field following the IEEE 802.3 defined Length / Type Field"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remedy needs to be amended:

"OAM PDUs" -> "OAMPDUs" 2x
"figure 57-7 -> Figure 57-7" 1x
Length / Type -> Length/Type 1x

check other capitalization as needed

Cl **57** *SC* **57.4.3.6** *P* **200** *L* **03** # **1177**

Parsons, Glenn — Nortel Networks

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

No mandatory or optional indication given to support PICs entry.

SuggestedRemedy

reword first paragraph as follows:

The optional Organization Specific OAMPDU, identified with the Code field set to 0xFE, is used for organization specific extensions.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.4.3.6** *P* **200** *L* **15** # **1156**

Parsons, Glenn — Nortel Networks

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

To be consistent with the rest of the OAM clause, the Organization specific OAMPDU should use the 'vendor identifier' (that itself should be EUI64 per another comment) as the first part of its data instead of the OUI.

SuggestedRemedy

Replace OUI with EUI64 or vendor identifier (that is defined as a subset of EUI64)

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See response to comment #1155.

Cl **57** *SC* **57.4.3.6** *P* **200** *L* **22** # **1152**

Parsons, Glenn — Nortel Networks

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

In this clause and table 57-10 the rationale for the reference to 22.4.3.1 is not clear. The reference describes how to map 24 bit OUI into 32 bit PHY identifier. This is not relevant.

SuggestedRemedy

Delete reference. Refer instead to OUI as defined in IEEE 802-2001.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change:
"Organizations are distinguished by the Organizationally Unique Identifier (OUI) as per CROSS REF 22.2.4.3.1.3. The first three octets of the Organization Specific OAMPDU Data field contains the 24-bit OUI. The remainder of the Data field is unspecified."

to read:
"The first three octets of the Organization Specific OAMPDU Data field contains the Organizationally Unique Identifier (OUI). Additional detail describing the format of OUIs can be found in IEEE Std 802-2001 Clause 9. The format and function of the rest of the Organization Specific OAMPDU Data field is dependent on OUI value and is beyond the scope of this standard."

In addition, use portions of 802.3-2002/Figure 22-12 and text from 22.2.4.3.1 to amend Figure 57-13 and 57.4.3.6.

Cl **57** *SC* **57.4.3.6** *P* **200** *L* **22** # **6**
Thomas Dineen Dineen Consulting

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

Incorrect reference, the reference is to section 22.2.4.3.1 is as follows:
"22.2.4.3.1 PHY Identier (Registers 2 and 3)"
which dose not define the OUI, it uses the OUI to form a PHY Identidier.

SuggestedRemedy

Replace reference to 22.2.4.3.1 with reference to IEEE Std 802-2001 Clause 9.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See proposed response to comment #1152.

Cl **57** *SC* **57.4.3.6** *P* **200** *L* **23** # **1153**
Parsons, Glenn Nortel Networks

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

The 'interested applicants' note should include more than a street address.

SuggestedRemedy

Add URL for OUI web page (http://standards.ieee.org/regauth/index.html) and possibly email address (ieee-registration-authority@ieee.org)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Propose URL be added.

Cl **57** *SC* **57.5.2** *P* **201** *L* **01** # **7**
Thomas Dineen Dineen Consulting

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

Refering to the first line of table 57-6 the first entry reads: "Reserved - end of TLV marker". I would suggest that this entry is not reserved, that it is in fact defined and used as "End Of TLV Marker".

SuggestedRemedy

Delete the "Reserved".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.5.2.1** *P* **201** *L* **22** # **8**
Thomas Dineen Dineen Consulting

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

"Local Information TLVs are identified by the value 0x01."
The above statement is redundant to Table 57-6.

SuggestedRemedy

Delete: "Local Information TLVs are identified by the value 0x01."

Add: "The encoding of this field is found in table 57-6."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.5.2.1** *P* **202** *L* **31** # **665**
Daines, Kevin World Wide Packets

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

Bits 7:5 add no value. An OAM client can not determine anything useful from learning the remote device supports "Organization Specific" anything without knowing which specific OUIs are supported.

SuggestedRemedy

Change bits 7:5 as follows
- Consolidate into one row in table 7:5
- Change name to Reserved.
- Change description to read same as State/bit 0

On page 212, lines 28, 30 and 33, the cross-references to Table 57-8 should be removed.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.5.2.2** *P* **201** *L* **44** # **9**
Thomas Dineen Dineen Consulting

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

"Remote Information TLVs are identified by the value 0x02."

The above statement is redundant to Table 57-6.

SuggestedRemedy

Delete "Remote Information TLVs are identified by the value 0x02."

Add: "The encoding of this field is found in table 57-6."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.5.2.2** *P* **201** *L* **49** # **205**

Squire, Matt — Hatteras Networks

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

We've cut & pasted the meanings of the remote information TLV from the local information TLV, and I don't think thats right. We should probably make clear that the remote Information TLV is really copied back from the other guy.

SuggestedRemedy

Replace description of all fields with (after size stuff)

The value of this field is copied from the value of the field in the last received Local Information TLV received from this peer.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.5.2.2** *P* **203** *L* **19** # **1155**

Parsons, Glenn — Nortel Networks

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

The Vendor Identifier described in table 57-10 should be aligned with the EUI64 identifier. IEEE/RAC now requires that new applications use EUI64. Their review would likely recommend the same thing. That is, it should be 64 bits.

SuggestedRemedy

Define the Vendor Identifier as a subset of EUI64 with a 24 bit device identifier and a 16 bit version identifier.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Clause 57 is defining a vendor specific protocol identifier (in a manner similar to SNAP) and not a globally unique identifier. Hence, neither the usage of the EUI-48/64 nor any other EUI is appropriate.

In addition, according to "Guidelines for EUI64: 64-bit Global Identifiers," no more than one EUI-64 value shall be contained within each component that is manufactured. This restriction would prevent an OAM-enabled DTE from speaking two or more separate organization specific protocols.

Rather than the suggested remedy, the following changes will be made:
Split Table 57-10 into two. One table will contain just the OUI. The second table will contain a 32-bit vendor specific information field.

Add note to Table 57-10 and other uses of OUI within Clause 57: "Organizations that have previously received OUIs from the IEEE Registration Authority should use one of their allocated OUIs consistently as the company identifier."

Cl **57** *SC* **57.5.2.2** *P* **203** *L* **31** # **1154**

Parsons, Glenn — Nortel Networks

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

Note a duplicates footnote 3 on page 200.

SuggestedRemedy

Delete this note.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.5.2.3** *P* **203** *L* **44** # **1178**

Parsons, Glenn — Nortel Networks

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

No mandatory or optional indication given to support PICs entry.

SuggestedRemedy

Reword first sentence:
The optional Organization Specific Information TLV shall have the following fields:

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.5.2.3** *P* **203** *L* **46** # **10**

Thomas Dineen — Dineen Consulting

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

"Organization Specific Information TLVs are identified by the value 0xFE."

The above statement is redundant to Table 57-6.

SuggestedRemedy

Delete: "Organization Specific Information TLVs are identified by the value 0xFE."

Add: "The encoding of this field is found in table 57-6."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** SC **57.5.2.3** P **203** L **51** # **469**

James, David JGG

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

Illegal and ill-advised OUI usage. All new identifier uses based on the OUI are required to use the EUI-64 unique identifier format. Relying on the owner of the OUI to properly administer Data/Pad values uniquely does not (in practice, speaking an as IEEE/RAC member) work.

SuggestedRemedy

Change (c,d) to:

c) organizationEui. A three-octet organizationally unique identifier (OUI) followed by 5 bytes administered by that organization. The concatenation of these fields forms an EUI-64, as defined by the IEEE/RAC.

d) organizationSpecific. Data bytes whose format and meaning are dependent on the organizationEui.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See response to comment #1155.

Cl **57** SC **57.5.3** P **204** L **03** # **1174**

Parsons, Glenn Nortel Networks

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

No mandatory or optional indication given to support PICs entry.

SuggestedRemedy

Reword first paragraph:

Optional Link Event TLVs are found in Event Notification OAMPDUs. Table 57-11 contains the defined Link Event TLVs.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Rather than making this change, instead add "optional" on page 197, line 29 preceding "Event Notification."

Also, add "optional" to description of Data field to read:

"Following the Sequence Number field, the Data field shall contain one or more optional Event TLVs which may provide useful information for troubleshooting events and faults. Event TLVs are defined in 57.5.3."

Also, change cross-reference for *EVNT PICS entry to 57.4.3.2 and 57.5.3.

Cl **57** SC **57.5.3** P **204** L **07** # **1175**

Parsons, Glenn Nortel Networks

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

'event' is ambiguous and does not match (or map to) 'link event' label in table 57-8

SuggestedRemedy

rename 'event' -> 'link event' as appropriate

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "57.5.3 Event TLV" to "57.5.3 Link Event TLV"
Search through 57.5.3.*, replace "Event TLV" with "Link Event TLV."
Search through PICS and update appropriately.

Cl **57** SC **57.5.3** P **204** L **11** # **11**

Thomas Dineen Dineen Consulting

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

Refering to the first line in Table 57-11:

"Reserved - end of TLV marker"

I would submit that this line is not reserved, and further that it is defined and used as "End Of TLV Marker".

SuggestedRemedy

Delete the "Reserved".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.5.3.2.** *P* **205** *L* **21** # **729**

Horvat, Michael — Infineon Technologies

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

According to Figure 57-2, there is no path between MAC client and OAM client.
How does the reception status parameter of the MA_DATA comes to the OAM client?

SuggestedRemedy

Add respective connection between MAC client and OAM client in Figure 57-2.

Proposed Response *Response Status* **C**

REJECT.

57.5.3.2 provides a simple definition of errored frames. Errored frames are detected at the MAC. The Clause 30 (or equivalent) management attributes that are intended to be reflected by Errored Frame Event TLV are:

- 30.3.1.1.6 aFrameCheckSequenceErrors
- 30.3.1.1.7 aAlignmentErrors
- 30.3.1.1.15 aFramesLostDueToIntMACRcvError
- 30.3.1.1.23 aInRangeLengthErrors
- 30.3.1.1.24 aOutOfRangeLengthField
- 30.3.1.1.25 aFrameTooLongErrors

Note: 802.3-2002 used as the source for the references.

Please refer to 30.3.1.1.5 and 4.2.9 for more information.

Access between the OAM client and management out of scope and assumed.

Cl **57** *SC* **57.6** *P* **208** *L* **11** # **1173**

Parsons, Glenn — Nortel Networks

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

No mandatory or optional indication given to support PICs entry.

SuggestedRemedy

Change the first sentence to:

MIB variables may be queried through the use of Variable Request OAMPDUs...

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Rather than making this change, add "optional" to the PDU definitions found in 57.4.3.3 and 57.4.3.4.

Also, add "optional" to the PDU definitions found in 57.4.3.5 and 57.4.3.6 to be consistent.

Also, change cross reference for *VAR to 57.4.3.3 and 57.4.3.4.

Cl **57** *SC* **57.7.2.3** *P* **212** *L* **06** # **1162**

Parsons, Glenn — Nortel Networks

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

All major capabilities are dependent on whether the OAM sublayer is supported or not. These predicates are not shown.

SuggestedRemedy

Add predicate to all remaining major capability items pointing to 'OAM' item (added in another comment). For example:
OM OAM Object Class 30.11 OAM:O

Proposed Response *Response Status* **C**

REJECT.

All clauses within OAM are optional. As such, a major capability for implementation of the clause is not required.

Cl **57** *SC* **57.7.2.3** *P* **212** *L* **06** # **1161**

Parsons, Glenn — Nortel Networks

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

The first major capability of the OAM clause must be whether OAM is supported or not.

SuggestedRemedy

Insert new initial PICS entry:
*OAM OAM sublayer 57.1.5.1 O

Proposed Response *Response Status* **C**

REJECT.

See response to comment #1162.

Cl **57** *SC* **57.7.2.3** *P* **212** *L* **06** # **1164**

Parsons, Glenn — Nortel Networks

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

There is no mandatory or optional requirement for the OAM object class in clause 30.11.

SuggestedRemedy

Add this requirement in clause 30.11 or in an appropriate location in clause 57 or delete this item.

Proposed Response *Response Status* **Z**

WITHDRAWN.

Cl **57** *SC* **57.7.2.3** *P* **212** *L* **11** # **1163**
Parsons, Glenn Nortel Networks

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

MODE is redundant. Listing Active mode and passive mode as 'O.1' options is sufficient.

SuggestedRemedy

Delete the 'MODE' item

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.7.2.3** *P* **212** *L* **23** # **1176**
Parsons, Glenn Nortel Networks

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

Information TLVs are a major feature that need to be added to the PICS:

SuggestedRemedy

Add a new item:
*INFO Information TLV 57.5.2, table 57-8 OAM:M

Proposed Response *Response Status* **C**

REJECT.

57.7.3.5 covers Information TLVs (minus the relatively new Organization Specific Information TLV covered by another comment).

Cl **57** *SC* **57.7.3** *P* **212** *L* **36** # **1172**
Parsons, Glenn Nortel Networks

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

Since clause 57 is optional, all PICS entries must be a predicate of one of the the major capabilities.

SuggestedRemedy

Revise all PICS entries to ensure that the status is a predicate of the appropriate item in 57.7.2.3. The default would be to assign them all to be OAM:..., but this needs to be checked.

Proposed Response *Response Status* **C**

REJECT.

See response to comment #1162.

Cl **57** *SC* **57.7.3** *P* **212** *L* **38** # **1179**
Parsons, Glenn Nortel Networks

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

PICS mapping to clause is incomplete as not all PICS entries are supported by 'mandatory', 'shall', 'optional' or 'may' text within the clauses.

SuggestedRemedy

Review all PICS entries to ensure that each entry references an appropriate 'mandatory', 'shall', 'optional' or 'may' text within the referenced clause.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.7.3.2** *P* **213** *L* **42** # **669**
Daines, Kevin World Wide Packets

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

The items need to have the same prefix.

SuggestedRemedy

Change "CEV1" to "EV1" on page 213, line 42.
Change "CEV2" to "EV2" on page 213, line 45.
Change "LEV1" to "EV3" on page 213, line 47.

Change "LS1" to "LB1" on page 214, line 8.
Change "LS2" to "LB2" on page 214, line 10.
Change "LE1" to "LB3" on page 214, line 19.
Change "LE2" to "LB4" on page 214, line 24.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.7.3.2** *P* **213** *L* **47** # **587**
Braga, Aldobino UNH-IOL

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

No previous PICS has had different item names (with the exception of the number) in the same table.

SuggestedRemedy

Recommend changing CEV# and LEV# to EVNT#

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See proposed response to comment #669.

Cl **57** *SC* **57.7.3.3** *P* **214** *L* **03** # **589**
Braga, Aldobino UNH-IOL

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

These shall statements have been removed from the document.
These PICS should no longer exist.

SuggestedRemedy

Either remove the PICS or add the shalls

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

With the 'shalls' downgraded to 'recommended,' the PICS entries will be removed.

Cl **57** *SC* **57.7.3.5** *P* **216** *L* **22** # **591**
Braga, Aldobino UNH-IOL

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

IT5 and IT6 PICS Value/Comment do not match the intention of the shall in the document.

PICS:
Contains revision encoded as an unsigned 16-bit integer

Document Shall Statement:
The value of this field shall start at zero and be incremented each time something in the Information TLV changes.

SuggestedRemedy

Change PICS to reflect the shalls in the document

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.7.3.5** *P* **216** *L* **32** # **590**
Braga, Aldobino UNH-IOL

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

PIC Statement handles two shalls.

Two pics should be created:
1) to handle Parser Action 0x03 shall not be transmitted
2) to handle Parser Action 0x03 shall be ignored on reception

SuggestedRemedy

Create two PICS

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.7.3.5** *P* **216** *L* **47** # **818**
Martin, David Nortel Networks

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

The PICS entries related to the recently added Organization Specific Information TLV are missing

SuggestedRemedy

Add Feature entries for the Organization Specific Information TLV.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.7.5** *P* **218** *L* **12** # **593**
Braga, Aldobino UNH-IOL

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

PICS entries VAR2 and VAR3 have value/comments different from the text in the document.

Variable Descriptors are not mentioned in the document, Variable Containers are.

SuggestedRemedy

Change VAR2 and VAR3 value/comments cells to reference Variable Containers not Variable Descriptors

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **57.7.6** *P* **218** *L* **37** # **588**
Braga, Aldobino UNH-IOL

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

I'm told that every shall shall have a PICS and every PICS shall have a shall.

RB1: represents 3 shalls in the document
Table 57-3
Table 57-7 line 6
Table 57-7 line 21

SuggestedRemedy

Create Three PICS: one for each shall statement

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **Figure 57-1** *P* **175** *L* **29** # **459**

James, David JGG

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

Excessive figure title, which will cause problems in a list of figures (LOF), if one is included (as they are now allowed).

SuggestedRemedy

Reduce the length of the title, perhaps to:

Figure 57-1 - OAM sublayer relationship to the ISO/IEC OSI reference model and IEEE 802.3 CSMA/CD LAN model

Proposed Response *Response Status* **C**

REJECT.

No list of figures is included in 802.3. This and all other editorial/style issues will be forwarded to the IEEE Staff editors.

Cl **57** *SC* **Figure 57-4** *P* **189** *L* **17** # **57001**

OAM STF

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

OAM being established on passive to passive links is not excluded in D2.0. Since local_pdu is not set in Figure 57-4/CHECK_MODE state, two passive DTEs can send Information OAMPDUs. This can lead to OAM being enabled.

SuggestedRemedy

Introduce new value for local_pdu called LF_INFO. Change the definition of local_pdu, within 57.3.1.2, as follows:

"LF_INFO; Only Information OAMPDUs with the Link Fault critical event set and without Information TLVs are allowed to be transmitted."

Add the following "local_pdu <= LF_INFO" in CHECK_MODE.

Add a statement at the end of 57.3.3.1.1 to read as follows:
"If local_pdu is set to LF_INFO, the Multiplexer function shall ensure the Information OAMPDU only has the Link Fault bit of the Flags field set and has no Information TLVs in the Data field."

Modify the paragraph following Figure 57-8 as follows:

"When local_pdu is set to LF_INFO, the Information OAMPDU Data field shall not have any Information TLVs. When local_pdu is not set to LF_INFO, the Information OAMPDU Data field shall consist of the Local Information TLV (see 57.5.2.1) immediately following the Code field. In addition, if the Discovery state diagram variable remote_state_valid is TRUE, the Data field shall also contain the Remote Information TLV (see 57.5.2.2), immediately following the Local Information TLV and may also contain other Information TLVs found in Table 57-6."

Modify Figure 57-8 by dashing the Local Info TLV box.

Modify the last line of 57.2.9 to read: "These OAMPDUs are sent once per second."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **57** *SC* **Figure 57-4** *P* **189** *L* **44** # **679**

Daines, Kevin World Wide Packets

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

If the local OAM client is not satisfied with the settings of the remote device it will not set local_stable to TRUE. In this situation, the local Discovery process will remain in SEND_LOCAL_REMOTE_1 indefinately, sending Information OAMPDUs once per second. The remote DTE will receive the Information OAMPDUs, note the received local_stable bit is FALSE and just wait. No information is provided as to why a device is "unsatisfied."

SuggestedRemedy

One possible remedy is to add bits within the flags field. While local_stable=FALSE, these new bits could provide information as to why the device is not satisfied. The only reason clearly defined within the draft is a mode mismatch (i.e., I expected the remote DTE to be passive and instead he said he was Active).

With the addition of one bit, the following decode is possible:

{ local_stable, "new bit" }
00 : Discovering
10 : Discovery Complete (satisfied implicit)
01 : Unsatisfied due to mode mismatch
11 : Reserved

Modest value add in my opinion. Nice to have, but not a TR.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Straw Poll #1

Who thinks feedback about the progress of the Discovery process is useful?
Y = 6 votes
N = 1 vote

Straw Poll #2

Should the feedback be a single bit (the OAM client is finished thinking about bringing up OAM and has decided not to) or a set of bits indicating the reason(s) why OAM is not being brought up?
1 bit = 3 votes
more than 1 bit = 1 vote

Adopt remedy as modified below:

Change Flags field in Table 57-3, and associated definitions by adding two flags bits:

Add "5 | Remote Discovering | Indication that remote DTE is evaluating local and remote settings as part of the Discovery process.
3 5
0 1 = Remote Discovery process not complete
1 0 = Remote Discovery process complete
0 0 = Remote Unsatisfied, Discovery can not complete
1 1 = Reserved"

Add "6 | Local Discovering | Indication that local DTE is evaluating local and remote settings as part of the Discovery process.
4 6
0 1 = Local DTE Discovery process not complete
1 0 = Local DTE Discovery process complete
0 0 = Local DTE Unsatisfied, Discovery can not complete
1 1 = Reserved"

Also, change 30.11.1.1.7 aOAMLocalFlagsField by adding two bits to the width and two bits to the description.

Also, change 30.11.1.1.8 aOAMRemoteFlagsField by adding two bits to the width and two bits to the description.

Cl **57** *SC* **Table 57-2** *P* **182** *L* **09** # **325**

Alan Weissberger Data Communications

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

a] What is "an unspecified critical event?" This needs to be defined or examples given to facilitate interoperability.
b] Also, the name of the Table is misleading, as one of the table entries- "critical event"- has almost the same name as the Table does -"Critical link events."

SuggestedRemedy

Proposed Solutions:
a] Either define "critical event" or give examples to guide implementors. If there are several such events, then specify a "Cause field" with bits reserved for each one.

b] Also suggest renaming The table so as not to conflict with the name of the 3rd table entry. Suggest "Catastrophic link events," or "Real Time Link Events, or something similar

Proposed Response *Response Status* **C**

REJECT.

See proposed response to comment #210, 211. Not entirely germain, but useful nonetheless.

Link events are broken into two categories:
- Critical link events: Things that will most likely impact link operation
- Link events: Things that may impact link operation

At one point in time, the OAM STF had several link events defined. See 802.3ah/D1.1 Table 55-1. In particular, power, temperature and vendor defined were listed. Much discussion and debate ensued and the OAM STF decided to reduce the list down to 3 bits:

- Link fault - dealing directly with link operation
- Dying Gasp - dealing with DTE operation. This could include loss of power or other conditions which would likely impact link operation
- Other - an unspecified critical event, meaning something other than link fault or dying gasp has occurred.

Since 802.3 charter and domain is restricted to a single link, the OAM STF was given much guidance about straying too far north in this respect. The OAM STF also consciously decided not to list things like power, voltage levels, temperature etc. It quickly becomes a slipperly slope.

Cl **57** *SC* **Table 57-8** *P* **202** *L* **30** # **206**

Squire, Matt Hatteras Networks

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

The organization specific flags don't really have any meaning, as you don't know what OUI they refer to. For example, I can support some/all/none of the organizaitional specific TLVs for my company, some/all/none of another compnay, some/all/none of some other standards body thats extended this protocol, etc.

SuggestedRemedy

Changes bits 7:5 to reserved.

Proposed Response *Response Status* **C**

ACCEPT.

See comment #665, which has more complete editing instructions.

Cl **58** *SC* *P* **220** *L* # **851**

Meir Bartur Optical Zonu

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

Does not include single wavelength option

SuggestedRemedy

Include single wavelength option

Proposed Response *Response Status* **U**

REJECT.

The dual wavelength proposal was adopted as baseline for the 100M bidi PMD. The single wavelength proposal was not adopted. This baseline was adopted at the Edinburgh Interim in May 2002, after the issue being discussed at several meetings.

Cl **58** *SC* *P* **220** *L* **11** # **470**

James, David JGG

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

The *ref* convention is not specified and seems inconsistent with the previously used CROSS REF (page 16, line 13) like notation. Also, appears inconsistent with following #CrossRef# notation of Clause 64 or CROSS REF of Clause 65.

SuggestedRemedy

1) Describe the meaning of these notations, if different.
2) Elimination this notation, using real cross-references or (at least) printed text looks correct type of cross-references.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The editor's box on p.219 explains that the *ref* highlight references outside this clause. The notations will be removed prior to publication. Extend text in each of three boxes to read:
'*ref* is intended to highlight references outside of this clause that will be adjusted prior to publication. Occurrences of *ref* will be removed as the document is published and/or incorporated into the base document.

Cl **58** *SC* *P* **222** *L* **20** # **471**

James, David JGG

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

The PHY primitives format is different from the normal service primitives, with no apparent benefit.

SuggestedRemedy

1) Figure out how service primitives are described.
2) Use the same convention for PHY primitives.

The format could, for example, be as follows:

The semantics of the service primitive are

PMD_UNITDATA.indication (
rs_bit
)

rx_bit
A data parameter that ...
ONE--(...)
ZERO--(...)

Proposed Response *Response Status* **C**

REJECT.
The current style is more compact and was adopted at a previous meeting. See response to another comment.

Cl **58** *SC* *P* **224** *L* **15** # **472**

James, David JGG

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

Inconsistent notation:
Signal_Detect
SIGNAL_DETECT
Signal detect

SuggestedRemedy

1) If this is a service primitive parameter, then I would prefer:
signal_detect

2) Whatever is decided, search for inconsistencies and replace.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Usage is:
All capitals: parameter in service primitive.
Lower case: function.
Mixed case with underscore: signal name.

Change Signal detect in table 59-4 to 'SIGNAL_DETECT'. Change p263 line 4 to lower case. Check other two clauses.

Cl **58** *SC* *P* **227** *L* **46** # **473**

James, David JGG

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

Mandating the reader to "interpolate" a between-column line (due to straddled columns) should not be done; its strenuous and subject to error.

SuggestedRemedy

Rearrange listing so that split-colum rows are at the top.

Similar changes for Figure 58-8 and 58-9.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. The editors prefer to leave the rows in the current order which was inherited from other clauses, as a convenience to the reader.

Cl **58** SC P **230** L **18** # **474**
James, David JGG

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

Non-text items should be centered.

SuggestedRemedy

1) Center all columns in this figure.
2) Do consistent changes for other figures.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Center all columns except for the leftmost column.

Cl **58** SC P **231** L **38** # **475**
James, David JGG

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

This table has alot of problems:
1) Item is a blank row
2) "Idle" is not hexadecimal, as claimed
3) Footnote is an orphan, which is confusing
4) The "Destination address" field is not defined elsewhere (perhaps should be destination_address)?
5) Binary number notation is not clear.

SuggestedRemedy

1-4) Fix them
5) Use subscript 2 for binary numbers.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
1) Move 'Item' to top row. Delete resulting empty row. Add 'mark ratio' to 40% and 60%. Delete 'Order, mark ratio'.
2) Change 'IPG' in LH column to 'Idle'.
Add Start-of-Stream Delimiter (first byte of preamble, J, K) and End-of-Stream Delimiter (T, R) (at certain layers). Add column for code-group name per table 24-1.
3) Reject. The three footnotes a, b, c are not orphans.
4) Reject. The destination address field is defined in 3.2.4.
5) Accept in principle. Make clear when using binary numbers. Add (binary) after 'TXD<3:0>', '4B/5B encoded' and 'NRZI encoded'. Add footnote to 'TXD<3:0>' saying see Table 24-1.

Cl **58** SC P **233** L **20** # **477**
James, David JGG

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

Its not clear why "0" and "1" values need quotes.

SuggestedRemedy

Delete the quotes.

Proposed Response *Response Status* **C**

REJECT.
The quotation makes the document more readable. Do not wish to use numerals which might be mistaken as analog quantities. ZERO and ONE would not improve readability.

Cl **58** SC P **233** L **9** # **476**
James, David JGG

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

Refrain from using three consecutive periods, as in ...
This makes it difficult to search for consecutive period errors, a common error observed within FrameMaker.

SuggestedRemedy

Change these to the proper character.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** SC P **237** L **6** # **478**
James, David JGG

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

The vertical axis labels whould be right justified.

SuggestedRemedy

Change from left-justified to right-justified.

Proposed Response *Response Status* **C**

REJECT. We tried and it looked worse.

Cl **58** *SC* *P* **248** *L* **34** # **479**

James, David JGG

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

The abbreviation "W" normally means "Watts"

SuggestedRemedy

1) Use a different acronym.
2) Be sure these acronyms are defined in the abbreviations subclause.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
W is not an abbreviation here, it is a quantity. Will itialicise W, three times here. Check other optics clauses and make equivalent changes if appropriate.

Cl **58** *SC* *P* **249** *L* **36** # **480**

James, David JGG

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

Wrong font size in table, probably due to use of wrong paragraph style.

SuggestedRemedy

Use a consistent table style for smaller-sized text.

Proposed Response *Response Status* **C**

ACCEPT. Apply right style to table 58-14 and equivalents in 59, 60.

Cl **58** *SC* *P* **251** *L* **16** # **481**

James, David JGG

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

Excessive capitalization.

SuggestedRemedy

Change:

58.10.4 Medium Dependent Interface (MDI)
==>
58.10.4 Medium dependent interface (MDI)

Proposed Response *Response Status* **C**

REJECT.
The current text style is consistent with Subclause 1.4 Definitions. Practice of 802.3 is to capitalise names of sublayers.

Cl **58** *SC* *P* **257** *L* **1** # **482**

James, David JGG

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

Excessive length clause title, which would mandate manual table-of-contents updates to correct wrapping error, which is (in itself) prone to human errors.

SuggestedRemedy

Make a shorter clause title.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
This comment is applicable to Clause 59. We will follow chief editor's guidance on clause title length.

Cl **58** *SC* **58** *P* **219** *L* **8** # **107**

Dawe, Piers Agilent

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

Re "Clause 58.1.1 "Goals and objectives" to be removed prior to final publication.": we don't need such an indirect way of preparing our draft. Let's show what we are voting on simply.

SuggestedRemedy

Put Clause 58.1.1 in an editor's note. Delete this note. Similarly in 59, 60.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. The status quo and the proposed remedy are both difficult to implement through the publication process. Instead, just delete the editor's note; this has the effect of leaving the objectives in the published document.

Cl **58** *SC* **58** *P* **220** *L* **5** # **108**

Dawe, Piers Agilent

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

Broken quantity.

SuggestedRemedy

Use nonbreaking space between 10 and km.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **58.1** *P* **220** *L* **10** # **1095**

Law, David 3Com

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

The physical layer includes the PHY as well as the RS - see figure 56-1.

SuggestedRemedy

Suggest that the text 'In order to form a complete physical layer, a PMD shall be integrated ...' should be changed to read 'In order to form a complete PHY, a PMD shall be integrated ...'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change 'physical layer' to 'PHY (physical layer device) ' (all three clauses).
See comment #986.

Cl **58** *SC* **58.1** *P* **220** *L* **4** # **1096**

Law, David 3Com

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

The introductory text doesn't seem to state what is specified in this Clause but does state that the PMD provides a 'Ethernet connection' which I'm not too sure is correct, the PMD is only part of a connection and a MAC would be required as well.

SuggestedRemedy

Based on similar text found elsewhere (for example IEEE Std 802.3ae-2002 Clause 53 and IEEE Std 802.3-2002 Clause 26) suggest that the first two paragraphs be replaced with the text:

'This clause specifies the 100BASE-LX10 and 100BASE-BX10 PMDs (including MDI) and the baseband medium for single-mode optical fiber. In order to form a complete PHY, the PMD shall be integrated with the with the 100BASE-X PCS and PMA of Clause 24, and optionally the management functions defined in Clause 22 and 45, which are hereby incorporated by reference.'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
First paragraph: Keep text, but change 'connection' to 'link'.
Second paragraph: See comment #986.

Cl **58** *SC* **58.1** *P* **220** *L* **41** # **987**

Thompson, Geoff Nortel

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

Cross reference is not real, needs to made into a real link.

SuggestedRemedy

Do it

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

It is already a real link. To be explained in editor's box on front page per another comment.

Cl **58** *SC* **58.1** *P* **220** *L* **9** # **986**

Thompson, Geoff Nortel

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

This clause is not appropriately positioned as a PMD clause designed to attach to a cl 24 PHY in a manner that is compatible with the existing standard. In particular, the requirement that this PMD "shall" be integrated with the (cl 24) PHY to form a "complete physical layer" is not appropriate. That integration is a vendor implementation/marketing decision.

SuggestedRemedy

Define as a normal FDDI style PMD using established interface specifications.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change sentence to: "In order to form a complete PHY (physical layer device), a PMD is combined with the 100BASE-X PCS and PMA of Clause 24*ref*, and optionally combined with the management functions which may be accessible through the Management Interface defined in Clause 22*ref**."

Cl **58** *SC* **58.1.1** *P* **220** *L* **48** # **988**

Thompson, Geoff Nortel

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

Extra carriage returns, incorrect style

SuggestedRemedy

Redit to conform to established style for enumerated list.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **58.1.3** *P* **221** *L* **35** # **990**

Thompson, Geoff Nortel

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

This subclause is not necessary if the draft is to go forward in its present form. These references are already normatively imposed on this clause. It has not been the convention of the remainder of 802.3 to include general references to the rest of the standard.

Further, the informative references are in "Annex A" not "Appendix A". Appendix A was, once upon a time "System Guidelines", but never informative references

SuggestedRemedy

If this clause is to stay in 802.3 as currently formulated then this subclause should be removed.
If this clause is to go a new standard that is external to the existing 802.3 then it may be appropriate in some form but should probably go to the front of the new book.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Keep this subclause. It contains very relevant information for the reader. The current document is huge and this subclause helps the reader to find relevant information. Considering that the EFM material might be published seperately from the other clauses, this information becomes even more relevant.

Change "Informative references, see Appendix A*ref*" to "Informative references shown referenced in the format [Bn], see Annex A*ref*."

Cl **58** *SC* **58.1.3** *P* **221** *L* **38** # **991**

Thompson, Geoff Nortel

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

Cross references are not real, needs to made into a real links.

SuggestedRemedy

Do it

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
We cannot convert all into real references now since we don't have access to Clauses 1.1, 1.2, and 21, will be addressed prior to publication. Make real cross references to 1.3, 1.4, 1.5, Annex A and Clause 56 if another comment is accepted.

Cl **58** *SC* **58.1.4** *P* **222** *L* **1** # **993**

Thompson, Geoff Nortel

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

Service primitive definition does not match syntax and content for existing PMDs.

SuggestedRemedy

Refer to LCF-PMD for new text.

Proposed Response *Response Status* **C**

REJECT.
The current format keeps all the substantive material in e.g. 38.1.1 in the same order but is much more compact and improves readability of the clause as a whole.
LCF-PMD is an FDDI document.

Cl **58** *SC* **58.1.4** *P* **222** *L* **1** # **992**

Thompson, Geoff Nortel

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

"code-groups" is technically incorrect.
The primitive is for "UNITDATA", i.e. a serial bit

SuggestedRemedy

Change to "NRZI code-bit stream"
Reference FDDI PMDs cl 6.1
Or possibly "NRZI 4B/5B encoded code-bit stream"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to "NRZI encoded 4B/5B data".

Cl **58** *SC* **58.1.4.4** *P* **222** *L* **47** # **812**

Jönsson, Ulf Ericsson AB

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

When 58.1.1 Goals and objectives is removed it will not be clear what we mean by "error rate objective".

SuggestedRemedy

Change "error rate objective" to "specified error rate"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to "specified error ratio". See #1097.

Cl **58** *SC* **58.1.4.4** *P* **222** *L* **47** # **1097**
Law, David 3Com

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

Typo.

SuggestedRemedy

Shouldn't '... error rate ...' read '... error ratio ...'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See #812.

Cl **58** *SC* **58.10.4** *P* **251** *L* **16** # **999**
Thompson, Geoff Nortel

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

There is no specified standardized MDI.
It is very much a key element of the success of any Ethernet Standard to specify a single interoperable MDI for each cabling interface. The lack of such a specification is a major shortcoming of 10 GBE. We should not make the same mistake for EFM. If EFM was able to suceed in coming up with a single code for copper then choosing a connector should be well within the ability of the group.

SuggestedRemedy

Specify a single (standards based) connector type for connecting to single mode fiber or at least a single connector type for each PMD type. Change the business about specifying the performance at the end of TP2 to be part of the test set-up instead of the interoperability test point.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
The MDI is properly specified (see subclause 58.10.4) and the explicit choice of a connector is neither necessary nor helpful to best meet our objectives in a timely manner.

Commenter's wish for a chosen connector relates to something a consumer might buy, rather than connectors in the CO.

Change to the right IEC reference for fiber optic connector performance (mechanical and optical) for all three clauses. Should be -1 not -1-1.

Cl **58** *SC* **58.11** *P* **252** *L* **1** # **1201**
Law, David 3Com

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

The copyright release text for the PICS is missing.

SuggestedRemedy

Add the PICS copyright release - see 57.7 (page 211) for an example.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **58.11.3.1** *P* **253** *L* **44** # **156**
Radcliffe, Jerry Hatteras Networks

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

Optional entries should have both Yes and No check boxes

SuggestedRemedy

Add No check box to FN3

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Note comment 157. Scrub all optics clauses for this issue.

Cl **58** *SC* **58.11.3.1** *P* **253** *L* **49** # **157**
Radcliffe, Jerry Hatteras Networks

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

Optional requirements should have both Yes and No check boxes

SuggestedRemedy

Add No check box to FN5

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. See comment 156.

Cl **58** *SC* **58.2** *P* **222** *L* **51** # **1098**
Law, David 3Com

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

The Clause 22 register set can also be used to manage a 100BASE-X PHY. This therefore might cause some contention with the Clause 45 register bits called out here. How would the Clause 22 Reset bit (0.15) interact with the MMD PMD/PMA Reset bit (1.0.15).

In addition I don't think I have found any modifications to the MMD PMA/PMD bits to support any speed other than 10Gb/s as it does at the moment. What are the contents of the MMD PMA/PMD mandatory registers (see 45.5.5.3) for a 100BASE-LX/BX PMD. What for example should the Speed Selection bits (1.0.5:2) in the MMD PMA/PMD register be set to and how do they interact with the Clause 22 Speed selection bits (0.6 & 0.13).

SuggestedRemedy

Please update the Clause 45 PMA/PMD MMD to support 100BASE-LX/BX operation. This update should take into account the inclusion of this MMD within a 100BASE-LX/BX PHY which also includes the Clause 22 mandatory registers 0 and 1.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. See comment 1060, 1260 and others on reconciliation of 22 and 45. At beginning of 58.2 59.2, 60.2 change '45' to '22'.

Cl **58** *SC* **58.3.1** *P* **223** *L* **35** # **1099**

Law, David 3Com

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

Aren't shall statements required for when testing a TP2 and TP3.

SuggestedRemedy

Suggest the text 'Unless specified otherwise, all transmitter measurements and tests defined in 58.8 are made at TP2.' should read 'Unless specified otherwise, all transmitter measurements and tests defined in 58.8 shall be made at TP2.' and that the text 'Unless specified otherwise, all receiver measurements and tests defined in 58.8 are made at TP3.' should read 'Unless specified otherwise, all receiver measurements and tests defined in 58.8 shall be made at TP3.'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
We have included "shall" statements as necessary in the measurement section. In fact, if a shall were necessary here the document would need to be structured in a way that these "shall" statements appear in the measurement section.

Cl **58** *SC* **58.4** *P* **225** *L* **30** # **656**

Daines, Kevin World Wide Packets

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

Extra word in cross-reference.

SuggestedRemedy

Change "described in Clause 58.10."
to read "described in 58.10." on page 225, line 30.

Also, change "described in Clause 58.10."
to read "described in 58.10." on page 227, line 29.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **58.4** *P* **225** *L* **30** # **995**

Thompson, Geoff Nortel

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

The text:
"A 100BASE-LX10 compliant transceiver operates over the media types listed in Table 58–1"
doesn't work because there is no real media type listed in Table 58-1 (or 58-9).
There is the text: "Fiber type B1.1, B1.3 SMF" but that is meaningless gobbletygook without a proper reference. I assume that there should be a reference somewhere near here to an actual IEC spec.

SuggestedRemedy

Add normative reference to a full specification for a fiber that satisfies the transmission requirements for this standard or put the actual requirements into the clause.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Include reference to IEC 60793-2 in a footnote. See other comments. Apply to all clauses.

Cl **58** *SC* **58.4.1** *P* **226** *L* **23** # **996**

Thompson, Geoff Nortel

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

I have no idea (in the standards sense) what the following text means nor how (a) I can determine whether the condition is satisfied or (b) if satisfaction of the condition is required.
The text in reference is:

bThe great majority of the transmitted spectrum must fall within the operating wavelength range.

SuggestedRemedy

Define actual requirement
Replace text with language appropriate to a standard.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

58.8.2 states "The great majority of the transmitted spectrum must fall within the operating wavelength range. The allowable range of central wavelengths is narrower than than the operating wavelength range by the actual RMS spectral width at each extreme."
Add to note under table: "see 58.8.2"
Check for consistency between and within optics clauses.

Cl **58** SC **58.5** P **227** L **28** # **997**

Thompson, Geoff — Nortel

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

The text:
"A 100BASE-BX10-D or 100BASEBX10-U compliant transceiver compliant transceiver operates over the media types listed in Table 58–1"
doesn't work because there is no real media type listed in Table 58-1 (or 58-9).
There is the text: "Fiber type B1.1, B1.3 SMF" but that is meaningless gobbletygook without a proper reference. I assume that there should be a reference somewhere near here to an actual IEC spec

SuggestedRemedy

Add normative reference to a full specification for a fiber that satisfies the transmission requirements for this standard or put the actual requirements into the clause.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #995

Cl **58** SC **58.5.1** P **228** L **14** # **114**

Dawe, Piers — Agilent

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

In this clause we don't have a receiver upper bandwidth limit and also we allow a large amount of transmitter "overshoot", partly to allow for baseline wander (+0.25/-0.1) and partly for transient overshoot. This could hypothetically allow an extremely ringy transmitter and a very high bandwidth receiver to form a bad link. Experience indicates that 100 Mb/s transmitters show filtered eyes which do not have as much transient overshoot as higher speed transmitters, so we can reduce this loophole in the standard at no product cost.

SuggestedRemedy

Reduce Y3 from 0.5 to 0.4 and Y4 from 0.65 to 0.55 in tables 58-5 and 58-7. Modify figure 58-5 to match.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** SC **58.7** P **230** L **36** # **115**

Dawe, Piers — Agilent

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

Typo

SuggestedRemedy

Change 0.85 to 0.085. Or delete the note and leave the calculation as an exercise to the reader!

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change 0.85 to 0.085.

Cl **58** SC **58.7** P **235** L **5** # **125**

Dawe, Piers — Agilent

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

There's no need for a "shall" because RIN spec is only a "should": TDP spec covers it.

SuggestedRemedy

Change to "If used, the procedure is ...".

Proposed Response *Response Status* **C**

ACCEPT. Reference should be 58.8.7.

Cl **58** SC **58.8** P **230** L **45** # **116**

Dawe, Piers — Agilent

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

Broken quantity

SuggestedRemedy

Use nonbreaking space between 5 and m.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** SC **58.8.1** P **230** L **54** # **266**

Tom Mathey — Independent

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

Table 24-1 lists the idle pattern, in 5 bit world, as 11111, what was intended?

SuggestedRemedy

Question is: what was intended.

Proposed Response *Response Status* **C**

REJECT.
Yes, the idle is 11111 which appears as 10101 on the NRZI encoded line.

Cl **58** SC **58.8.10** P **242** L **38** # **153**

Alan Flatman — LAN Technologies

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

compliance is not something for an implementor to demonstrate.

SuggestedRemedy

replace implementor with supplier or manufacturer.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove "for the implementer"

Cl **58** *SC* **58.8.12** *P* **247** *L* **51** # **1200**
Law, David 3Com

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

Suggest that the cross reference to 59.9.1 would be a better cross reference here than 59.9 currently.

SuggestedRemedy

Suggest the text '... 58.8.1 or 59.9 as ...' should read '... 58.8.1 or 59.9.1 as ...'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **58.8.12** *P* **248** *L* **2** # **1107**
Law, David 3Com

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

The text states 'The channel and receiver are as specified in e.g. 58.10.2 and 58.10.3.' however subclauses 58.10.2 and 58.10.3 seem to be the channel and connector specifications.

SuggestedRemedy

Either change the text or correct the cross references.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change to "58.8.9.2" and " 58.8.9.3"

Cl **58** *SC* **58.8.3** *P* **233** *L* **3** # **120**
Dawe, Piers Agilent

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

Language: "shall be measured" is not what we mean. We mean shall comply. Editorial: not sure what a "node" is.

SuggestedRemedy

Change to:
Optical power shall meet specifications according to the methods specified in ANSI/EIA-455-95. A measurement may be made with the port transmitting any valid balanced 4B/5B NRZI encoded data stream.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **58.8.4** *P* **233** *L* **9** # **121**
Dawe, Piers Agilent

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

Language: "shall be measured" is not what we mean. We mean shall comply.

SuggestedRemedy

Change to:
Extinction ratio shall meet specifications according to the methods specified ...

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **58.8.6** *P* **234** *L* **1** # **1102**
Law, David 3Com

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

It's not normal to state if a subclause is informative of normative. To make text mandatory it would contain shall statements, from what I can see it does not.

SuggestedRemedy

Remove the text 'informative' from the subclause title.

Proposed Response *Response Status* **C**

REJECT.
This is useful to the reader, and is used in other clauses (e.g. 52.5.3).

Cl **58** *SC* **58.8.6** *P* **234** *L* **22** # **815**
Jönsson, Ulf Ericsson AB

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

log10

SuggestedRemedy

10 in "log10" should be in subscript

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **58.8.7.2** *P* **235** *L* **37** # **1103**
Law, David 3Com

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

Typo.

SuggestedRemedy

Suggest the text '... specified in e.g. Table 58-5 ...' should read '... specified in Table 58-5 ...'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Chenge 'in e.g. Table 58-5' to 'in the appropriate transmitter table, e.g. Table 58-5'.
This procedure is used in other clauses which have their own optical return loss clauses.

Cl **58** *SC* **58.8.7.2** *P* **235** *L* **38** # **1104**
Law, David 3Com

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

Please fully specify the reference to FOTP-107.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Keep FOTP-107 here.
Add to the normative references list: FOTP-107 (ANSI TIA/EIA-455-107A), Determination of Component Reflectance or Link/System Return Loss Using a Loss Test Set - may have to put the ANSI name before the 'FOTP' name.

Cl **58** *SC* **58.8.7.2** *P* **235** *L* **41** # **122**
Dawe, Piers Agilent

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

Yesterday I was asked if this polarisation rotator really does what's intended.

SuggestedRemedy

I will seek an answer before the meeting.

Proposed Response *Response Status* **Z**

REJECT.

We believe no change is necessary.

Cl **58** *SC* **58.8.7.3** *P* **236** *L* **8** # **998**
Thompson, Geoff Nortel

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

It would appear that this test procedure is flawed in that the power in step (d) PsubM is not deterministic because the power is (a) code dependent (4B/5B is not balanced) and (b) no input test codition code stream is specified. The equivalent procedure in 52.9.6.3 does not appear to have this problem.

SuggestedRemedy

Fix it or explain why it is not a problem.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clarify that one should use the test pattern for testing RINxOMA. This pattern is specified in 58.8.1.

Cl **58** *SC* **58.8.8** *P* **237** *L* **4** # **127**
Dawe, Piers Agilent

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

Language: "Measurements shall be performed" is not what we mean. We mean that systems shall comply. Also, this subclause is now called by e.g. 59.9.8.

SuggestedRemedy

Change this sentence to:
The transmitter optical waveform of a port transmitting the test pattern specified for the PMD type, e.g. in 58.8.1, shall meet specifications according to the methods specified below.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **58.8.8** *P* **237** *L* **4** # **1106**
Law, David 3Com

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

Incorrect cross refernce.

SuggestedRemedy

Suggest that '... as shown in 58-6.' should read '... as shown in 58-5.'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **58.8.8** *P* **237** *L* **49** # **1105**

Law, David 3Com

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

Typo.

SuggestedRemedy

Please use a 'x' sign rather than a '.' for multiplication.

The same comment applies to Line 15, page 238.

Proposed Response *Response Status* **C**

ACCEPT.
Make consistent across clauses.

Cl **58** *SC* **58.8.9** *P* **238** *L* **29** # **128**

Dawe, Piers Agilent

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

Language: the sentence in 58.8.9.4, "the following procedure shall be used" is not what we mean. We mean that systems shall comply.

SuggestedRemedy

Insert a new sentence-paragraph at the beginning of 58.8.9:
The TDP of a port transmitting the appropriate test pattern test shall meet specifications according to the methods specified below.

In first sentence of 58.8.9.4, change "shall be" to "is".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **All** *P* **220** *L* **1** # **985**

Thompson, Geoff Nortel

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

If the 100BASE-BX10 PMD is to achieve its Broad Market Potential then it must include the combiner splitter within the scope of the specification and present a single specified MDI at each end. What seems to be here is separate specifications for the transmitter and receiver as though they were separate interfaces.

SuggestedRemedy

Respecify 100BASE-BX10 PMDs as transceivers (as opposed to transmitters and receivers) with on-board splitters-combiners and a specified interface to a single fiber.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The intention is to present a single MDI at each end and this will be made clearer.
Will add text in 58.10.4 and 59.3.1 to clarify that the MDI for 100BASE-BX10 connects to one fibre and that the splitter is within the specified PMD. There are no separate splitter specifications for 100BASE-BX10.
Apply to all three optics clauses as appropriate.

Cl **58** *SC* **Figure 58-1** *P* **221** *L* **11** # **989**

Thompson, Geoff Nortel

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

Obsolete style of diagram refers to "LLC - LOGICAL LINK CONTROL" as the exclusive MAC CLIENT for 802.3

SuggestedRemedy

Redit to conform to current style (refer to 1000BASE-T diagram)
"LLC - LOGICAL LINK CONTROL" should be "LLC - LOGICAL LINK CONTROL OR ORHER MAC CLIENT"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **Table 58-1** *P* **220** *L* **22** # **1094**

Law, David 3Com

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

Please complete the Fibre type specifications.

SuggestedRemedy

Please add additional text either in the table or in a footnote to clarify what B1.1 and B1.3 are referenced from.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #995

Cl **58** *SC* **Table 58-10** *P* **230** *L* **21** # **155**

Radcliffe, Jerry Hatteras Networks

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

The high probability jitter entry for TP4 should be 2.44ns

SuggestedRemedy

Change entry to 2.44ns

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **Table 58-11** *P* **232** *L* **29** # **119**

Dawe, Piers Agilent

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

It would be a service to the reader to give a specific example destination address. I don't know what the criteria are.

SuggestedRemedy

May need help from logic experts and network test companies.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use DA in private address space rather than global one? Not sure of the implications.
Use 00000000. . .1 or all zeroes? What happens if SA and DA are the same? Maybe packet is thrown away. Could be what we want.
What about the multicast addresses reserved by 802.1 (which bridges are not allowed to forward)?
May need note saying MAC should be configured for full duplex - still don't know if it will count CRCs for alien addresses.
See what FDDI (jitter pattern, which was frame like), did. FDDI PMD spec doesn't give enough detail. See FDDI PMD A.6. See also FDDI SMT, may be a reserved address like function there.

Add note to say that doing these tests on part of a live network is a bad idea; especially with bridges, an address known to the bridge will reduce flooding. To the effect of 'Users advised to take care that the system under test is not connected to a network in service.'
Check wording against style guide.
Will change back to broadcast address (all 1s) for a fixed example.

Revise footnote: 'Use of the example broadcast address may cause problems in a system test; any unicast address is preferable. Other source and destination addresses may be chosen.'

Further suggestions are welcome.

Cl **58** *SC* **Table 58-4** *P* **224** *L* **53** # **994**

Thompson, Geoff Nortel

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

The average signal power* would normally be below the detection threshold but have a dynamic swing that puts its peak value above the detect threshold.
*(e.g. the min receive threshold - 1/2 the extinction ratio)

SuggestedRemedy

Change "input power" to "peak input power"
(Also several other places)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change to "Average input optical power". Apply to all three optics clauses.

Cl **58** *SC* **Table 58-5** *P* **226** *L* **15** # **1100**

Law, David 3Com

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

Suggest that for clarity the eye mask points should either have individual entries, or a separate table, rather than the list approach.

This comment also applies to Table 57-7.

SuggestedRemedy

Add new entries for each of the eye mask points or add a sperate table.

Proposed Response *Response Status* **C**

REJECT.
The list approach is clear, and is also used in the 10G optics clauses.

Cl **58** *SC* **Table 58-6** *P* **227** *L* **20** # **813**

Jönsson, Ulf Ericsson AB

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

Cross-ref to definition of reflectance not complete

SuggestedRemedy

Change cross-ref to 1.4

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58** *SC* **Table 58-8** *P* **229** *L* **13** # **814**

Jönsson, Ulf Ericsson AB

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

Cross-ref to definition of reflectance not complete

SuggestedRemedy

Change cross-ref to 1.4

Proposed Response *Response Status* **C**

ACCEPT.

Cl **58A** *SC* *P* **523** *L* **5** # **541**
James, David JGG

Comment Type **E** *Comment Status* **A**
Excessive capitalization.

SuggestedRemedy
Change:

Frame Based Testing
==>
Frame based testing

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

Cl **58A** *SC* **58A** *P* **523** *L* **50** # **658**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **A**
Duplicate bullet a). Likely need to change the style of the bullet.

SuggestedRemedy
Change 2nd bullet a) to c) on page 523, line 50.

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

Cl **58A** *SC* **58A** *P* **524** *L* **19** # **888**
Frazier, Howard SWI

Comment Type **E** *Comment Status* **A**
BERT is expanded incorrectly.

SuggestedRemedy
Expand BERT as Bit Error Ratio Testing.

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

Cl **59** *SC* *P* **252** *L* **1** # **483**
James, David JGG

Comment Type **E** *Comment Status* **A**
Excessive length subclause title, which would mandate manual table-of-contents updates to correct wrapping error, which is (in itself) prone to human errors.

SuggestedRemedy
1) Change:
Clause 58, Physical ...
==>
Clause 58
2) Use a nonbreaking space within:
Clause 585
^

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE. Following 802.3's practice. This has not been a problem in the past. If IEEE editor requests we will shorten. Cannot see a need for a nonbreaking space here.

Cl **59** *SC* *P* **257** *L* # **852**
Meir Bartur Optical Zonu

Comment Type **TR** *Comment Status* **R**
Does not include single wavelength option

SuggestedRemedy
Include single wavelength option

Proposed Response *Response Status* **U**
REJECT.

Adoption of a two-wavelength solution has been discussed in detail and approved on the basis that it is a cost-effective and robust solution that meets our Objectives. Accordingly, the baseline proposals were selected in May 2002 with overwhelming majority.

Cl **59** *SC* *P* **259** *L* **7** # **484**
James, David JGG

Comment Type **E** *Comment Status* **A**
Excessive length subclause title, which would mandate manual table-of-contents updates to correct wrapping error, which is (in itself) prone to human errors.

SuggestedRemedy
Make a shorter subclause title.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE. This has not proved to be a problem in the past. If the IEEE publication editor asks us to shorten the titles we will do so.

Cl **59** *SC* *P* **272** *L* **3** # **485**

James, David JGG

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

Wrong font size in table, probably due to use of wrong paragraph style.

SuggestedRemedy

Use a consistent table style for smaller-sized text, in:
Table 59-16
Table 59-17

Proposed Response *Response Status* **C**

ACCEPT.

Cl **59** *SC* *P* **278** *L* **3** # **486**

James, David JGG

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

Excessive capitalization.
Capitalize only the first word of a heading, and not even necessarily that.

SuggestedRemedy

Change:
Offset Patchcord ==> Offset patchcord
Jumper Cable ==> Jumper cable
Fiber Optic Cabling ==> Fiber optic cabling

Proposed Response *Response Status* **C**

ACCEPT.

Cl **59** *SC* *P* **279** *L* **16** # **487**

James, David JGG

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

The IEEE discourages the use of a dot for multiplication.

SuggestedRemedy

Change the "dot" to a mathematical x symbol.

Proposed Response *Response Status* **C**

REJECT.
This is the traditional method for specifying modal bandwidth.

Cl **59** *SC* *P* **281** *L* **1** # **488**

James, David JGG

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

Excessive length subclause title, which would mandate manual table-of-contents updates to correct wrapping error, which is (in itself) prone to human errors.

SuggestedRemedy

1) Delete Physical Medium ...
2) Put nonbreaking space within Clause 59.
^ nonbreaking

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Will use nonbreaking space. As to title length, will follow chief editor's guidance for all clauses.

Cl **59** *SC* **4.1 and 4.2** *P* **263** *L* **36** # **1207**

John George OFS

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

The latest posted EFM link model (EFM_PBud0_0_1.xls) is out of date and does not reflect the Draft 2.0 Tx and Rx characteristics and PMD designations.

SuggestedRemedy

Please update EFM_PBud0_0_1.xls to reflect Draft 2.0 Tx and Rx characteristics and PMD designations.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The model file will be updated but does not require a change to the proposed Standard

Cl **59** *SC* **59** *P* **257** *L* **1** # **1108**

Law, David 3Com

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

Subclause 56.1.3 calls the 1000BASE-LX10 PHY 'Extended Long Wavelength Laser', the exisitng Clause 38 calls 1000BASE-LX PHY 'Long Wavelength Laser' yet this Clause title calls the 1000BASE-LX10 PHY simply 'Long Wavelength'. Suggest that to be consitent with 56.1.3 and Clause 38 the 1000BASE-LX10 PHY be called 'Extended Long Wavelength Laser'.

SuggestedRemedy

Suggest the text 'type 1000BASE-LX10 (Long Wavelength) and 1000BASE-BX10 (BiDirectional Long Wavelength)' should read 'type 1000BASE-LX10 (Extended Long Wavelength Laser) and 1000BASE-BX10 (BiDirectional Long Wavelength Laser)'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Precedent of 802.3ae is that 'extended' goes with the 'E' in ER/EW, signifying 1550 nm band which this is not. See comment 101.

Cl **59** *SC* **59.1** *P* **258** *L* **4** # **1109**

Law, David 3Com

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

The introductory text doesn't seem to state what is specified in this Clause but does state that the PMD provides a '1000BASE-X connection' which I'm not too sure is correct, the PMD is only part of a 1000BASE-X connection, a PCS would be required as well.

In additon the physical layer includes the PHY as well as the RS - see figure 56-1.

SuggestedRemedy

Based on similar text found elsewhere (for example IEEE Std 802.3ae-2002 Clause 53 and IEEE Std 802.3-2002 Clause 38) suggest that the first two paragraphs be replaced with the text:

'This clause specifies the 1000BASE-LX10 and 1000BASE-BX10 PMDs (including MDI). This clause also specifies the 1000BASE-LX10 PMD baseband medium for multimode and single-mode fiber and the 1000BASE-BX10 baseband medium for single-mode fiber. In order to form a complete PHY, the PMD shall be integrated with the with the 1000BASE-X PCS and PMA of Clause 36, and optionally the management functions defined in Clause 22 and 45, which are hereby incorporated by reference.'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. See comment 1096, 986 and another. Be consistent across clauses.

Cl **59** *SC* **59.1.1** *P* **258** *L* **44** # **842**

Brand, Richard Nortel Networks

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

"Implementation may be declared .... or not so declared (compliant....). This is unclear as to the required action and will encourage deception. Does this mean that implementations will be declared not compliant, or to not state which temp range is covered?
The extended Temp range optics objective is not satisfied by this text including the Annex.

SuggestedRemedy

Add clarifying text to clearly state the action.
Make extended temp range normative.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change reference on line 44 in 59.1 from see Annex 66A *ref*" to "see 59.10.4". Similarly in other two clauses, 58 and 60.

Cl **59** *SC* **59.1.1** *P* **258** *L* **50** # **158**

Radcliffe, Jerry Hatteras Networks

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

The Goals and Objectives paragraph should be removed

SuggestedRemedy

Remove paragraph 59.1.1

Proposed Response *Response Status* **C**

REJECT. Decided to keep them (all three clauses).

Cl **59** *SC* **59.1.5** *P* **260** *L* **23** # **112**

Dawe, Piers Agilent

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

Looking ahead to 802.3's future electronic dispersion compensation project: Electronic dispersion compensation would add noticeable delay into the PMD sublayer. As it could conceivably be applied to Gigabit Ethernet, and as a few more ns of delay is equivalent to a very few more metres of fibre (i.e. not significant for most networks), we should look ahead and specify the delay limit we need in the long term. This way, any higher level layers which use this limit will not have to be re-worked for future PMDs.

This comment is copied against 59 and 60.

SuggestedRemedy

Change 12 to 20 ns. Apply to clauses 59 and 60. Could apply to 58 for consistency.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Make the change (clauses 59 and 60), review at next meeting.

Cl **59** *SC* **59.11.4** *P* **279** *L* **25** # **912**

Frazier, Howard SWI

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

IS?

SuggestedRemedy

Change "IS 11801" to "ISO/IEC 11801".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **59** *SC* **59.11.5** *P* **279** *L* **47** # **133**

Dawe, Piers Agilent

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

This sentence works for SC connectors only, need to generalise it for other smaller types. Also need to make the reference normative following the "shall".
"All patch cord connecting ferrules containing the single-mode-to-multimode offset launch shall have single-mode tolerances (IEC 61754-4 [B25]grade 1 ferrule).

SuggestedRemedy

"... shall have single-mode tolerances (IEC 61754-4 grade 1 ferrule in the case of SC connectors)."
Remove the [B25].

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change reference to IEC 61754-1. Add reference to normative list.

Cl **59** *SC* **59.12.3.2** *P* **283** *L* **28** # **123**

Dawe, Piers Agilent

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

Status of mode-conditioning patch cord can't be LX:M as it is used for MMF only

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Change status of LX2 from LX:M to OFP:M.

Cl **59** *SC* **59.12.3.2** *P* **283** *L* **30** # **124**

Dawe, Piers Agilent

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

Note this comment applies to 58, 59 and 60. I didn't want to clutter the database with 9 or 10 clones.

PICS: want entry for stressed sensitivity following 59.9.14 "If the option for stressed receiver compliance is chosen".
For 1000BASE-BX10 and if we don't make stressed sensitivity mandatory or conditionally mandatory for 1000BASE-LX10,

SuggestedRemedy

Example table entries:
LX3 1000BASE-LX10 receiver 59.4.2 Receiver meets mandatory specifications in Table 59–7 LX:M Yes [ ] N/A [ ]
LX4 1000BASE-LX10 receiver 59.4.2 Receiver meets stressed sensitivity specification LX:O Yes [ ] No [ ] N/A [ ]

And similarly for other PMDs.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Follow resolution for stressed sensitivity, comment 110.

Example table entries:
LX3 1000BASE-LX10 receiver 59.4.2 Receiver meets mandatory specifications in Table 59-7 LX:M Yes [ ] N/A [ ]

BXD2 1000BASE-BX10 receiver ... Receiver meets mandatory specifications in Table 59-7 BXD:M Yes [ ] N/A [ ]
BXD3 1000BASE-BX10 receiver ... Receiver meets stressed sensitivity specification BXD:O Yes [ ] No [ ] N/A [ ]

And similarly for other PMDs.

Cl **59** *SC* **59.12.3.5** *P* **284** *L* **14** # **126**

Dawe, Piers Agilent

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

RIN spec and testing is a "should", as TDP covers it.

SuggestedRemedy

Delete OM6.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **59** *SC* **59.4** *P* **263** *L* **53** # **110**

Dawe, Piers — Agilent

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

I have looked again at the use of stressed sensitivity in standards. Basically, ITU-T and 10G Ethernet use only stressed sensitivity, Fibre Channel uses stressed where MMF is involved and unstressed where SMF is involved, 1000BASE-LX uses both. If we were to proceed without a stressed sensitivity requirement for a MMF physical layer, we would be unusual, maybe in the wrong. Reluctantly, I think we should make stressed sensitivity mandatory for 1000BASE-LX10, or at least if to be used with MMF.

I have made this a TR because it may take more than one ballot cycle to get the technical input we need.

SuggestedRemedy

Options:
1. No change.
2. Create option for MMF compatibility within 1000BASE-LX10 with mandatory stressed sensitivity.
3. Make stressed sensitivity mandatory for 1000BASE-LX10.
4. Make stressed sensitivity mandatory for 1000BASE-anything.
5. Make stressed sensitivity mandatory for all EFM optical PMDs.

At present I am leaning towards option 3 if we can assure ourselves that the stressed requirement is not a significant cost burden; if it is, then option 2.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Believe that there is not a major market requirement for separate MMF and SMF versions of 100BASE-LX10. Make stressed sensitivity mandatory for 1000BASE-LX10 for both MMF and SMF use. See other comments for stressed sensitivity spec limit.

Cl **59** *SC* **59.4** *P* **264** *L* **39** # **87**

Dawe, Piers — Agilent

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

A recent trend in fiber optic transceivers is the "2/1/1" transceiver which implements 1 and 2 Gigabit Fibre Channel with Gigabit Ethernet. It would be beneficial (economies of scale) for 1000BASE-LX10 to be very compatible with Fibre Channel. The power budgets are similar but the 1000BASE-LX10 minimum powers are presently a little lower than Fibre Channel (and 1000BASE-LX receiver). This can be remedied while still maintaining a cost-effective transmit power window and complete interoperability between 1000BASE-LX10 and 1000BASE-LX.
Also, the stressed sensitivity for 1000BASE-LX10 (17 uW OMA) is much more demanding than for 1000BASE-LX (56 uW OMA) - this may be partly a separate problem (with separate comment).
I have made this a TR because it may take a while to choose the best limits.

SuggestedRemedy

Raise these limits by 0.5 or 1.0 dB:
Tx minimum power on SMF from -9.5 to -9 or -8.5, Tx OMA, Rx unstressed "mean" sensitivity from -20 to -19.5 or -19, unstressed OMA. Review stressed sensitivity mean and OMA, raise as appropriate. Leave the Tx maximum at -3 dBm (common to all four PMD types). The link penalties and so on are unchanged by this.

It might also be possible to raise the sensitivities by 1 dB and the transmit powers by 0.5 dB, taking 0.5 dB out of the margin.

Proposed Response *Response Status* **C**

ACCEPT.
Choose to make a conservative change now and review. Raise Tx min on Tx minimum power on SMF from -9.5 to -9, and Rx "mean" sensitivity from -20 to -19.5 dBm. Revise associated parameters (stressed sensitivity and three OMAs) to match. Exact values and treatment of margin can be reviewed at next meeting.

Cl **59** *SC* **59.7** *P* **268** *L* **15** # **154**

Alan Flatman — LAN Technologies

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

BER (min) requirement is incorrect. BER (max) is already specified.

SuggestedRemedy

delete BER (min) requirement.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **59** *SC* **59.9.1** *P* **270** *L* **10** # **1110**
Law, David 3Com

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

The text states that these test patterns are only 'recommended' yet they appear in the PICS with a 'M' (Mandatory) status. Please clarify.

SuggestedRemedy

If these patterns are to be mandatory as the PICS implies please add a shall statement as appropriate.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Delete the word "recommended" in line 9 and modify OM2 so that it refers to Table 59-13. 59.9 says the patterns are definitive.

Cl **59** *SC* **59.9.1** *P* **270** *L* **32** # **1111**
Law, David 3Com

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

Frames do not include preamble and SFD, packets do (see IEEE Std 802.3-2002). Based on the test pattern definitions they seem to included preamble and SFD.

SuggestedRemedy

Suggest the text 'They are compliant Ethernet frames with ...' should read 'They are compliant Ethernet packets with ...'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **59** *SC* **59.9.11** *P* **274** *L* **24** # **1202**
Law, David 3Com

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

Suggest a cross reference should be added for where the 'random pattern test frame' is defined.

SuggestedRemedy

Suggest the text '... the random pattern test frame and ...' should read '... the random pattern test frame (see 59.9.1) and ...'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Add reference to 59.9.1

Cl **59** *SC* **59.9.15** *P* **275** *L* **34** # **132**
Dawe, Piers Agilent

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

Language: "shall be measured" is not what we mean. We mean shall comply.

SuggestedRemedy

Change first sentence to:
The receiver 3 dB electrical upper cutoff frequency shall meet specifications according to the methods specified below.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **59** *SC* **59.9.15** *P* **276** *L* **12** # **137**
Dawe, Piers Agilent

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

BX

SuggestedRemedy

BX10

Proposed Response *Response Status* **C**

ACCEPT.

Cl **59** *SC* **59.9.3** *P* **272** *L* **37** # **131**
Dawe, Piers Agilent

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

Language: "shall be measured" is not what we mean. We mean shall comply. Editorial: not sure what a "node" is. Editorial: delete "[B7]".

SuggestedRemedy

Change to:
Optical power shall meet specifications according to the methods specified in ANSI/EIA-455-95. A measurement may be made with the port transmitting ..."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **59** *SC* **59.9.4** *P* **272** *L* **42** # **1112**

Law, David 3Com

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

Isn't the ANSI/TIA/EIA-526-4A a mandatory test method - it seems to be included in the PICS with a 'M' status.

SuggestedRemedy

Suggest the text 'Extinction ratio is defined according to methods specified in ANSI/TIA/EIA-526-4A ...' should read 'Extinction ratio shall be measured according to methods specified in ANSI/TIA/EIA-526-4A ...'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Change text to read "Extinction ratio shall meet specifications according to methods specified in ANSI/TIA/EIA-526-4A and delete "measurements" in OM3, OM4, OM5, OM9, and OM10.

Cl **59** *SC* **59.9.4** *P* **272** *L* **43** # **1113**

Law, David 3Com

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

Suggest that 'I2' should read '/I2/ ordered_set (see 36.2.4.12)'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Also, change 'This is defined' to 'The /I2/ ordered_set is defined'. Replace 'or 110000 0101 011011 0101' to 'within idles'.

Cl **59** *SC* **59.9.4** *P* **272** *L* **45** # **1114**

Law, David 3Com

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

Suggest that the Idle pattern cannot contain frames but instead it is intersperesed with OAM packets.

SuggestedRemedy

Suggest the text 'The idle pattern may contain a low proportion of OAM frames.' should read 'The idle pattern may be intersperesed with a low rate of OAM packets.'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. 'The idle pattern may be interspersed with a low rate of OAM packets.'

Cl **59** *SC* **59.9.6** *P* **273** *L* **1** # **1117**

Law, David 3Com

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

It's not normal to state if a subclause is informative of normative. To make text mandatory it would contain shall statements, from what I can see it does not.

SuggestedRemedy

Remove the text 'informative' from the subclause title.

Proposed Response *Response Status* **C**

REJECT. Several subclauses are designated "(informative).

Cl **59** *SC* **59.9.8** *P* **273** *L* **17** # **1116**

Law, David 3Com

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

This subclause references the test pattern defined in subclause 58.8.8 yet subclause 58.8.8 references a test pattern defined in subclause 58.8.1 which is a 4B5B test pattern - therefore is the reference to 58.8.8 is this case correct.

SuggestedRemedy

Verify if the reference to 58.8.8 is correct.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "Measurements shall be performed using the test pattern defined in 58.8.1." to "specified for the PMD e.g. 58.8.1 or 59.9.1."
Change "as shown in Figure 58-6" to "as shown in Figure 58-6 for 100BASE-LX10 and 100BASE-BX10."
Change "Measurements shall be performed" per other comments.

Cl **59** *SC* **59.9.8** *P* **273** *L* **19** # **1118**

Law, David 3Com

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

Typo.

SuggestedRemedy

The text 'fr' should be in italics.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **59** *SC* **Figure 59-1** *P* **259** *L* **18** # **1001**

Thompson, Geoff — Nortel

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

Obsolete style of diagram refers to "LLC - LOGICAL LINK CONTROL" as the exclusive MAC CLIENT for 802.3

SuggestedRemedy

Redit to conform to current style (refer to 1000BASE-T diagram)
"LLC - LOGICAL LINK CONTROL" should be "LLC - LOGICAL LINK CONTROL OR ORHER MAC CLIENT"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **59** *SC* **Figure 59-8** *P* **280** *L* **25** # **911**

Frazier, Howard — SWI

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

I can't believe that I drew this diagram 6 years ago, and it is still kicking around in a new standard.

SuggestedRemedy

Let's ban mode conditioning patch cords and multi-mode fibre from EFM. We don't need them. Delete all references to multi-mode fibre and mode conditioning patch cords.

Alternatively, replace the contents of 59.11.5 with the following:

See 38.11.4.

Go ahead, eight ball me.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. 59.11.5 is not identical to 38.11.4 so we can't delete it. In addition, 1000BASE- LX10 is intended to be a superset of 1000BASE-LX which includes MMF.
Change 59.11.5 p280 line 13 'Table 59-8' to 'Figure 59-8'.

Cl **59** *SC* **Table 59-1** *P* **258** *L* **21** # **1000**

Thompson, Geoff — Nortel

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

The text:
"Fiber type B1.1, B1.3 SMF" is meaningless without a proper reference. I assume that there should be a reference somewhere near here to an actual IEC spec

SuggestedRemedy

Provide IEC reference

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Add footnote to fiber type in table 59-1 noting reference to IEC 60793-2. Apply to all clauses.

Cl **59** *SC* **Table 59-13** *P* **270** *L* **14** # **1203**

Law, David — 3Com

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

Suggest that an additional column be added to this table that lists for each pattern the subclause or Tables that provide the patter specification. For example 'Random Pattern Test Frame' will list Table 59-14 and 59-15.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **59** *SC* **Table 59-16** *P* **272** *L* **5** # **1115**

Radcliffe, Jerry — 3Com

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

Footnote a to Table 59-14 states that 'The running disparity exiting the first portion of the MAC client data shall be positive.' On examination of the 7E 7E encoding provided in the first line of Table 59-16 the encoding 011110 0011 appears which I understand from table 36-1c should only be sent when the current running disparity is negative.

SuggestedRemedy

Please correct the 8B10B encoding provided in the first row of Table 59-19 if necessary.

Please also check lines 4 and 5 of this table as there seems to be a similar discrepancy there.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Will check and correct as appropriate. The commenter is encouraged to suggest specific corrections.

Cl **59** *SC* **Table 59-18** *P* **279** *L* **25** # **94**

Dawe, Piers — Agilent

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

"IS 11801" doesn't make sense outside of IEC. They aren't the only international standards body.

SuggestedRemedy

ISO/IEC 11801

Proposed Response *Response Status* **C**

ACCEPT. See comment 912.

Cl **59** *SC* **Table 59-5** *P* **265** *L* **14** # **1101**

Law, David 3Com

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

Suggest that for clarity the eye mask points should either have individual entries, or a separate table, rather than the list approach.

This comment also applies to Table 59-8.

SuggestedRemedy

Add new entries for each of the eye mask points or add a sperate table.

Proposed Response *Response Status* **C**

REJECT. Present notation has precedent and is compact.

Cl **59** *SC* **Table 59-5** *P* **265** *L* **21** # **1240**

Ewen, John JDS Uniphase

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

The 300ps differential delay specified for the TDP measurement does not seem to be correct. A simple extrapolation of 500MHz-km over 550m would yield a 3dB bandwidth of 900MHz. The 2-tap transversal filter with a 300ps delay gives a 3dB bandwidth of 1.1GHz, suggesting the specified delay is too small. In addition, the transversal filter methodology was developed for 802.3ae to accommodate MMF at 850nm, and it's not clear that this methodology is appropriate for 1310nm with a mode conditioned launch.

SuggestedRemedy

Replace the transversal filter with a Bessel-Thomson filter of the appropriate bandwidth. If measurements or analysis show that the transversal filter methodology is required for 1310nm over MMF with a mode conditioned launch, then adjust the differential delay value to be consistent with the worst case bandwidth.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change the delay to 367 ps. Fibre responses at 1300 nm might have nulls so a transversal filter seems an acceptable choice, and also is believed to be realisable in hardware. Would need more technical review before changing the filter type.
Per 802.3ae, delay is calculated as Td=L/(3.BWf). Fibre bandwidth is defined to -3dB(optical).
Add a note pointing out that 1000BASE-LX10 is rated for 550m of 500 MHz.km fibre, while 1000BASE-LX also covered 550m of 400 MHz.km, but this is now seen as an historical bandwidth requirement.

Cl **59** *SC* **Table 59-7** *P* **264** *L* **39** # **111**

Dawe, Piers Agilent

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

The stressed sensitivity is 1.6 dB higher than the unstressed sensitivity while the vertical eye-closure penalty is 3.6 dB. This doesn't seem consistent (there are other factors involved but they are smaller than 3.6 dB). Another way of looking at the stressed sensitivity is that it should be appropriate for MMF use and calculated according to MMF loss.

SuggestedRemedy

Review stressed sensitivity mean and OMA and raise as appropriate.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Review all stressed sensitivities (all PMDs) with link model. If suitable values not available, change to unstressed sensitivity + VECP + 0.1 dB e.g. Table 59-7 would be -20 +3.6 +0.1 = -16.3 dBm.

[Note to editor: complete this list for other PMDs].

Review all stressed sensitivities (all PMDs) through email, phone conferences as necessary. Ratify revised numbers at next meeting.

Cl **60** *SC* *P* **287** *L* **1** # **489**

James, David JGG

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

Excessive length clause title, which would mandate manual table-of-contents updates to correct wrapping error, which is (in itself) prone to human errors.

SuggestedRemedy

Make a shorter clause title.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Will use nonbreaking space. As to title length, will follow chief editor's guidance for all clauses.

Cl **60** *SC* *P* **287** *L* **1** # **490**

James, David JGG

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

Excessive capitalization.

SuggestedRemedy

60. Physical Medium Dependent (PMD) sublayer ...
==>
60. Physical medium eependent (PMD) sublayer ...

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The current text style is consistent with Subclause 1.4 Definitions. The optics STF will rely on guidance from the editor-in-chief on this issue.

Cl **60** *SC* *P* **288** *L* **Table 60-1** # **853**

Meir Bartur Optical Zonu

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

Min Ch. Loss 5dB is too low (1x4 splitter is 7dB - and that is the min in IYU which is also too high IMHO)

SuggestedRemedy

Change to 10 dB

Proposed Response *Response Status* **U**

REJECT. This has been stable since at least D1.1. Committee should see technical arguments before making any change. Is the issue about APD? (pin?) overload vs. tolerancing the loss of the optical plant? Would need to change either Tx max or Rx max in step.

What would the MINIMUM loss of a 1x4 splitter be? Could it be as low as 5 dB if splitting were not even?

Should we follow ITU-T's 7 dB? Why? Attenuation range of ITU-T G.982 is 15 dB.

To make a change we would need a technical presentation discussing costs of overload against costs of measuring and tolerancing path losses and stocking finer quanta of attenuators in network construction. It may be that Ethernet puts more emphasis on simple installation ("plug and play").

Cl **60** *SC* *P* **290** *L* **49** # **491**

James, David JGG

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

Wrong font size in "A signal for laser..."

SuggestedRemedy

Reapply the correct character font style.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **60** *SC* *P* **293** *L* **19** # **854**

Meir Bartur Optical Zonu

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

"PMD receiver is not required to verify whether a compliant 1000BASE-PX signal is being received."
Table 60-4 "AND compliant 1000BASE-X signal input at the specified receiver wavelength" not a clear delineation

SuggestedRemedy

Remove "AND compliant 1000BASE-X signal input at the specified receiver wavelength" from table 60-4

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Receiver cannot be expected to guarantee correct signal detect operation with unexpected signal formats. The ANDed part is to protect the PMD from inappropriate testing. We could consider changing '1000BASE-X' to '1000BASE-PX' but it wouldn't make any difference.
Change "AND" to "with a".
Commenter is requested to clarify the issue if this response does not address it.

Cl **60** *SC* *P* **293** *L* **35** # **492**

James, David JGG

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

Inconsistent capitalization:
Signal Detect
SIGNAL_DETECT

SuggestedRemedy

Pick one name and use it througout.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Usage is:
All capitals: parameter in service primitive.
Lower case: function.
Mixed case with underscore: signal name.
See comment 472.

Change Signal detect in table 60-4 to 'SIGNAL_DETECT'. Change p293 line 13 and line 24 to lower case 'signal detect' function. Check other two clauses and make equivalent changes if appropriate.

Cl **60** *SC* *P* **302** *L* **49** # **493**

James, David JGG

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

Spaces in variable names cause confusion.

SuggestedRemedy

Change all variable names to be runTogetherWords.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
This reviewer is not confused by the spaces, and prefers the readability. These variables are not state variables used in a state machine.

Insert subscript 10 after log. Put UI in brackets (twice).

Cl **60** *SC* *P* **307** *L* **2** # **494**

James, David JGG

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

Excessively dark lines.

SuggestedRemedy

Use the normal line-width conventions.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Not aware of specific conventions. Will follow chief editor's guidance.

Cl **60** *SC* *P* **307** *L* **39** # **495**

James, David JGG

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

What is the meaning of "The Standard"

SuggestedRemedy

1) Provide a cross-reference to where Toff maximum value is specified.
2) Eliminat the "should" in the second second, which is implied by the maximum value specification already.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The necessary information is already given in 60.8.13.1. Delete the two-sentence paragraph beginning "The standard", three occurrences, and any similar in 60. In 60.8.13.2.1 around line 35, add references to table 60-7 and twin.

Cl **60** *SC* *P* **310** *L* **37** # **496**

James, David JGG

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

Wrong font size in table, probably due to use of wrong paragraph style.

SuggestedRemedy

Use a consistent table style for smaller-sized text, in:
Table 60-15

Proposed Response *Response Status* **C**

ACCEPT.

Cl **60** *SC* *P* **313** *L* **1** # **497**

James, David JGG

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

Excessive length subclause title, which would mandate manual table-of-contents updates to correct wrapping error, which is (in itself) prone to human errors.

SuggestedRemedy

1) Delete Physical Medium ...
2) Put nonbreaking space within Clause 60.
^ nonbreaking

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Will use nonbreaking space. As to length, will follow common policy on title lengths.

Cl **60** *SC* *P* **315** *L* **21** # **498**

James, David JGG

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

Bad line break.

SuggestedRemedy

1) Replace Table 60-4 with a nonbreaking space.
^ nonbreaking space
2) Do a search for all instances, replacing with nonbreaking space, throughout the draft.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. If the space falls within a reference, it would come from the Frame template and the problem may not be correctable. Will see if a suitable solution is available.

Cl **60** *SC* **60** *P* **288** *L* **42** # **136**

Dawe, Piers Agilent

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

Please make tables 1, 4, 5, 6, 8, 9, 10, 11 and 16 full width using the "shrink to fit" feature.

SuggestedRemedy

The document will look better for it and be may be slightly more compact.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **60** *SC* **60.1** *P* **289** *L* # **195**

Yukihiro, Fujimoto NTT

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

Using "OLT" as an equipment with "ONU:Optical Network Unit", OLT should be "Optical Line Terminal".

SuggestedRemedy

Optical Line Termination -> Optical Line Terminal

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
ITU-T G.983.1 has OLT = Optical Line Termination but LT = Line Terminal. Review case by case, all three clauses, and change per context if appropriate.

Cl **60** *SC* **60.1.2** *P* **289** *L* **19** # **910**

Frazier, Howard SWI

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

Inconsistent abbreviation of Multi-Point Control Protocol.
Clause 64 uses MPCP, while Clause 60 uses MPMC.

SuggestedRemedy

Use MPCP.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. This is consistent with Fig. 56-2 and Fig. 64-1. Clause 64 uses both MPMC and MPCP.

Cl **60** *SC* **60.1.2** *P* **289** *L* **8** # **1003**

Thompson, Geoff Nortel

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

P2MP has violated layering and good standards description practice by specifying the MAC function in 2 separate layers with a significant portion of the function being specified in the PHY.
The 2 layers need to communicate with each other where there is no path for doing so. The difference between this somewhat bizarre method of specification that is contorted to try to fit into the existing Ethernet spec will be an ongoing problem because it does not match normal system partitioning. There will be a natural desire during implementation to put MAC functions in a MAC and PHY functions in the PHY. The fact that the actual design spec must be interpreted fro its current rather strange form is an invitation to interoperability/compatibility problems.

SuggestedRemedy

Create a separate standard within 802.3 for EPON that frees EPON from the backward compatibility constaints of legacy Ethernet and allows for the standard to be structured and written appropriately. Rewrite so that the media access control actually takes place in an entirely new (non-CSMA/CD) TDMA MAC.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Referred to P2MP group. See response to comment number 1119.

The commenter does not here propose a change to the Clause 60-specific material, but to other clauses and to a diagram which is kept consistent with Figure 65-1.

Cl **60** *SC* **60.1.2** *P* **289** *L* **8** # **1002**

Thompson, Geoff — Nortel

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

P2MP violates 802.3 layering as the laser control takes place in the new "MULTI-POINT MAC CONTROL" sublayer above the MAC in the ONU, the actual switching function takes place in the PHY. There is no provision in the existing 802.3 MAC or the GMII to pass this signal between those sublayers.

SuggestedRemedy

Create a separate standard within 802.3 for EPON that frees EPON from the backward compatibility constaints of legacy Ethernet and allows for the standard to be structured and written appropriately. Rewrite so that the media access control actually takes place in an entirely new (non-CSMA/CD) TDMA MAC.
A new non CSMA/CD GMI-like interface could then be freely specified with no impact on the existing 802.3 Standard.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Referred to P2MP group. See response to comment number 1119.

Cl **60** *SC* **60.1.5** *P* **290** *L* **24** # **113**

Dawe, Piers — Agilent

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

Looking ahead to 802.3's future electronic dispersion compensation project: electronic dispersion compensation would add extra delay into the PMD sublayer. As it could conceivably be applied to Gigabit Ethernet, and as a few more ns of delay is equivalent to a very few more metres of fibre (i.e. not significant for most networks), we should look ahead and specify the delay limit we need in the long term. This way, any higher level layers which use this limit will not have to be re-worked for future PMDs.

This comment is copied against 59 and 60.

SuggestedRemedy

Change 12 to 20 ns. Apply to clauses 59 and 60. Could apply to 58 for consistency.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. See comment 113.

Cl **60** *SC* **Figure 60-1** *P* **289** *L* **15** # **1004**

Thompson, Geoff — Nortel

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

Obsolete style of diagram refers to "LLC - LOGICAL LINK CONTROL" as the exclusive MAC CLIENT for 802.3

SuggestedRemedy

Redit to conform to current style (refer to 1000BASE-T diagram)
"LLC - LOGICAL LINK CONTROL" should be "LLC - LOGICAL LINK CONTROL OR OTHER MAC CLIENT"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **60** *SC* **Table 60-5** *P* **294** *L* **38** # **855**

Meir Bartur — Optical Zonu

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

Average launch power (min) -1dBm for the ONU is too high. FSAN is -2dBm

SuggestedRemedy

Change to -2dBm

Proposed Response *Response Status* **U**

REJECT.

This has been -1 since D1.414, and a lower transmit power would mean a more demanding sensitivity. Committee should see technical arguments, bearing receiver sensitivity in mind, before making any change.

Cl **60** *SC* **Table 60-5** *P* **294** *L* **39** # **856**

Meir Bartur — Optical Zonu

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

Average launch power of OFF transmitter (max) for the OLT -39 dBm is astrange requirement - not neccesary

SuggestedRemedy

Remove

Proposed Response *Response Status* **U**

REJECT.
This item is included for consistency with other continuously operating optical transmitters within 802.3. It stops the receiver seeing an unintended signal from an "off" OLT and does not seem hard to meet for a continuous-type transmitter.

Cl **60** *SC* **Table 60-5** *P* **294** *L* **41** # **857**
Meir Bartur Optical Zonu

Comment Type **TR** *Comment Status* **R**
Extinction ratio (min) 6dB (4/1) is too low

SuggestedRemedy
Change to 10 like ITU

Proposed Response *Response Status* **U**
REJECT.

This has been stable since D1.1, and was chosen to be cost effective for direct modulation. Committee should see technical arguments before making any change.

If SONET used 8.2 a long time ago, 10 would be out of line.

Cl **60** *SC* **Table 60-5** *P* **295** *L* **12,13** # **858**
Meir Bartur Optical Zonu

Comment Type **TR** *Comment Status* **R**
Ton Toff 512nSec each IS TOO MUCH

SuggestedRemedy
Change to 50nSec

Proposed Response *Response Status* **U**
REJECT.

This item was been debated at length and has been fairly stable since D1.3 (600 ns), and was chosen to allow cost effective designs. Committee should see technical arguments before making any change.

Cl **61** *SC* *P* **321** *L* **17** # **499**
James, David JGG

Comment Type **E** *Comment Status* **A**
Inconsistent centering of fields.

SuggestedRemedy
1) Center LLC, OAM, MAC CONTROL, and MAC-- fields within boxes.
2) Work to make all layer diagrams with consistent notation.

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

Cl **61** *SC* *P* **329** *L* **1** # **500**
James, David JGG

Comment Type **E** *Comment Status* **A**
Excessive capitalization.

SuggestedRemedy
Change:
61.2 PCS Functional Specifications
==>
61.2 PCS functional specifications

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

Cl **61** *SC* *P* **335** *L* **18** # **501**
James, David JGG

Comment Type **E** *Comment Status* **A**
Inconsistent naming of states.

SuggestedRemedy
Change:
WAIT FOR NEXT FRAGMENT
==>
WAIT_FOR_NEXT_FRAGMENT

Both here and throughout this document.

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

Cl **61** *SC* *P* **336** *L* **47** # **502**
James, David JGG

Comment Type **T** *Comment Status* **A**
Inconsistent naming of 8-bit data:
octet elsewhere
byte here

SuggestedRemedy
1) Be consistent.
2) My preference is to change all instances:
octet ==> byte

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Editor shall consistently use octet where appropriate.

Cl **61** *SC* *P* **337** *L* **19** # **503**

James, David JGG

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

Indentation needed to delineate the occur:
Items that are described.

SuggestedRemedy

1) Change these to enumerated lists.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* *P* **341** *L* **19** # **504**

James, David JGG

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

Greek letters should not be included in titles, subclause, figure, or tables. The text in the TOC, LOF, or LOT will be incorrect and fixes will be error prone.

SuggestedRemedy

Change symbols, perhaps to:
gamma, alpha, beta.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
The "alpha(beta)"-interface and "gamma"-interface are well-known fundamental concepts in the xDSL world. We've deliberately chosen to keep these concepts and their original notation in our draft to make the relation with existing xDSL standards clear to the reader. The IEEE Editorial Staff will be asked to advise as to the proper course of action.

The commenter is unsatisified with this resonse, but responded that the following remedy would be acceptable to him:

"The WG editors will work with the IEEE Editorial Staff and the commenter to determine how these characters can be formatted so that they will be automatically incorporated into the TOC without manual intervention."

Cl **61** *SC* *P* **343** *L* **28** # **505**

James, David JGG

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

Footnotes belong on text, not titles.

SuggestedRemedy

Move the footnote to the first line of text.

Proposed Response *Response Status* **C**

REJECT.
The place of the footnote was deliberately chosen to warn the reader that the entire subclause 61.2.3.2.3 is about xDSL-style OAM, not EFM-style OAM.

Cl **61** *SC* *P* **345** *L* **1** # **293**

Tom Mathey Independent

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

Scrambler serves no purpose. It was placed into the draft on the mistaken assumption that a local device could receive MAC data frames when the local device receive path is not sync'd. Such a situation is illegal.

SuggestedRemedy

Remove scrambler, descrambler, and all associated text.

Proposed Response *Response Status* **C**

ACCEPT.
Comments #293(T), #267(T), #820(TR), #1210(TR), #1182(TR) and #1183(TR) suggest removing the scrambler.
Comments #864(TR), #799(T), #800(T) and #1237(T) address issues related to the scrambler.

Proposed action:
- Accept comment #1237
- Remove scrambler/descrambler
- Resolution of comments #293, #267, #820, #1210, #1182, #1183, #864, #799 and #800 immediately follows

Cl **61** *SC* *P* **347** *L* **4** # **506**

James, David JGG

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

Use IEEE styles on lists.

SuggestedRemedy

Change:
implemented: ==> implemented.
an incorrect ... is expected; ==> An incorrect ... is expected.
the received ... ==> The received ...

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* *P* **348** *L* **49** # **507**

James, David JGG

Comment Type **T** *Comment Status* **A**

Inconsistent notation

SuggestedRemedy

Change:
x(n-1) ==> xn-1
^^^ superscript

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* *P* **353** *L* **23** # **508**

James, David JGG

Comment Type **T** *Comment Status* **A**

The meaning of "Stet" is unclear.

SuggestedRemedy

Make this abbreviation clear.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See resolution of comments #1213, #1214 and #1215.
Replace all instances of "Stet" with "Referenced as is." Additionally, the Editor has license to modify granularity of section references.

Cl **61** *SC* *P* **356** *L* **24** # **510**

James, David JGG

Comment Type **T** *Comment Status* **R**

The 'x' notation for don't care clouds the picture and is very informal.

SuggestedRemedy

1) Use an em dash when an entry is not specified or ignored.
2) Define this up front is terms and definitions, or there-around.

Proposed Response *Response Status* **C**

REJECT.
The style is copied from ITU-T Recommendation G.994.1, which is a normative reference for this Clause. The notation is explained in subclause 9.2 of ITU-T Recommendation G.994.1. An 'x' in bit 8 of an NPar(1) or SPar(1) field, or in bits 8 and 7 of an NPar(2), SPar(2) or NPar(3) field indicates a delimiting bit, not a "don't care".

Cl **61** *SC* *P* **356** *L* **24** # **509**

James, David JGG

Comment Type **T** *Comment Status* **R**

The high "tick" over bit 8 is distracting and unnecessary.

SuggestedRemedy

Make this and other tick marke to the right of 8 or 7, within:
Table 61-15 through 61-119.

Proposed Response *Response Status* **C**

REJECT.
The style is copied from ITU-T Recommendation G.994.1, which is a normative reference for this Clause. The notation is explained in subclause 9.2 of ITU-T Recommendation G.994.1. An 'x' in bit 8 of an NPar(1) or SPar(1) field, or in bits 8 and 7 of an NPar(2), SPar(2) or NPar(3) field indicates a delimiting bit, not a "don't care". The high "tick" separates the delimiting bits from the parameter bits.

Cl **61** *SC* *P* **395** *L* **15** # **511**

James, David JGG

Comment Type **T** *Comment Status* **A**

Excess capitalization.

SuggestedRemedy

Change:
Bytes ==> bytes

here and throughout.

Proposed Response *Response Status* **C**

ACCEPT.
Note: some occurrences may be replaced by "octet"

Cl **61** *SC* **61** *P* *L* # **63001**

Copper OAM Joint Sub Task Force

Comment Type **T** *Comment Status* **A**

Comment generated from comment #256:
p106 line 10: provide actual clause 61 signal name
p106 line 15: provide actual clause 61 signal name
p106 line 22: provide actual clause 61 signal name
p106 line 28: provide actual clause 61 signal name, correct bad cross reference

SuggestedRemedy

implement

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Line 10: Create register CPE_supported in new subclause 61.1.5.5 (with appropriate crossref).
line 15: PAF Supported -> link to PAF_Available (add appropriate crossref)
line 22: Remote PAF Supported -> based on accepted comment #950, only need a cross-reference to the appropriate section of 61.3.
line 28: PAF Enable -> link to PAF_Enable (add appropriate crossref)

Cl **61** *SC* **61** *P* *L* # **63002**

Copper OAM Joint Sub Task Force

Comment Type **T** *Comment Status* **A**

Comment generated from #255:

Bad cross reference; also prove actual clause 61 signal name.

SuggestedRemedy

In a PCS that I believe has no uniqueness between use in a Central Office vs use in a Remote, I do want to see the name of the signal to the PCS layer that provides such uniqueness. Also want to see text in Clause 61 that details such uniqueness. This will provide fodder for next round of comments.

Since the PCS has no uniqueness, one of the lower layers must have such uniqueness. Provide here, and in Clause 61, signal names which cross the alpha-beta to set Central Office vs Remote operation.

Scrub clauses 45, 61, 62, and 63 to ensure that all signals have a complete path from MMD register all the way to the affected destination.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add signal to alpha(beta) interface (PMA -> PCS) which indicates whether PMA is CO or CPE subtype. MSB of flavor signal will be used for this. Add appropriate cross reference to Clause 45.

Cl **61** *SC* **61** *P* **319** *L* **1** # **1192**

Law, David 3Com

Comment Type **T** *Comment Status* **R**

To reduce the possibility of confusion with the existing use of the word 'fragment' in 802.3 relating to the result of a collision in half-duplex mode, subclause 9.6.4 for example is titled 'Fragment extension, suggest that it might be an idea to do a global replace of 'Fragment' with 'PMI Fragment', or something similar, throughout IEEE P802.3ah.

SuggestedRemedy

Suggest a global replace of 'Fragment' with PMI Fragment', or something similar, throughout IEEE P802.3ah.

Proposed Response *Response Status* **C**

REJECT.
Given the fact that collisions aren't discussed anywhere in Clause 61, the possibility of confusion seems to be very small. The reader will understand that the word "fragment" can have a different meaning in different contexts.

Cl **61** *SC* **61** *P* **320** *L* **1** # **267**

Tom Mathey Independent

Comment Type **T** *Comment Status* **A**

Clause 61 needs to use the PCS receive link status, signal TC_synchronized, to help provide either a set of code points sourced and sunk by the 64/65 byte encapsulation layer, or a set of specified indicator bits as stated on p320, line 39. Code points need to be LF for local fault, and RF for remote fault. The need for these code points is well described in comments against previous drafts.

SuggestedRemedy

Implement either 64/65 byte code points or indicator bits. Provide signal names and use these names in Clause 45. Update tables and text. Then remove scrambler and descrambler, along with any text which references scrambler, descrambler.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comments #293(T), #267(T), #820(TR), #1210(TR), #1182(TR) and #1183(TR) suggest removing the scrambler.
Comments #864(TR), #799(T), #800(T) and #1237(T) address issues related to the scrambler.

Proposed action:
- Accept comment #1237
- Remove scrambler/descrambler
- Resolution of comments #293, #267, #820, #1210, #1182, #1183, #864, #799 and #800 immediately follows

Cl **61** *SC* **61** *P* **320** *L* **1** # **1190**

Law, David 3Com

Comment Type **T** *Comment Status* **A**

IEEE Std 802.3-2002 defines a 'data frame: Consists of the Destination Address, Source Address, Length Field, logical link control (LLC) Data, PAD, and Frame Check Sequence.' (see subclause 1.4.96) and a 'packet: Consists of a data frame as defined previously, preceded by the Preamble and the Start Frame Delimiter, encoded, as appropriate, for the Physical Layer (PHY) type.' (see 1.4.198).

SuggestedRemedy

Suggest that Clause 61 should be reviewed for correctness of these terms. In a number of cases I thing the term 'data frame' would be correct rather than 'packet.

One possible instances for example is line 18, page 333. The text states '... that short packets can be transported over a single fragment ...' however since, as far as understand, the preamble and SFD are not being transferred, this should really read '... that short data frames can be transported over a single fragment ...'.

Proposed Response *Response Status* **C**

ACCEPT.
Editor will work with Commenter to locate instances where change is required.
See also comment #268.

Cl **61** *SC* **61** *P* **336** *L* **45** # **186**

Squire, Matt Hatteras Networks

Comment Type **T** *Comment Status* **A**

I suggest separating out the restrictions of which pairs can be aggregated together, from the restrictions related to what can be transmitted on pais in an aggregate group. We list them all as "transmit" restrictions, when there are really two distinct categories of restrictions.

SuggestedRemedy

Add section (new) 61.2.2.x (before 61.2.2.5)

61.2.2.5 PHY PMI Aggregation Restrictions

In order to guarantee correct receiver operation, a transmitter must ensure that pairs in an aggregate group obey certain restrictions.

The differential delay is one factor that restricts which PMIs can be aggregated. Differential latency measures the variation in time ...to have similar latencies. [Line 25-36 P 336]

The speed ratio of the links also restrictions what PMIs can be aggregated together. The speed ratio is defined as the ratio of the bit rate of the faster link divided by the bit rate of the slower link.

These restrictions that govern which PMIS can be aggregated are:
a) The differential latency between any two PMIs in an aggregated group shall be no more than maxDifferentialDelay
b) The highest ration of speeds between any two aggregated links shall be maxSpeedRatio. Note that a speed ration of 4 may only be used if the latency is controlled to meet the restriction (a).

Delete paragraph 2 of 61.2.2.5 (starts line 26 - was moved above)

Change "second" to "first" on line 38.

Delete 4th paragraph in 61.2.2.5 (starts line 41 - was moved earlier)

Add new 4th paragraph

"The second restriction is on the size of the fragments, in that fragments must be a multiple of 4 octets in size when possible."

Proposed Response *Response Status* **C**

ACCEPT.
Editor to correct: PMIS -> PMIs, ration -> ratio

Cl **61** *SC* **61** *P* **360** *L* **20** # **148**

Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**

This standard isn't written in C; its chosen programming language is (pseudo) Pascal. You have used "0x" notation just four times - it's not worth the reader's while.

SuggestedRemedy

Replace "0x10" with "hexadecimal 00" and similarly.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use subscript "16" to indicate hexadecimal notation throughout the draft.

Cl **61** *SC* **61.1** *P* **320** *L* **10** # **1005**

Thompson, Geoff Nortel

Comment Type **E** *Comment Status* **R**

I hope my network is not "public". Even over common carrier facilities it is (I would hope) a "private" network.

SuggestedRemedy

Change "public" to "common carrier"

Proposed Response *Response Status* **C**

REJECT.
A public network is a network that can be used by the public, typically after paying a subscription or usage fee. We believe this nomenclature to be unambiguous as well as in common use.

Cl **61** *SC* **61.1** *P* **320** *L* **15** # **1006**

Thompson, Geoff — Nortel

Comment Type **E** *Comment Status* **A**

The following text nees minor improvment:
Unlike the media types specified for 10BASE-T, 100BASE-T and 1000BASE-T, voice-grade copper networks have channel characteristics that are very diverse and therefore it is conventional to discuss the channel
behavior only in terms of averages, standard deviations and percentage worst case.

SuggestedRemedy

Change to:
Unlike the specified copper categories for 10BASE-T, 100BASE-T and 1000BASE-T, existing common carrier voice-grade copper has channel characteristics that are very diverse. Therefore it is conventional to discuss the channel behavior only in terms of averages, standard deviations and percentage worst case.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.1** *P* **320** *L* **24** # **1007**

Thompson, Geoff — Nortel

Comment Type **E** *Comment Status* **R**

This paragraph is nearly unparsable.

Why is "O" and "R" being used instead of matching the "D" and "U" of clause 58?

SuggestedRemedy

Start with the concept, text something like
"10PASS-TS and 2BASE-TL PHYS are not completely symmetrical, therefore a "-O" subtype is normally used at the service provide end of the link and a "-R" subtype is normally used at the CPE.

then add whatever else you need to clean it up.
Harmonize sub-type terminology across clauses.

Proposed Response *Response Status* **C**

REJECT.
The text is unambiguous; "O"/"C" and "R" are common terminology in xDSL standards and recommendations.

Cl **61** *SC* **61.1** *P* **320** *L* **34** # **1008**

Thompson, Geoff — Nortel

Comment Type **TR** *Comment Status* **A**

This paragraph is implementation fluff not necessary to the specification.

SuggestedRemedy

Delete lines 33-36

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
As 61.1 is an overview section (see subclause heading), it may contain some information that is not strictly necessary to the specification.
The sentence "In this case [...] establish a link." is indeed implementation fluff and shall be removed.
The sentence "The CO and CPE [...] physical device." becomes the last sentence of the fifth paragraph.

Cl **61** *SC* **61.1** *P* **320** *L* **35** # **176**

Squire, Matt — Hatteras Networks

Comment Type **E** *Comment Status* **A**

Change "take up to establish a link" to 'take to establish a link'.

SuggestedRemedy

See above.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Resolution of comment #1008 may apply.

Cl **61** *SC* **61.1** *P* **320** *L* **38** # **177**

Squire, Matt — Hatteras Networks

Comment Type **E** *Comment Status* **A**

Add reference for unidirectional links.

SuggestedRemedy

Change "unidirectional links" to "unidirectional links as described in Clause 57.2.9."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.1.1** *P* **320** *L* **45** # **1009**

Thompson, Geoff — Nortel

Comment Type **TR** *Comment Status* **A**

I don't think the reference to 100BASE-T4 adds value without more explanation than is offered here. If suport for code bonding of multiple pairs is in here it should be mentioned also.

SuggestedRemedy

Delete reference to 100BASE-T4.
Redo so that it actually just a "scope"
E.g. specifys a PHY from MII to MDI that is based on blah, blah. It includes DSP coding stolen from blah blah and common initialization mechanisms used by both PHYs

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
Replace subclause by following text:
"This clause defines the Physical Coding Sublayer (PCS) for 2BASE-TL and 10PASS-TS, which has similarities to other 802.3 PCS types but also differs since new sublayers are added within
the PCS sublayer to accommodate the operation of Ethernet over access network copper channels. This clause also defines the common startup and handshaking mechanism used by both PHYs."

Cl **61** *SC* **61.1.2** *P* **321** *L* **3** # **1204**

Law, David — 3Com

Comment Type **E** *Comment Status* **A**

Typo.

SuggestedRemedy

Missing period, '... on multiple pairs' should read '... on multiple pairs.'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.1.4.1** *P* **321** *L* **54** # **268**

Tom Mathey — Independent

Comment Type **E** *Comment Status* **A**

As the preamble and sfd are not present, the better word is frame vs packet

SuggestedRemedy

Scrub Clause 45 and 61 and change packet to frame when the PCS payload has preamble and sfd stripped.

Proposed Response *Response Status* **C**

ACCEPT.
See also comment #1190.

Cl **61** *SC* **61.1.4.1** *P* **322** *L* **45** # **269**

Tom Mathey — Independent

Comment Type **E** *Comment Status* **A**

Bad grammer in sentence "In multiple links are aggregated,". Replace word In with If

SuggestedRemedy

If multiple links are aggregated,

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.1.4.1.1** *P* **323** *L* **18** # **178**

Squire, Matt — Hatteras Networks

Comment Type **E** *Comment Status* **A**

The rate matching part can send the frame to the PAF or to the TPS-TC.

SuggestedRemedy

Add to the end "or to the TPS-TC sublayer."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.1.4.1.1** *P* **323** *L* **20** # **179**

Squire, Matt — Hatteras Networks

Comment Type **E** *Comment Status* **A**

Poor word choice.

SuggestedRemedy

Change "receive" to "received"?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change:
"The PHY buffers complete receive frames. On reception of a complete frame the PHY prepends the Preamble and SFD fields, and sends it to the MAC at 100Mb/s."
To:
"For reception the PHY buffers a complete frame, prepends the Preamble and SFD fields, and sends it to the MAC at 100Mb/s."

Cl **61** *SC* **61.1.4.1.4** *P* **323** *L* **52** # **270**

Tom Mathey Independent

Comment Type **E** *Comment Status* **A**

The text "runs over aggregated set" seems to exclude the case of single pair without loop agg.
The text "Ethernet OAM" seems to exclude the more normal case of "Ethernet data frames".

SuggestedRemedy

Add text to support single wire pair.
Add text to support all types of frames that make it to this layer.
Add a few more words about lack of support for uni-directional.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change first two sentences in 61.1.4.1.4 to:
"Ethernet OAM (see Clause 57) runs over a MAC service which uses a PHY consisting of either a single physical link, or more than one physical 2BASE-TL or 10PASS-TS links, aggregated as described in 61.2.2. The Ethernet OAM operates as long as there is at least one PMI in the PHY that is operational. The physical xDSL PMIs in Clauses 62 and 63 each have their own management channel that operates per loop (eoc, VOC and IB for 10PASS-TS; EOC and IB for 2BASE-TL)."

Cl **61** *SC* **61.1.5.3.1** *P* **325** *L* **40** # **271**

Tom Mathey Independent

Comment Type **E** *Comment Status* **A**

The text "addressed by one MDIO bus. " is not quite correct. More than one physical MDIO bus could be used to access a set of PHYs.

SuggestedRemedy

Indicate that the requirement is logical access and use, the access could be via more than one physical MDIO bus

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "Similarly, the" to "The"
Delete the text "addressed by one MDIO bus"
so it reads "The number of PCS instances may be different from the number of PMA/PMD instances."

Cl **61** *SC* **61.1.5.3.3** *P* **327** *L* **38** # **780**

Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**

wrong crossref for PMI_aggregate_register

SuggestedRemedy

change to 45.2.3.21

Proposed Response *Response Status* **C**

ACCEPT.
See also comment #275.

Cl **61** *SC* **61.1.5.3.3** *P* **327** *L* **38** # **275**

Tom Mathey Independent

Comment Type **E** *Comment Status* **A**

Bad cross reference.

SuggestedRemedy

Should be 45.2.3.21

Proposed Response *Response Status* **C**

ACCEPT.
See also comment #780.

Cl **61** *SC* **61.2.1.1** *P* **329** *L* **21** # **276**

Tom Mathey Independent

Comment Type **T** *Comment Status* **A**

A good intent on discarding frames, but not all cases are covered. Since the rate matching block stores an entire frame, loop agg stores frames, and the encapsulation layer stores frames, there is the case of no frame being transmitted across the MII, but a frame is in transit somewhere between the rate match layer and the alpha-beta interface when the signal TC_synchronized becomes false. It is difficult to abort when the transmit path has multiple layers of storage. It is probably easiest to just let the internal layers just flush normally.

SuggestedRemedy

Change text "A frame being transmitted over the MII when TC_synchronized becomes false is passed normally."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The intention of the text "A frame being transmitted over the MII when TC_synchronized becomes false shall be aborted" is not to require the MAC to abort transmission. Reword this text to "A frame being transmitted over the MII when TC_synchronized becomes false is aborted."
Change: "Transmit frames shall not be forwarded unless TC_synchronized is true for the whole frame." To: "Transmit frames shall not be forwarded to the PAF/TPS-TC unless TC_synchronized is true for the whole frame."

Cl **61** *SC* **61.2.1.1** *P* **329** *L* **22** # **732**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **R**

Not clear whether frames where transmission was aborted due to deassertion of TC_synchronized will be counted.

SuggestedRemedy

Add a register in the PCS section which counts these frames.

Proposed Response *Response Status* **C**

REJECT.
There is no reason to count these frames.

Cl **61** *SC* **61.2.1.1** *P* **329** *L* **7** # **168**

Shimon Muller — Sun Microsystems, Inc

Comment Type **TR** *Comment Status* **A**

A lot of effort was spent in this draft to define a more generic mechanism for IFS stretching. However, this specification stops short from allowing the use of this mechanism for what it was intended for in the first place: rate matching between the MAC and the PHY. Instead, it relies on the half-duplex nature of the MAC to achieve this purpose.
Although the use of CRS and the deferral process in the MAC may be the preferred way for achieving lossless rate matching, the reality in the marketplace today is that half duplex operation is rarely used and many new MACs no longer support this mode of operation. This is going to be even more true in the future, since we did not have a standard in many years that relied for its feasibility on the half duplex nature of the MAC.
I therefore believe that this standard should allow for the alternative scheme for rate matching using IFS stretching, particularly since the two mechanisms are fully compatible and should not cause any interoperability problems.

SuggestedRemedy

1. In 4.4.2 define how the parameter ifsStretchRatio is computed.
2. In 56.1 change the text to allow the alternative mechanism for rate matching.
3. In 61.1.4.1.1 change/add text to allow the alternative mechanism for rate matching.
4. In 61.2.1 change/add text to allow the alternative mechanism for rate matching.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The resolution of whether and how to make Clause 4 generic enough to support MAC-PHY rate-matching for EFM copper is a matter for the Clause 4 editorial team. The PHY specified in Clause 61 works with MACs implemented to the original Clause 4 spec and would also work unmodified with a MAC that uses IPG stretch for rate-matching.
At the end of 61.1.4.1.1 add the following text:
"NOTE - if a MAC stretches the inter frame spacing between frames so that the transmitted data rate is below the PHY's data rate it may be configured for full-duplex mode of operation as the PHY's transmit buffer will never overflow. If however the MAC is configured for full-duplex and transmits data faster than the PHY's data rate the PHY's transmit buffer will overflow and its behavior will be undefined."

Cl **61** *SC* **61.2.1.1** *P* **329** *L* **9** # **731**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **A**

Typo on line 9

SuggestedRemedy

Remove "from"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.2** *P* *L* # **208**
Squire, Matt Hatteras Networks

Comment Type **TR** *Comment Status* **R**

This is a general comment on PMI aggregation. It covers Clause 61, 45, & 30.

I believe we need a way to enable/disable the discovery mechanisms, and a way to statically provision bonded groups and disabling the G994.1 handshake mechanisms for discovery. Discovery is basically a management function, and one implemented using protocols, and every other such application (LACP, OAM, etc.) in 802.3 has an enable/disable switch that is not yet present in this application.

SuggestedRemedy

C61.2.2.7.3, P339
L30, new paragraph: Clause 45 defines a bit to enable or disable the automatic detection and control of PMI aggregation capabilities as described in this section and 63.3.8.12. The PAF_Discovery_enable bit is read-write. When clear, PMI aggregation discovery mechanisms are disabled. In this case, the PMI_available registers must be set so that each PMD is mapped to one and only one PMI, and when that PMI becomes operational, it is activated in that PMI and no remote discovery procedures are performed. When PMI_discovery_enable is set, the procedures below for PMI aggregation discovery are performed.

C45, 45.2.3.22, P108
L42, add new bit:
Discovery enable
0 - discovery operation disabled, other bits in this register are invalid
1 - discovery operation enabled
R/W

C30.5.1.1, P55(?)
Maybe insert new C30.5.1.1.18
Attribute: aPMIDiscoveryAdminState
Syntax: Same as aPortAdminState
Behavior: This attribute provides a means to control the use of PMI aggregation discovery.

Proposed Response *Response Status* **C**

REJECT.

Use of the remote discovery mechanism is not mandatory therefore the addition of a control to disable it is redundant. If the management entity does not wish to use discovery it may set the aggregation registers in any manner that it chooses. No G.994.1 mechanisms to perform discovery register access are performed, if the Clause 45 discovery registers are not accessed.

Provision of the mechanism to support discovery is mandatory.

See #947

Interested parties are invited to prepare a comment against Clause 30 to further address this issue.

Cl **61** *SC* **61.2.2.1** *P* **332** *L* **50** # **180**
Squire, Matt Hatteras Networks

Comment Type **E** *Comment Status* **A**

Change "required" to "permitted".

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.2.1** *P* **333** *L* **1** # **181**
Squire, Matt Hatteras Networks

Comment Type **E** *Comment Status* **A**

Bad references

SuggestedRemedy

Change 61.2.2.5 to 61.2.2.6 (line 1)
Change 61.2.2.6.3 to 61.2.2.7.3 (line 7)

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.2.1** *P* **333** *L* **1** # **278**
Tom Mathey Independent

Comment Type **E** *Comment Status* **A**

Bad cross reference.

SuggestedRemedy

Should be 61.2.2.6

Proposed Response *Response Status* **C**

ACCEPT.
See also comment #181.

Cl **61** *SC* **61.2.2.1** *P* **333** *L* **1** # **781**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**
wrong crossref

SuggestedRemedy
change to 61.2.2.6

Proposed Response *Response Status* **C**
ACCEPT.
See also comment #181.

Cl **61** *SC* **61.2.2.1** *P* **333** *L* **7** # **279**
Tom Mathey Independent

Comment Type **E** *Comment Status* **A**
Bad cross reference.

SuggestedRemedy

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE. (no remedy suggested)
See resolution of comment #181.

Cl **61** *SC* **61.2.2.1** *P* **333** *L* **7** # **782**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**
wrong crossref

SuggestedRemedy
change to 61.2.2.7.3

Proposed Response *Response Status* **C**
ACCEPT.
See also comment #181.

Cl **61** *SC* **61.2.2.2** *P* **333** *L* **13** # **1194**
Law, David 3Com

Comment Type **E** *Comment Status* **A**
Possible typo.

SuggestedRemedy
Suggest the text '... a standard data frame ...' should be changed to read '... a data frame ...'.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **61** *SC* **61.2.2.2** *P* **333** *L* **15** # **1195**
Law, David 3Com

Comment Type **E** *Comment Status* **A**
On this line it is stated that 'Each fragment is given a fragment header ...' yet the Figures below show a 'Fragmentation Header'.

SuggestedRemedy
Suggest one of these two terms should be used consistently.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

Use "fragmentation header"

Cl **61** *SC* **61.2.2.3** *P* **334** *L* **2** # **280**
Tom Mathey Independent

Comment Type **E** *Comment Status* **R**
Bad cross reference.

SuggestedRemedy

Proposed Response *Response Status* **C**
REJECT.

No bad X-ref seen; commenter is not specific.

Cl **61** *SC* **61.2.2.3** *P* **334** *L* **6** # **733**
Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **R**
Missing that the fragment will be removed from packet in work.

SuggestedRemedy
Add item f) remove fragement from packet in work

Proposed Response *Response Status* **C**
REJECT.
There is no requirement for a transmitter to remove data from its buffers after transmission - this is a practical issue that transmitter designers may solve in any manner that they wish.

Cl **61** *SC* **61.2.2.4** *P* **334** *L* **17** # **182**

Squire, Matt — Hatteras Networks

Comment Type **E** *Comment Status* **A**

Would be good to separate initialization procedures into own section.

SuggestedRemedy

Suggest adding a subheader between paragraphs 1 & 2

61.2.2.4.1 PHY PMI Aggregation Initialization Procedures

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Should be:

61.2.2.4.1 Expected sequence number

[The subsequent paragraphs apply at times other than initialization]

Cl **61** *SC* **61.2.2.4** *P* **334** *L* **19** # **1193**

Law, David — 3Com

Comment Type **T** *Comment Status* **A**

From my search of the document the only two instances of the string 'frame sequence errors' is here and its related PICS intem. It is therfore unclear to me what this counter is for, when it is incremented, when it is cleared and how it is accesed.

SuggestedRemedy

If it really is missing please add a definiton of when the 'frame sequence errors' counter is incremented, cleared, how it is accesed and what is it for.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The commenter is correct. There is no "frame sequencing" described in the standard, therefore:

61.2.2.4, p 334, l 19

Replace the term "frame sequencing errors" with "errors in fragment sequencing (61.2.2.6.2)"

and edit the PICS to match.

Cl **61** *SC* **61.2.2.4** *P* **334** *L* **30** # **942**

O'Mahony, Barry — Intel Corp.

Comment Type **E** *Comment Status* **A**

Replace "<=" with correct symbol.

SuggestedRemedy

ALT-0163 in symbol font

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.2.4.1** *P* **335** *L* **1** # **783**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

The condition for timeout is unclear. Is there a seperate timer for each PMI-queue, each running at it`s own speed (according to the line rate) and each being seperately resetted, when a new fragment comes in before 16384 bit times (maxDifferentialDelay) is reached?

SuggestedRemedy

define timeout condition in extra text

possible solution is given in comment

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Although the definition of differential latency is defined in 61.2.2.5 in terms of the bit rate of the higher speed link, the commenter is correct that this is unclear and would benefit from explicit statement.

The text is clear that the error condition is satisfied by (any queue non empty AND no fragment processed) for timeout period.

61.2.2.4.1, p 335, l 54

Add text at end of line "expressed in bit times of fastest link"

Cl **61** *SC* **61.2.2.4.1** *P* **335** *L* **12** # **183**

Squire, Matt — Hatteras Networks

Comment Type **T** *Comment Status* **A**

I think the FRAGMENT_ERROR state should be transitioned from the INCREMENT_EXPECTED_FRAGMENT state. In the latter state, we process a fragment. When processing the fragment, we may detect the SoP/EoP/Overflow conditions.

SuggestedRemedy

Draw the transition to the FRAGMENT ERROR state from the INCREMENT EXPECTED FRAGMENT.

Proposed Response *Response Status* **C**

ACCEPT.
(Move the beginning of the arrow.)

Cl **61** *SC* **61.2.2.4.2** *P* **335** *L* **47** # **184**

Squire, Matt — Hatteras Networks

Comment Type **T** *Comment Status* **A**

Add variable smallestFragmentSequenceNumber and adjust the definition of expectedFragmentSequenceNumber.

SuggestedRemedy

1) Add (before expectedFragmentSequenceNumber)
smallestFragmentSequenceNumber - the smallest sequence number of fragments at the head of the per-PMI quques when either all active queues are non-empty or at least one queue has been non-empty for maxDifferentialDelay bit times at the bit rate of the PMD associated with that queue

2) Change
expectedFragmentSequenceNumber - the sequence number expected in the receive process that would not result in a fragment error

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The additional text for expectedFragmentSequenceNumber is useful but the definition of smallestFragmentSequenceNumber is identical to nextFragmentSequenceNumber.

61.2.2.4.2, p 335, l 47

Insert text at beginning of definition "The sequence number expected in the receive process that would not result in a fragment error."

Cl **61** *SC* **61.2.2.4.2** *P* **335** *L* **47** # **784**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **R**

state diagram variables: expectedFragmentSequenceNumber: only initial value described, no condition for incrementing

SuggestedRemedy

additionally decribe condition for incrementing (in State "Increment expected fragment")

Proposed Response *Response Status* **C**

REJECT.

The condition for incrementing is when nextFragmentSequenceNumber equals expectedFragmentSequenceNumber

---

Cl **61** *SC* **61.2.2.4.3** *P* **336** *L* **15** # **735**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

Modulo operation for incrementation of sequence number missing

SuggestedRemedy

Add modulo(2^14) operation.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.2.4.3** *P* **336** *L* **18** # **191**

Squire, Matt — Hatteras Networks

Comment Type **TR** *Comment Status* **A**

The per-PMI queue sizes don't seem to match the differential delays. The maxDifferentialDelay is now 15000 bit times. The per-PMI buffer sizes are 16Kb and 8Kb, respectively.

SuggestedRemedy

Bump up the perPMI receive buffer sizes to 16Kb. Or lower the maxDifferentialDelay for 2BASE-TL.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Bump up the perPMI receive buffer sizes to 16Kb.
Accepting #736 has resolved the issue.

This comment is related to #736 and #381.

Cl **61** *SC* **61.2.2.4.3** *P* **336** *L* **19** # **736**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

Differential latency of 2BASE-TL and 10PASS-TS identical.
Therefore, buffer size for both is identical.

SuggestedRemedy

Remove "... or 2^13 for 2BASE-TL only systems are sufficient."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Insert "such" before "that".
Remove "... or 2^13 for 2BASE-TL only systems..."
Also update PICSto reflect that differential latency of 2BASE-TL and 10PASS-TS identical.
See also comments #381 and #191.

Cl **61** *SC* **61.2.2.4.3** *P* **336** *L* **4** # **185**

Squire, Matt — Hatteras Networks

Comment Type **E** *Comment Status* **A**

Change "preceeding section"

SuggestedRemedy

to "Section 61.2.2.4"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change to "61.2.2.4.1" [new section; #182]

Cl **61** *SC* **61.2.2.5** *P* **336** *L* **28** # **785**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

Definition of differential latency is still unclear.

Besides different speeds and different fragment sizes, the use of interleaving and error correction (only for 10PASS-TS) introduces additional delay which needs to be considered for differential latency calculation.

The sentence "A differential latency of N bit times implies that…" results, for fragments of the same size (512 Byte) over two lines with equal bitrates, in a differential latency of N=4096 instead of zero as expected. Is this intended?

SuggestedRemedy

Add a note which clearly defines the contributors of differential latency -according to the comment.

Add another note that even for same speeds and same packet sizes a differential latency - greater zero- exists.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The commenter is correct that the minimum value for differential latency is 4096 bit times. This is because the differential latency definition includes the maximum fragment size. This may be
confusing and warrants a note,

61.2.2.5, p 336, l 35

Add after end of paragraph, "NOTE - The value for differential latency for two identical links will be 4096 bit times because the definition includes the length of a maximum size fragment."

Cl **61** *SC* **61.2.2.5** *P* **336** *L* **29** # **282**

Tom Mathey — Independent

Comment Type **E** *Comment Status* **A**

Bad grammar, text "in by"

SuggestedRemedy

Correct grammar

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete "in"

Cl **61** *SC* **61.2.2.5** *P* **336** *L* **30** # **786**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

The sentence "Larger differential latencies imply…" is a general statement that makes no sense here, as sequence number range is fix (2^14).

SuggestedRemedy

Remove sentence

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Comment changed from "E" to "T" by chair

Paragraph is describing the implications of differential latency, but no where is there a precise definition of it. Propose the paragraph be re-written as follows:

"One factor is the differential latency between multiple PMIs in an aggregated group. Differential latency measures the variation in the time required to transmit across different PMIs. To normalize the latency measurement for high and low speed links it is measured in bit times. A differential latency between two PMIs is defined as the number of bits, N, that can be sent across the fast link, in the time that it takes one maxFragmentSize fragment to be sent across the slow link. Large differential latencies generate greater variance in bit delivery times across aggregated PMIs, which in turn require large sequence number ranges. . . ."

Cl **61** *SC* **61.2.2.5** *P* **336** *L* **32** # **787**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

The sentences "The PMD control …" and "This is achieved ..." imply that the parameters bit rate, error correction and interleaving can be adjusted during data mode/show time.

For 2BASE-TL adjusting the bit rate in data mode is not applicable.

SuggestedRemedy

Add a note that all contributors for latency have to be considered during handshake session (this implies they cannot change during data mode).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "This is achieved by adjusting..."
to "This is achieved by configuring..."

Cl **61** *SC* **61.2.2.5** *P* **336** *L* **33** # **737**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **A**

Error correction and interleaving functions are just defined for 10PASS-TS.

SuggestedRemedy

Add a footnote that error correction and interleaving function are only defined for 10PASS-TS.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Footnote will be added for interleaving.

Interleaving is the relevant issue here, since it affects latency. While 2BASE-TL does not have block error correction, it does use trellis coding, which is sometimes considered forward error correction.

Cl **61** *SC* **61.2.2.5** *P* **336** *L* **44** # **283**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **R**

List of restrictions is not complete. When a maximum frame of 1522 bytes is split across multiple wire pairs using the minimum agg fragment size of 64 bytes, then not all 32 pairs can be used as 1522/64 = 23.78.

SuggestedRemedy

Add text that agg for a given frame can take place over no more than 23.78 wire pairs out of 32 possible.

Proposed Response *Response Status* **C**

REJECT.
There is no necessity to add a restriction for this, it would be redundant (as the commenter demonstrates by deriving it from other restrictions).

Cl **61** *SC* **61.2.2.5** *P* **336** *L* **44** # **284**

Tom Mathey Independent

Comment Type **T** *Comment Status* **R**

List of restrictions is not complete. The intent of module 4 is not quite specific enough. I believe that the intent was that one and only one of the fragments in a sequence could be other than mod 4. When the text says last fragment, then if only one fragment is sent, then it is certainly the last one.

For example, with 3 wire pairs a 1522 byte frame could be split as:
Intended: 512, 512, 498
Allowed: 510, 51, 502

SuggestedRemedy

Add text line 51 to e) "one and only one of the fragments in a sequence shall be other than mod 4."

Proposed Response *Response Status* **C**

REJECT.
The text on line 51 is complete and unambiguous. The second example that the commenter gives (510, 510, 502) would be non-compliant according to this text.

Cl **61** *SC* **61.2.2.5** *P* **336** *L* **45** # **738**

Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **R**

Differential latency can be up to 16384 bit times.

SuggestedRemedy

Replace 15000 bit times with 16384 (=2^14)

The number is based on the following derivation:
512 Byte (maxFragmentSize) x 8 Bits/Byte x 4 (maxSpeedRatio) = 16384 Bit

Proposed Response *Response Status* **C**

REJECT.
The maxDifferentialDelay is restricted to 15,000 bit times to limit the size requirement for the receive buffer. It is related to the equation given by the commenter but not limited to that.
See the note on line 49/50.

Cl **61** *SC* **61.2.2.5** *P* **336** *L* **46** # **381**

Cravens, George Mindspeed

Comment Type **T** *Comment Status* **R**

maxDifferentialDelay should be defined as 15,000 bit times only for 10Pass-TS. For 2Base-TL, it should be 8,000 bit times. Clause 61.9.4.3 (pg. 395) already defines it this way (PAF-2, line 12).

SuggestedRemedy

Insert the following text before (maxDifferentialDelay):

"for 10Pass-TS or 8,000 bit times for 2Base-TL"

Proposed Response *Response Status* **C**

REJECT.
See also comments #191 and #736.

Cl **61** *SC* **61.2.2.5** *P* **336** *L* **47** # **187**

Squire, Matt — Hatteras Networks

Comment Type **T** *Comment Status* **R**

I'd like to see if we can centralize all variables into a single table to make them appear just once and be easy to see how the aggregation function differs for VDSL & SHDSL.

SuggestedRemedy

Eliminate values from 61.2.2.5
- Replace 64B with minFragmentSize and delete parenthesized comment [line47]
- Replace 512B with maxFragmentSize and delete parenthesized comment [line48]
- Replace 15000 with maxDifferentialDelay and delete parenthesized comment [line46)
- Replace 4 with maxSpeedRatio and delete parenthesized comment [line49]

Add new 61.2.2.6 (or the like)

61.2.2.6 PHY PMI Aggregation Parameter Values

As described in earlier sections, the PHY PMI Aggregation function is controlled by a set of parameters that can vary depending on the underlying physical layer. The control parameters for the PHY PMI Aggregation function are given below

	10PASS-TS	2BASE-TL
maxDifferentialDelay	15000 bittimes	15000 bittimes
maxSpeedRatio	4	4
maxPMIsPerPCS	32	32
minFragmentSize	64B	64B
maxFragmentSize	512B	512B
minimum per-PMI buffer size	16Kb	8Kb
minimum per-PCS buffer size	1522B	1522B

Proposed Response *Response Status* **C**

REJECT.
All variables are equal for 2BASE-TL and 10PASS-TS (see also comment #736).

Cl **61** *SC* **61.2.2.6** *P* **337** *L* **6** # **285**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **R**

Text on line 6 to send garbage frame up conflicts with line 49 which transfers frame up to MAC

SuggestedRemedy

Add text "or frame with error asserted"

Proposed Response *Response Status* **C**

REJECT.
This section defines the contents of the garbage frame which is sent "When the PAF is unable to reconstruct a frame." The extra note is innapropriate.

Cl **61** *SC* **61.2.2.6.1** *P* **337** *L* **11** # **1191**

Law, David — 3Com

Comment Type **E** *Comment Status* **A**

Is it 'frames' or 'fragments' that are passed across the gamma-interface. In this case isn't it fragments as what ever they are they are being passed up to the PAF.

SuggestedRemedy

Suggest the text '... all decapsulated frames ...' shoudl read '... all decapsulated fragments ...'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.2.6.1** *P* **337** *L* **19** # **286**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **R**

There is no reason to discard fragment simply because the encapsulation layer has asserted a receive error. It is better to pass the data up and mark with RxError across the MII to the next layer. Discarding data is bad and is to be avoided if possible.

SuggestedRemedy

Remove sentence.

Proposed Response *Response Status* **C**

REJECT.
If a fragment is known to be in error then it should not be reassembled into a frame - it may be the wrong frame, causing unnecessary error propagation.

Cl **61** *SC* **61.2.2.6.2** *P* **337** *L* **49** # **188**

Squire, Matt — Hatteras Networks

Comment Type **E** *Comment Status* **A**

Last two paragraphs are subordinate to third to last

SuggestedRemedy

Indent or bullet-ize last two paragraphs.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Bullet-ize (i.e., create an unordered list compliant with Clause 11 of the IEEE Style Guide)

Cl **61** *SC* **61.2.2.6.3** *P* **338** *L* **1** # **821**

Beili, Edward — Actelis Networks

Comment Type **TR** *Comment Status* **A**

This complicates the implementation and allows for an occasional "correct" frame to be sent.

SuggestedRemedy

Send synthetic garbage frame in all cases

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This relates to a matter of principle. Other members of the Task Force have strongly stated that information must not be discarded in case of error as the information may help trouble shooting. The STF have accepted this mechanism based on comments against previous drafts.

Editor to clarify text in 61.2.2.6 (p.336)
"When the PAF is unable to reconstruct or partially reconstruct a frame... "

Cl **61** *SC* **61.2.2.6.3** *P* **338** *L* **14** # **189**

Squire, Matt — Hatteras Networks

Comment Type **E** *Comment Status* **R**

Kill reference to 1522B. Just refer to the variables and earlier clause (in case it ever changes, again).

SuggestedRemedy

In comment.

Proposed Response *Response Status* **C**

REJECT.

This has already been the subject of too much discussion in the STF. The text already contains references to Clause 3 & 4.

Cl **61** *SC* **61.2.2.6.3** *P* **338** *L* **15** # **789**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

Transmit also first part of the error causing fragment (up to max lenght) ?

SuggestedRemedy

add "including/excluding first part of the error causing fragment"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
61.2.2.6.3, p 338, l 14
add "excluding the error causing fragment"

Cl **61** *SC* **61.2.2.6.3** *P* **338** *L* **5** # **788**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **A**

"Assert PAF_LostStart" forgotten

SuggestedRemedy

add "Assert PAF_LostStart"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.2.7.1** *P* **338** *L* **24** # **287**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **R**

Text states "This subclause specifies the data, sync and control signals ..."
It does no such thing. All of the signals are in 61.2.3.1, not anywhere in the agg subclause.

SuggestedRemedy

Place reference to 61.2.3.1 into 61.2.2.7 where it belongs. Then remove subclause 61.2.2.7.1 as it adds no value.

If intent was that 61.2.2.7.2 defines the encapsulation to agg interface signals, then only one signal (RxErr) in the list could even be considered an interface signal, all the rest are internal to agg.

Proposed Response *Response Status* **C**

REJECT.
61.2.2.7.1 covers the gamma interface. This uses a pointer to 61.2.3.1 so that the the interface is only defined in 1 place.
61.2.2.7.2 defines management entity signals - all of which are required for implementation of Clause 45 & Clause 30 management.

Cl **61** *SC* **61.2.2.7.1** *P* **338** *L* **24** # **790**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **A**

Typo: aggretation

SuggestedRemedy

correct: aggregation

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.2.7.2** *P* **338** *L* **35** # **791**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **A**

"signals are mapped to registers": Signals are 1-bit, registers are 16-bit-counters"

some of the signals are directly mapped to the registers, some signals are used to increment

SuggestedRemedy

change to: signals PAF_enable and PAF_available are mapped to register bits, the other signals cause corresponding registers to be incremented

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.2.7.2** *P* **338** *L* **40** # **792**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

forgot signal "PAF_available"

SuggestedRemedy

add signal "PAF_available"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.2.7.2** *P* **338** *L* **52** # **190**

Squire, Matt — Hatteras Networks

Comment Type **T** *Comment Status* **R**

I don't see why the overflow condition can be attributed to a particular PMA. Just like the later other error conditions, it can be caused by an error on any of the PMAs.

SuggestedRemedy

Eliminate the parenthesized words for TC_PAF_Overflow.

Proposed Response *Response Status* **C**

REJECT.
This event occurs when the per-PMI buffer overflows, therefore it can be traced to a particular PMA.

Cl **61** *SC* **61.2.2.7.3** *P* **339** *L* **18** # **1128**

Law, David — 3Com

Comment Type **T** *Comment Status* **A**

Clause 45 is optional and Clauses should be written is such as way that it can still operate in the absence of this interface. Generally the text 'If an MDIO interface is provided (see CROSS REF Clause 22/45), it is accessed via that interface. If not, it is recommended that an equivalent access be provided.' or similar is used.

SuggestedRemedy

Ensure that the text is written is such a way that it can still comply if the optional Clause 45 interface is not provided.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add text to this paragraph as requested by commenter.
Also, check existing text of 61, 61A, 62, 62A-C, 63, 63A-B to find text suggesting that Clause 45 defines registers/bits, where it should really say that Clause 45 defines access to these registers/bits.

Cl **61** *SC* **61.2.2.7.3** *P* **339** *L* **29** # **288**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **R**

Missing cross reference for both local and remote MMD address.

SuggestedRemedy

Add cross reference to the Clause 45 subclause where the CO 3.x.y register address is specified which holds the results of such a remote read.

Proposed Response *Response Status* **C**

REJECT.
The cross ref is given in line 19.

Cl **61** *SC* **61.2.2.7.3** *P* **339** *L* **36** # **207**

Squire, Matt — Hatteras Networks

Comment Type **TR** *Comment Status* **R**

I don't understand why PMI_Available is read-only for the CO-type. On the CO side, I may very well want to limit the connectivity just as I may on the CPE device.

SuggestedRemedy

Change 1st sentence to:
The PMI_Available_register is writable for both the CO and CPE subtypes. This is done so that one can restrict the connectivity via management to something less than what is physically available.

Proposed Response *Response Status* **C**

REJECT.

There is no necessity to make PMI_available r/w for CO type devices as the management entity may choose whether to use the full range of available PMIs or not. Note that the requirement for a CPE device to change the PMI_available register is due to a corner case for CPE devices which have the capability of linking a PMI to one of multiple MIIs - as described in the text, this linkage must be pre-configured before discovery starts. The CPE device is writing the PMI_available register prior to the CO device reading this register for discovery.

Cl **61** *SC* **61.2.2.7.3** *P* **339** *L* **38** # **739**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **R**

Not clear whether only 1 PMI aggregate register bit set means PAF fragmentation or not.

SuggestedRemedy

Add a note that even only 1 set bit in above register means PAF fragmentation.

Proposed Response *Response Status* **C**

REJECT.
61.2.2.1 specifies that if PAF_enable is set then fragmentation rules must be followed.

Cl **61** *SC* **61.2.2.7.3** *P* **339** *L* **51** # **289**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **R**

Missing cross reference for both local and remote MMD address.

SuggestedRemedy

Add cross reference to the Clause 45 subclause where the CO 3.x.y register address is specified which holds the results of such a remote read.

Scrub clause 61 and 45 to ensure that a register is available for all remote reads or writes.

Proposed Response *Response Status* **C**

REJECT.
The cross ref is given in line 32.

Cl **61** *SC* **61.2.2.7.3** *P* **340** *L* **11** # **740**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

Address of remote discovery register missing.

SuggestedRemedy

Define address for remote discover register in PCS section.

Proposed Response *Response Status* **C**

ACCEPT. (Currently 45.2.3.22/23)

Cl **61** *SC* **61.2.2.7.3** *P* **340** *L* **16** # **793**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **A**

paragraph could be made clearer

reference to chapter 45.2.3.22 is missing (aggregation_discovery_control)

SuggestedRemedy

add: corresponds to command "Get", add respective cross reference

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Editor directed to add appropriate text.

Cl **61** *SC* **61.2.2.7.3** *P* **340** *L* **18** # **794**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **A**

paragraph could be made clearer

reference to chapter 45.2.3.22 is missing (aggregation_discovery_control)

SuggestedRemedy

add: corresponds to command "Set if clear", add respective cross reference

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Editor directed to add appropriate text.

Cl **61** *SC* **61.2.2.7.3** *P* **340** *L* **26** # **741**

Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A**

Chapter 61.3.12 and 45.2.3.22 define a clear if same operation.

SuggestedRemedy

Add description that a clearing takes only place if the current contents of remote_discovery_register is identical to remote_write_data.

Add respective cross reference to chapter 45

Proposed Response *Response Status* **C**

ACCEPT.
See resolution of comment #946.

Cl **61** *SC* **61.2.2.7.3** *P* **340** *L* **27** # **946**

O'Mahony, Barry Intel Corp.

Comment Type **TR** *Comment Status* **A**

clearing the remote_disovery_register needs to include the "clear if same" functionality. Also, need to clear PMI_Aggregate_register as discussed on bottom of page 339

SuggestedRemedy

Modify text as shown in omahony_2_0903.pdf

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.2.7.3** *P* **340** *L* **38** # **795**

Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A**

Definition of a read access to the remote_discovery_register where PMI_available bit is not set is missing.

SuggestedRemedy

Add the following sentence:

Read access to the remote_discovery_register where PMI_available bit is not set always returns 0.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

In the CO-side, there is no need for the PMI_Available registers to be configured prior to accessing the remote discovery registers. Note there may be multiple PMI_Available bits per PMI (1 in each PCS that the PMI is capable of being aggregated to).

In the CPE-side, the only requirement is to configure the registers so that each PMI is mapped to only one PCS. CPE devices do not respond to G.994.1 signals until this is done. Thus, the read attempt will fail (Nacknowledge read_write is asserted).

See resolution of comments #946 & #947. Also specify that NAcknowledge read_write is asserted if CPE devices fail to respond, with remote_read_data_bus set to hexadecimal 000000 000000

Cl **61** *SC* **61.2.3.1** *P* **341** *L* **35** # **742**

Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **R**

Reference to G.SHDSL missing

SuggestedRemedy

Add refernece G.SHDSL / Annex E.11.3

Proposed Response *Response Status* **C**

REJECT.

Cl **61** *SC* **61.2.3.1** *P* **341** *L* **37** # **1197**

Law, David 3Com

Comment Type **T** *Comment Status* **A**

Clause 45 is optional and therefore it may not always be present in a Clause 61 implementation. Some text should therefore be included indicating these function can also be support in other ways.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change last two paragraphs to read:

Additional Paragraph: OAM Information flow across the ?-interface supports access to registers referenced in Clause 45. Refer to Clause 45 for a complete description of access to TC, PMA and PMD registers from the MDIO interface.

Additional signals, which would be represented in the referenced document section H.3.1.4, are described in Table 61-7. These signals are unused when Clause 45 is not implemented.

Cl **61** *SC* **61.2.3.1** *P* **342** *L* **9** # **943**

O'Mahony, Barry Intel Corp.

Comment Type **TR** *Comment Status* **R**

In Table 61-7, In "Direction" column, all entries are incorrect, except for the first signal (PCS_link_state)

SuggestedRemedy

Fix (reverse) them.

Proposed Response *Response Status* **C**

REJECT.
All entries are actually correct, and have been ever since they were introduced in Draft 1.2.

Cl **61** *SC* **61.2.3.2.1** *P* **342** *L* **52** # **860**

Kimpe, Marc Adtran

Comment Type **E** *Comment Status* **A**

Typo: addtions

SuggestedRemedy

change addtions to additions

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.3.2.1** *P* **342** *L* **52** # **1213**

Thaler, Pat Agilent

Comment Type **T** *Comment Status* **A**

This is the first occurance but the problem is multiple places.

"Stet" is not correctly used. Stet is a technical editing word for reversing a marked deletion and not a generic term for "leave as is".

Stet means: to direct retention of (a word or passage previously ordered to be deleted or omitted from a manuscript or printer's proof) by annotating usually with the word stet.

SuggestedRemedy

Use a proper sentence such as the one at the beginning of 61.2.3.1, e.g.
"The ã interface is specified by incorporating section H.3.1 and all subsubsections of ITU-T Recommendation G.993.1 (Annex H) by reference, with the following exceptions and additions:"

(Where there are no exceptions or additions, the last part of the sentence can be ommitted of course.)

Also, for something like G.994.1 where it appears you are calling out large chunks with a few changes, it should be acceptable to delete most of your subsections and instead have one subclause which says:

This specifications incorporates Recommendation G.994.1 sections 2 through 12 by reference, with the following exceptions and additions:

And then just put in the exceptions and additions rather than having a paragraph for each section or subsection that is unchanged.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Replace all instances of "Stet" with "Referenced as is." Additionally, the Editor has license to modify granularity of section references.
See also comments #508, #1214 and #1215.

Cl **61** *SC* **61.2.3.3** *P* **343** *L* # **864**

Kimpe, Marc — Adtran

Comment Type **TR** *Comment Status* **A**

Per our interpretation of the spec, it appears that due to the configuration of the scrambler and CRC it is possible to deliver bad frames with good CRC's.

The specific case in theory is as follows:

The scrambler scrambles the frame payload data. The CRC then calculates a CRC on the scrambled data. The transmitter then sends the scrambled data along with the CRC where it may be subjected to bits errors.

At the receiver, if a bit error occurs near the end of a frame, that frame will likely be discarded due to a CRC mismatch. This is good. The data from that frame is then sent to the scrambler. The scrambler will propagate errors into the first payload bits of the next frame.

The CRC on the next frame will be computed and will be a correct CRC since the scrambled bits are OK. The data of the second frame is then sent to the scrambler where it is corrupted due to error propagation from the first frame. The second frame will likely be delivered with the propagated errors from the scrambler in it's first bits but with a correct CRC check.

SuggestedRemedy

If this is correct then perhaps the CRC should be on the non-scrambled data. We propose to scramble everything in each codeword except the sync byte. (This might be simpler to explain in the spec and also might make sync detection possible if the TC is used in systems in the future without byte synchronization.)

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
Comments #293(T), #267(T), #820(TR), #1210(TR), #1182(TR) and #1183(TR) suggest removing the scrambler.
Comments #864(TR), #799(T), #800(T) and #1237(T) address issues related to the scrambler.

Proposed action:
- Accept comment #1237
- Remove scrambler/descrambler
- Resolution of comments #293, #267, #820, #1210, #1182, #1183, #864, #799 and #800 immediately follows

Cl **61** *SC* **61.2.3.3** *P* **343** *L* **45** # **12**

Thomas Dineen — Dineen Consulting

Comment Type **TR** *Comment Status* **A**

A terminology issue for block coding schemes. In the past in 802.3 we have degines our block codes in units of bits, not bytes as shown on line 45

"The TC then performs 64Byte/65Byte encapsulation, and sends the resulting codewords to the PMA via the a(?) interface."

Also in the body of the IEEE 802.3 Standard we use the Capitol "B" in out block coding nomenclature.

SuggestedRemedy

In section 61.2.3.3 on page 343 Line 45:
Change "64Byte/65Byte" to "512B/520B"

In section 61.2.3.3.6 on page 349 Line 24:
Change "64Byte/65Byte" to "512B/520B"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Past 802.3 block codes were defined over Galois Field(2), because that was the alphabet of the underlying PMD.

That is not the case with EFM-Copper. The underlying DSL PHY's operate on byte-oriented data. Te block code used is thus defined on Galois Field(256).

Labelling it as "512B/520B" is thus misleading, and would obscure the fact this code is operating on bytes and not bits and that the
a(ß) interface transports byte delineation.

Propose we change it to (64/65-octet).

See also #1198.

Cl **61** *SC* **61.2.3.3** *P* **343** *L* **46** # **861**

Kimpe, Marc — Adtran

Comment Type **E** *Comment Status* **A**

The 32-bit CRC is not the only one defined, there is also a 16-bit CRC that has been introduced.

SuggestedRemedy

change "additional 32-bit CRC" to "additional 16 or 32-bit CRC"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.3.3** *P* **344** *L* **43** # **862**

Kimpe, Marc — Adtran

Comment Type **E** *Comment Status* **A**

Figure 61-14. The value for S at the bottom right of the figure should be updated from C0_16 to 50_16.

SuggestedRemedy

Change C0_16 to 50_16

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **1** # **820**

Beili, Edward — Actelis Networks

Comment Type **TR** *Comment Status* **A**

Scrambler implementation described may cause a transmission error in one Ethernet frame (corrupted bit(s) at the end of the EndOfFrame fragment) to be propagated to the following frame (descrambler would corrupt bits in the beginning of the following StartOfFrame fragment).

SuggestedRemedy

Remove Scrambler/Descrambler function altogether.

Proposed Response *Response Status* **C**

ACCEPT.
Comments #293(T), #267(T), #820(TR), #1210(TR), #1182(TR) and #1183(TR) suggest removing the scrambler.
Comments #864(TR), #799(T), #800(T) and #1237(T) address issues related to the scrambler.

Proposed action:
- Accept comment #1237
- Remove scrambler/descrambler
- Resolution of comments #293, #267, #820, #1210, #1182, #1183, #864, #799 and #800 immediately follows

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Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **1** # **799**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

data arrive 8-bit-parallel. Unclear whether LSB first or MSB first for serialization.

applies to subclause 61.2.3.3.2, line 31 as well

SuggestedRemedy

Define "LSB first" for serialization.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comments #293(T), #267(T), #820(TR), #1210(TR), #1182(TR) and #1183(TR) suggest removing the scrambler.
Comments #864(TR), #799(T), #800(T) and #1237(T) address issues related to the scrambler.

Proposed action:
- Accept comment #1237
- Remove scrambler/descrambler
- Resolution of comments #293, #267, #820, #1210, #1182, #1183, #864, #799 and #800 immediately follows

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Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **25** # **800**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **D**

Reset value of "all zero" causes a lock up state for linear feedback shift registers when data input contains only zeros until the first one arrives. This results in an output of also only zeros, i.e. the scrambler has no effect during that time.

also applies to subclause 61.2.3.3.2, line 35

SuggestedRemedy

"all one" would have the same effect with ones. Better choose 0x55 or 0xAA.

Proposed Response *Response Status* **Z**

WITHDRAWN.

PROPOSED ACCEPT IN PRINCIPLE.
Comments #293(T), #267(T), #820(TR), #1210(TR), #1182(TR) and #1183(TR) suggest removing the scrambler.
Comments #864(TR), #799(T), #800(T) and #1237(T) address issues related to the scrambler.

Proposed action:
- Accept comment #1237
- Remove scrambler/descrambler
- Resolution of comments #293, #267, #820, #1210, #1182, #1183, #864, #799 and #800 immediately follows

Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **3** # **1210**

Debbasch, Bernard GlobespanVirata

Comment Type **TR** *Comment Status* **A**

The justification for this scrambler is to improve the frame synchronzation. We believe that it actually increases the synchronization time:

1) The current definition of the PMA_receive_synchronized signal does not allow to synchronize the initialization of the scrambler on both sides of the link. It is very likely that PMA_receive_synchronized will be asserted on only one side of the link or, at different times on either side of the link. As a result, the resynchronization of the link will be lengthen instead of being improved.

2) There is the same probability to generate a stream of sync byte from scrambled data as from unscrambled data

3) The implementation of the scrambler seems to imply that the data stream is a bit-stream. The nature of the PHY's used in IEEE802.3ah is to be byte-oriented. By converting the byte-stream into a bit-stream, this may imply that the sync hunt should be performed at the bit level. That's not the case and would also slow down the resync process.

SuggestedRemedy

Remove the scrambler.

Proposed Response *Response Status* **C**

ACCEPT.
Comments #293(T), #267(T), #820(TR), #1210(TR), #1182(TR) and #1183(TR) suggest removing the scrambler.
Comments #864(TR), #799(T), #800(T) and #1237(T) address issues related to the scrambler.

Proposed action:
- Accept comment #1237
- Remove scrambler/descrambler
- Resolution of comments #293, #267, #820, #1210, #1182, #1183, #864, #799 and #800 immediately follows

Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **3** # **1182**

Langston, Daun Metanoia Technologie

Comment Type **TR** *Comment Status* **A**

Problem:
If the receiver drops out of frame prematurely because of an error, the next good frame likely suffers errors in the first three bytes while the CRC indicates the frame is error free.

SuggestedRemedy

Either solution is acceptable:
1) Remove the scrambler/descrambler combination
2) Initialize the scrambler/descrambler memory to zero prior to the beginning of each frame.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comments #293(T), #267(T), #820(TR), #1210(TR), #1182(TR) and #1183(TR) suggest removing the scrambler.
Comments #864(TR), #799(T), #800(T) and #1237(T) address issues related to the scrambler.

Proposed action:
- Accept comment #1237
- Remove scrambler/descrambler
- Resolution of comments #293, #267, #820, #1210, #1182, #1183, #864, #799 and #800 immediately follows

Cl **61** *SC* **61.2.3.3.2** *P* **345** *L* **33** # **1183**

Langston, Daun Metanoia Technologie

Comment Type **TR** *Comment Status* **A**

Problem:
If the receiver drops out of frame prematurely because of an error, the next good frame likely suffers errors in the first three bytes while the CRC indicates the frame is error free.

SuggestedRemedy

Either solution is acceptable:
1) Remove the scrambler/descrambler combination
2) Initialize the scrambler/descrambler memory to zero prior to the beginning of each frame.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comments #293(T), #267(T), #820(TR), #1210(TR), #1182(TR) and #1183(TR) suggest removing the scrambler.
Comments #864(TR), #799(T), #800(T) and #1237(T) address issues related to the scrambler.

Proposed action:
- Accept comment #1237
- Remove scrambler/descrambler
- Resolution of comments #293, #267, #820, #1210, #1182, #1183, #864, #799 and #800 immediately follows

Cl **61** *SC* **61.2.3.3.3** *P* **346** *L* **18** # **801**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **A**

in case e), the wording "all idle" does not fit, as besides of idle also a new frame is started.

SuggestedRemedy

rename to "idle and start of frame"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change d.) to "idle:"; change e.) to "idle (start new frame):"

Cl **61** *SC* **61.2.3.3.3** *P* **346** *L* **4** # **1209**

Debbasch, Bernard — GlobespanVirata

Comment Type **T** *Comment Status* **A**

The text only refers to the 32-bit CRC defined for 2BASE-TL. The text should be consistent with 61.2.3.3.5

SuggestedRemedy

Replace the text with:

... followed by a 16-bit or 32-bit CRC (refered to as TC-CRC) as defined in 61.2.3.3.5

Proposed Response *Response Status* **C**

ACCEPT. See #863

Cl **61** *SC* **61.2.3.3.3** *P* **346** *L* **4** # **863**

Kimpe, Marc — Adtran

Comment Type **E** *Comment Status* **A**

The 32-bit CRC is not the only one defined, a 16-bit CRC has been introduced.

SuggestedRemedy

change "followed by a 32-bit CRC" to "followed by a 16 or 32-bit CRC"

Proposed Response *Response Status* **C**

ACCEPT. See #1209

Cl **61** *SC* **61.2.3.3.3** *P* **346** *L* **41** # **819**

Beili, Edward — Actelis Networks

Comment Type **TR** *Comment Status* **R**

The 64/65 sync lock is based on finding the Sync Byte (0x0F or 0xF0) four times. A sequence of All Idle codewords being (0xF0,0x00,0x00,…0x00,0xF0,0x00,…) the state machine can possibly lock on 0x0F (second zero nibble from the last byte of the codeword and the first 0xF nibble from the first byte of the following codeword). This false lock would be detected only when data fragments start to flow, loosing a number of codewords in the process. This complicates the sync State machine to look at more than 8 bits.

SuggestedRemedy

Suggest replacing current Sync symbols (0x0F and 0xF0) with other symbols that are not nibble-symmetric, e.g. 0x8E and 0x71.

Proposed Response *Response Status* **C**

REJECT.

[but needs STF discussion]

Since DSL PHY's preserve byte boundaries between the a and ß interfaces, this should not be a problem. Can the commenter identify where this would be a problem?

Note: 0F and F0 have low EMI characteristics when the a(ß) interface is implemented serially.

Note: If the STF decides to go with replacement values, any values chosen should be even parity, and currently unused. The values proposed by the commenter do meet these criteria.

Cl **61** *SC* **61.2.3.3.3** *P* **347** *L* **3** # **294**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **A**

For a coding error, it would be nice to invent an associated signal name which is used to increment the clause 45 counter described in clause 45, p105.

SuggestedRemedy

Invent a name and use here. Also use in Clause 45, aids in text searches.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use name "TC_coding_error".
See #1126

Cl **61** *SC* **61.2.3.3.3** *P* **347** *L* **7** # **803**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

One error condition is missing !

SuggestedRemedy

Add c): when Z (or S) is expected and a value "not Z and not S" is received.

Proposed Response *Response Status* **C**

ACCEPT.

See also #1126

Cl **61** *SC* **61.2.3.3.4** *P* **347** *L* **54** # **804**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

"The value of Ck inserted would be equal to the stage number…" is wrong.

SuggestedRemedy

Change to "The value of k would be equal…".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change to "The value of Ck inserted would be such that k is equal to the stage number . . . "

Cl **61** *SC* **61.2.3.3.4** *P* **348** *L* **13** # **805**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

Make "R" more concrete, as the definition of line 5 (0x00-0xFF) leaves no room for "all other values"

SuggestedRemedy

Z (or S) expected, received a value "not Z and not S"

Alternatively, remove line 13.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete line 5; these are not "control character values"

Cl **61** *SC* **61.2.3.3.4** *P* **348** *L* **21** # **295**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **A**

The "should" statement is too
cross reference is to to PMA link

SuggestedRemedy

Reference must be to PCS link status, not PMA status
Change "should" to "shall"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Current text:
"If the a(ß)-interface requests transmit data while the link_status register is 0b (i.e., the link is down, but the PMA is not aware of this), the TPS-TC should transmit only idles. The link_status register is defined in 45.2.1.11.3"

Unclear how the a(ß)-interface "requests" data (other than clock and osync signals running). Changes here should align with any changes in 45.2.1.11.3.

New text:
"If PMA/PMD link status is not Up (i.e., either Down or Initializing), the TPS-TC shall transmit only All Idle codewords. The PMA/PMD link status is defined in 45.2.1.11.3"
Editor has to ensure consistency with new state diagrams.

Cl **61** *SC* **61.2.3.3.5** *P* **348** *L* **23** # **382**

Thomas Dineen — Dineen Consulting

Comment Type **TR** *Comment Status* **A**

I am receiving an increasing number of questions from customers which indicate a certain amount of confusion about the implementation of CRC functions and issues of bit ordering.

To assist in clearing up this confusion I am requesting that an informative annex be added to this clause which includes at least three compliant example frames with the associated correct CRC (FCS) value.

These frames will serve as divining rod frames which an implementor can quickly use to verify the integrity of his CRC implementation and thus achieve early inter operability.

Originally this comment was submitted at Task Group ballot and rejected. However some of the comments which arose during the debate raised my interest!

One member asserted that there was no need to include the suggested annex because the test vectors in question were available via the UNH-IOL Test Laboratory. So I recently investigated this avenue of thought.

In a response to my E-mail request of 08/29 Mr. Gerard Nadeau, Consortium Manager of UNH/IOL (grn@iol.unh.edu) sent the following:

"We don't have test vectors. When we test a MAC we are testing it in a system with an IP stack and use Pings and ARPs to stimulate the MAC and generate responses. Also our systems use scripts that would be of no use to you as they are proprietary."

So the UNH-IOL materials are proprietary and thus not available to all implementors!

Another member suggested that instead of adding a simple annex we should more properly generate a Conformance Specification. But to take this route, seems to me, to be a lot of extra and unnecessary work for what could be in essence, no more than a few pages added to the document in the form of an annex. I would also note that development of a Conformance Document would probably require a PAR or at least an amendment of the IEEE 802.3ah PAR which would be a time consuming process. Clearly the suggestion of a conformance document was intended to raise the bar of difficulty high enough to kill the original comment.

SuggestedRemedy

To assist in clearing up this confusion I am requesting that an informative annex be added to this clause which includes one to three compliant example frames with the associated correct CRC (FCS) value. The example frames should include the required scrambling function. Examples should be provided for both the 2BASE-TL and 10PASS-TS cases.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Commenter accepts the existing Figure 61-18.

See #865 & #1126

Cl **61** *SC* **61.2.3.3.5** *P* **348** *L* **23** # **296**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **R**

in order to not violate layering, need one and one CRC per PCS, not multiple.

SuggestedRemedy

To maintain the independence of layering, provide only one CRC for the PCS layer.
Scrub Clause for other cases where the PCS capability is dependent on type of lower layer and remove. For example, buffer size associated with loop agg.

Proposed Response *Response Status* **C**

REJECT.

The a(ß)-interface signal PMA_PMD_type was defined specifically to address this issue, and preserve layering.
There is no difference in buffer size associated with loop aggregation anymore.

Cl **61** *SC* **61.2.3.3.6** *P* **349** *L* **24** # **1198**

Law, David — 3Com

Comment Type **E** *Comment Status* **A**

Is this encoding scheme going to be called '64Byte/65Byte' as it is here or '64B/65B' as in subclause 61.2.3.3.3.

SuggestedRemedy

Choose either '64Byte/65Byte' or '64B/65B' and then do a search and replace for the other.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See also #12. Change to "64/65-octet"

Cl **61** *SC* **61.2.3.3.6** *P* **350** *L* **3** # **859**

Kimpe, Marc — Adtran

Comment Type **T** *Comment Status* **A**

We suggest to clearly spell out the ordering & computation of the bits to avoid potential confusion.

SuggestedRemedy

Add a sentence after line 3 of page 350.
"In transmitting and calculating the TC-CRC and scrambler, the bytes at the gamma interface are processed LSB first.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.2.3.3.8** *P* **352** *L* **3** # **1126**

Law, David 3Com

Comment Type **TR** *Comment Status* **A**

I don't believe that this subclause fully specify the behavior of the 64B65B receiver in certain cases. For example what happens to a fragment if after a SOF, at some point the Sync Byte != 0F or F0. To clarify this and to ensure this and the equivalent Transmit function are fully specified add a State Diagram for both the Transmit (61.2.3.3.4) and Receive (61.2.3.3.8) functions.

I don't believe that adding additional 'shall' sentences in text is the best approach. Subclause 1.2.1, in combination with subclause 21.5, already clearly defines how State Diagrams are written in IEEE P802.3ah as referenced by subclause 56.2. State Diagrams are provided in equivalent cases for 4B5B (Figure 24-11), 8B10B (Figure 36-7), and 64B66B (Figure 49-15) and are very familiar to may participants in 802.3. Most importantly there is a clear statement in subclause 1.2.1 that states that 'The state diagrams contain the authoritative statement of the functions they depict; when apparent conflicts between descriptive text and state diagrams arise, the state diagrams are to take precedence. This does not override, however, any explicit description in the text that has no parallel in the state diagrams.'. This allows the text to simply be a explanation of the State Diagram.

I would be very happy to assist with generating these State Diagrams.

SuggestedRemedy

Add a State Diagram for both the Transmit (61.2.3.3.4) and Receive (61.2.3.3.8) functions.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Note in the example noted in the comment, receiver moves from state Synced to "FreeWheelSyncTrue - count to 4"]

Proposed material in PCS_diagrams.pdf. In receive state diagram, add arrow from space into LOSS_OF_SYNC2 (initial condition). To be further edited by Editor and commenter. To be brought back before STF prior to sign-off.

Cl **61** *SC* **61.2.3.3.8** *P* **352** *L* **4** # **807**

Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**

Typo: "TC_" missing

SuggestedRemedy

change to "TC_Synchronized"

Proposed Response *Response Status* **C**

ACCEPT.

See #298

Cl **61** *SC* **61.2.3.3.8** *P* **352** *L* **4** # **298**

Tom Mathey Independent

Comment Type **E** *Comment Status* **A**

use complete name for synchronized

SuggestedRemedy

TC_synchronized

Proposed Response *Response Status* **C**

ACCEPT.

See #807

Cl **61** *SC* **61.2.3.3.9** *P* **352** *L* **11** # **299**

Tom Mathey Independent

Comment Type **T** *Comment Status* **A**

this is an excellent place to rename subclause as PCS management, promote up a level, and map all PCS signals to the clause 45 names with 3.x.y registers and bits called out.

SuggestedRemedy

Implement

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement comment; also identify missing registers that correspond to those which Clause 45 defines access to.

Cl **61** *SC* **61.3** *P* **352** *L* **26** # **811**

Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A**

For G.HS, the exchange of PMI_aggregate_register (32 bit) is missing.
See also Table 61-7: there it is included.

SuggestedRemedy

Add according Level-2 and Level-3 code points

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See resolution of comments #947 and #949.

Cl **61** *SC* **61.3** *P* **352** *L* **26** # **300**

Tom Mathey Independent

Comment Type **T** *Comment Status* **R**

Aid the reader. Someplace in this clause, provide a table which maps the clause 45 1.y.z or 3.x.y registers to the corresponding Spar, Npar registers. In addition, verify that all such Spar/Npar have a corresponding 3.x.y assignment.

SuggestedRemedy

Implement a table to map clause 46 registers to Spar, Npar registers.

Proposed Response *Response Status* **C**

REJECT.
Clause 45 is that table. Editor to verify if naming of SPar and NPar bits is consistent with naming of Clause 45 registers.

Cl **61** *SC* **61.3.1** *P* **352** *L* **33** # **301**

Tom Mathey Independent

Comment Type **E** *Comment Status* **R**

Options are the dark force. Resist.

SuggestedRemedy

Remove all options from Clause 61,62, and 63. Operating modes are ok, but no options allowed

Proposed Response *Response Status* **C**

REJECT.
ITU-T Recommendation G.994.1, which is a normative reference for this Clause, contains certain options. By specifying which of these options are to be used by 2BASE-TL and 10PASS-TS, they cease to be optional in EFM.

Cl **61** *SC* **61.3.1.1** *P* **353** *L* **4** # **302**

Tom Mathey Independent

Comment Type **T** *Comment Status* **R**

no half-duplex below the MAC

SuggestedRemedy

Remove text

Proposed Response *Response Status* **C**

REJECT.
ITU-T Recommendation G.994.1, which is a normative reference for this Clause, provides support for both duplex and half-duplex transmission modes; this pertains to the exchange of handshake messages. In 10PASS-TS, handshake messages are exchanged in full-duplex mode (as is the case in VDSL). In 2BASE-TL, handshake messages are exchanged in half-duplex mode (as is the case in SHDSL). However, both 10PASS-TS and 2BASE-TL support only full-duplex data transmission.

Cl **61** *SC* **61.3.12** *P* **390** *L* **11** # **947**

O'Mahony, Barry Intel Corp.

Comment Type **TR** *Comment Status* **A**

Description of how CPE's PMI_Aggregate_register is remotely access is missing.

SuggestedRemedy

See suggested text in omahony_3_0903.pdf

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.3.12** *P* **390** *L* **21** # **746**

Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A**

The '-R' device sends in its CLR message the contents of the remote_discovery_register (not the PMI aggregation register).

This applies to the entire section 61.3.12

SuggestedRemedy

Replace the PMI aggregation register with remote_discovery_register.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.3.12** *P* **390** *L* **47** # **748**

Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A**

According to G.SHDSL, activation may only take 10 seconds.

SuggestedRemedy

Either consider these 10 seconds for the entire activation including programming of PAF or add a note that these 10 seconds are not mandatory for EFM application.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add "NOTE - A G.994.1 session including configuration of the PMI Aggregation Function may violate the maximum activation time imposed on G.SHDSL by ITU-T Recommendation G.991.2."

Cl **61** *SC* **61.3.12** *P* **390** *L* **47** # **747**
Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A**
Description of how PMI aggregate register will be programmed missing

SuggestedRemedy
Add respective description

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
See resolution of comment #947.

Cl **61** *SC* **61.3.5.1.2** *P* **354** *L* **32** # **303**
Tom Mathey Independent

Comment Type **E** *Comment Status* **A**
copy-paste w/o edits.

SuggestedRemedy
61-12 s/b 61-14

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Substitute "61-12" with "61-14" as suggested by commenter.
Remove spurious word "Reference" before "Table 61-11".

Cl **61** *SC* **61.3.8.7.1** *P* **359** *L* **10** # **949**
O'Mahony, Barry Intel Corp.

Comment Type **TR** *Comment Status* **A**
Changes needed to codepoint tables to match changes to Clause 45 and 61.

SuggestedRemedy
Add bits for PMI_Aggregate_register. Change "PAF Available" bit to "PAF-O Available" bit.

Also, see if octets can be consolidated, since SCM option is no longer present. As a result, some bytes are now mostly empty.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **61** *SC* **61.3.8.7.3** *P* **362** *L* **2** # **1121**
Law, David 3Com

Comment Type **E** *Comment Status* **A**
Typo, two periods.

SuggestedRemedy
See comment.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **61** *SC* **61.3.8.7.3** *P* **368** *L* **1** # **878**
Kimpe, Marc Adtran

Comment Type **T** *Comment Status* **R**
A recent addition in SHDSL has been the version number exchange. If for some reasons, modifications to the specs have to be made, it allows a unit to figure out whether the other end supports it or not. See T1E1.4/2003-198R1

SuggestedRemedy
Add a version number NPAR(2) and NPAR(3)
see kimpe_2_0903 for the new tables.

Proposed Response *Response Status* **C**
REJECT.
There are no "versions" in IEEE Std 802.3. A PHY with different capabilities from 2BASE-TL as specified in this document will be a different port type. If the new port type is intended for use with the Clause 61 PCS, it will need a new SPar(1) handshake codepoint.

Cl **61** *SC* **61.3.8.7.3** *P* **368** *L* **12** # **877**
Kimpe, Marc Adtran

Comment Type **TR** *Comment Status* **A**
The "Diagnostic mode" parameter went MIA in Table 61-51. See T1E1.4/2003-198R1

SuggestedRemedy
Add "Diagnostic Mode" on the third bit and add the same "b" footnote as bits 1 and 2.
see kimpe_2_0903 for the new tables.

Proposed Response *Response Status* **C**
ACCEPT.
Add the bit with the appropriate "out-of-scope" footnote.

Cl **61** *SC* **61.3.8.7.3** *P* **368** *L* **33** # **879**

Kimpe, Marc Adtran

Comment Type **TR** *Comment Status* **A**

The PMMS DN & UP rates fields went MIA. See T1E1.4/2003-198R1

SuggestedRemedy

Add the fields back in to Table 61-52
see kimpe_2_0903 for the new tables

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Table 61-78 through Table 61-103 contain the base data rate fields, but not the training rates. Update according to kimpe_2_0903.pdf.

Cl **61** *SC* **61.3.8.7.3** *P* **369** *L* **3** # **880**

Kimpe, Marc Adtran

Comment Type **TR** *Comment Status* **A**

A more elegant way to pass the PMMS rates was defined in the approved T1E1.4 & ITU text of e-shdsl. We propose to include it in the EFM document to keep all specs as aligned as possible. See T1E1.4/2003-198R1

SuggestedRemedy

Rather than have 2 fixed ranges, allow a variable number of ranges to be passed.
For each SPar(2), a variable number j of (min/max/step) 7-bit base rates need to be added at the NPar(3) level for the upstream and downstream PMMS rates.
See kimpe_2_0903 for the new tables.

Proposed Response *Response Status* **C**

ACCEPT.
See also comment #875.

Cl **61** *SC* **61.3.8.7.4** *P* **367** *L* **14** # **876**

Kimpe, Marc Adtran

Comment Type **T** *Comment Status* **A**

A number of fields that were defined in the ITU documents were replaced by "Reserved for allocation by IEEE 802.3" fields. There are about 40 or 50 of those. Altough they carry no info, they will need to be sent. We propose to concatenate some of those fields to reduce their number.

SuggestedRemedy

see kimpe_2_0903 for the new tables

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The EFM draft is now in Working Group Ballot, and we believe it is technically complete. Therefore, there should be no more need to assign further codepoints. The Editor shall remove "reserved" fields in the handshake tree wherever possible.

Cl **61** *SC* **61.3.8.7.4** *P* **367** *L* **16** # **875**

Kimpe, Marc Adtran

Comment Type **TR** *Comment Status* **A**

A more elegant way to pass the training rates was defined in the approved T1E1.4 & ITU text of e-shdsl. We propose to include it in the EFM document to keep all specs as aligned as possible. See T1E1.4/2003-198R1

SuggestedRemedy

Rather than have 2 fixed ranges, allow a variable number of ranges to be passed.
One needs to add 4 SPar(2) bits
- DN training rates - 16-TCPAM
- DN training rates - 32-TCPAM
- UP training rates - 16-TCPAM
- UP training rates - 32-TCPAM

For each SPar(2), a variable number j of (min/max/step) 7-bit base rates need to be added at the NPar(3) level.
See kimpe_2_0903 for the new tables.

Proposed Response *Response Status* **C**

ACCEPT.
See also comment #880.

Cl **61** *SC* **61.3.8.7.4** *P* **367** *L* **17** # **808**

Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**

"Tables 61-51 to 61-53" is wrong.

SuggestedRemedy

change to "Tables 61-50 to 61-53"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.3.8.7.4** *P* **367** *L* **34** # **809**

Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**

PAF Available, PAF Enable (line 36): Underscore missing.

SuggestedRemedy

Add underscore.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.3.8.7.5** *P* **377** *L* **1** # **881**

Kimpe, Marc Adtran

Comment Type **TR** *Comment Status* **A**

The PMMS codepoints should be partitioned in the same way as the original G.shdsl. There should be a PMMS parameter and a PMMS rate SPAR(2) each for the upstream and downstream (see other comment to that effect). In addition, the PMMS parameters codepoints should be grouped together and the PMMS rates should be grouped together.

SuggestedRemedy

Move Table 61-78 & 61-79 after table 61-86. & Table 61-91 and 61-92 after table 61-99.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.3.8.7.6** *P* **387** *L* **14** # **810**

Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A**

only "clear if same" defined, "set if clear" and "get" code points are missing

SuggestedRemedy

define "set if clear" and "get" code points

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See resolution of comment #947.
Add footnote on "Clear if Same" in the remote discovery register Spar definitions (61-110): "NOTE - If this bit is 0 b, a Set-If-Clear operation is performed, if it is 1 b, a Clear-If-Same operation is performed (see 61.3.12)."

Cl **61** *SC* **61.3.8.8** *P* **389** *L* **19** # **1232**

Beck, Michael Alcatel

Comment Type **E** *Comment Status* **A**

typo: "informtion"

SuggestedRemedy

replace with: "information"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.6** *P* **391** *L* **16** # **908**

Frazier, Howard SWI

Comment Type **TR** *Comment Status* **A**

The sentence beginning with the words "EFM Copper ports do not..." is not factually correct. PAUSE can operate with links of much longer latency than that encountered on EFM copper links. The reason that PAUSE can't be supported on EFM copper links can be found in 31B.1, which states:

PAUSE frames shall only be sent by DTEs configured to the full duplex mode of operation.

Since the rate control method used for EFM copper PHYs requires that the MAC be configured to the half-duplex mode of operation, PAUSE frame transmission is precluded by this requirement alone, regardless of anything else.

SuggestedRemedy

Rewrite the sentence to read:

PAUSE frame transmission via EFM Copper PHYs is therefore precluded, since the requirements of 31B.1 restrict the transmission of PAUSE frames to DTEs configured to the full duplex mode of operation.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **61.6** *P* **391** *L* **17** # **304**

Tom Mathey Independent

Comment Type **E** *Comment Status* **A**

If one believes the chairperson and editor of clause 31 MAC Control, then the management variable assigned to link lengths (vs delays within the MAC) is sufficient to characterize a link the circumference of the earth.

SuggestedRemedy

Strike incorrect sentence and replace with words about rate control state diagram.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See resolution of comment #908.

Cl **61** *SC* **Figure 61-1** *P* **321** *L* **17** # **1010**

Thompson, Geoff — Nortel

Comment Type **E** *Comment Status* **A**

Obsolete style of diagram refers to "LLC - LOGICAL LINK CONTROL" as the exclusive MAC CLIENT for 802.3

SuggestedRemedy

Redit to conform to current style (refer to 1000BASE-T diagram)
"LLC - LOGICAL LINK CONTROL" should be "LLC - LOGICAL LINK CONTROL OR ORHER MAC CLIENT"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Figure 61-10** *P* **333** *L* **47** # **1189**

Law, David — 3Com

Comment Type **E** *Comment Status* **A**

The title of this figure is 'Fragmentation header format' yet it also shows a field called 'Fragment Data' which I suspect is not part of the Fragmentation header.

SuggestedRemedy

Suggest that the 'Fragment Data' field be removed from this Figure as I don't think it is part of the Fragmentation header.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change caption to "Fragment format".

Cl **61** *SC* **Figure 61-11** *P* **335** *L* **32** # **734**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

Box "increment expected fragment"
(expectedFragmentSequenceNumber<=expectedFragmentSequenceNumber+1)mod(2^14) missing

SuggestedRemedy

Add modulo operation to the assignment given in the box.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Figure 61-11** *P* **335** *L* **6** # **281**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **A**

1: use the real variable name TC_synchronized
2: if the text "Link Up" means TC_synchronized = TRUE, then the unconditional entry in state "initializing" will always happen when the link is up, no exit is possible.

SuggestedRemedy

Harmonize text with intent.
Add a few words about power on, reset, begin, etc. in style of all other 802.3 projects.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
License is granted to Editor to write text to clarify begin/reset conditions.

Cl **61** *SC* **Figure 61-19** *P* **351** *L* **2** # **743**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **R**

Condition for loosing synchronization (5 missed sync in a row) and regaining synchronization (1 correct sync) are not identical.

SuggestedRemedy

Make the conditions for leaving and entering the sync state identical.
5 sync in a row should be neccessary to regain synchronization.

Proposed Response *Response Status* **C**

REJECT.
The system is intentionally biased towards keeping synchronization.

Cl **61** *SC* **Figure 61-19** *P* **351** *L* **7** # **672**

Daines, Kevin — World Wide Packets

Comment Type **T** *Comment Status* **A**

This state diagram doesn't follow long-standing conventions. The state names are not capitalized. Also, the figure title is not properly capitalized.

See 21.5 and 1.2.1 for more state diagram notation conventions.

SuggestedRemedy

Fix 61-19.

Note: consistent capitalization of TRUE, capitalized state names, proper capitalization of figure name.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Figure 61-3** *P* **325** *L* **25** # **778**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **A**

in figure 61-3: Adress 1.1 accesses PMA1 and PMD1, not PMA0 and PMD0

SuggestedRemedy

change PMA0 to PMA1, change PMD0 tp PMD1

Proposed Response *Response Status* **C**

ACCEPT.
To be consistent with numbering in other figures and registers, the first element of a set shall be numbered '0'.
Change Address 1.1 to Address 0.1.
Change PMI 1 to PMI 0.

Cl **61** *SC* **Figure 61-4** *P* **326** *L* **28** # **272**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **A**

Figures 61-4 and 61-5 should be an expansion of Figure 61-2.

SuggestedRemedy

In Fig 61-4 and 61-5, show the flexible cross connect and encapsulation layers

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Figure 61-5** *P* **326** *L* **52** # **273**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **R**

32 wire pairs with pairs of 4-to-1 connections results in 8 available sets. These sets are available for attachment to 16 MII and MACs. Thus 8 MII and MACs are unattached. Figure shows no unattached MACs.

SuggestedRemedy

Show at least one block labeled MAC-x with an arrow terminating at the MII dashed line.

Proposed Response *Response Status* **C**

REJECT.
The figure shows that each of the 8 available sets can be used by either of 2 PCS instances. A total of 16 PCS instances are connected to the 32 PMIs. Each PCS instance has an associated MAC. It is clear from the text that only 8 PCS instances (and therefore only 8 MACs) can be active at the same time in this setup.

Cl **61** *SC* **Figure 61-7** *P* **331** *L* **35** # **670**

Daines, Kevin — World Wide Packets

Comment Type **T** *Comment Status* **A**

This state diagram doesn't follow long-standing conventions. For instance, "if" is lower-case and "THEN" is missing altogether.

See 21.5 and 1.2.1 for more state diagram notation conventions.

SuggestedRemedy

In state TX_EN_ACTIVE, change

"if crs_and_tx_en_infer_col
 crs_tx <= FALSE
 else
 crs_tx <= TRUE"

to read:
"IF (crs_and_tx_en_infer_col)
 THEN crs_tx <= FALSE
 ELSE crs_tx <= TRUE"

Note: parentheses, capital IF, capital ELSE, usage of ELSE. The capitalization of "TRUE" and "FALSE" should at least be consistent within the clause.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Figure 61-8** *P* **332** *L* **1** # **1124**

Law, David — 3Com

Comment Type **T** *Comment Status* **A**

The state machines in Figures 61-8 seem to be incomplete. The MII output RX_DV is never set to any value in Figure 61-7 although it is used as an input.

SuggestedRemedy

Please add control of RX_DV to the state machine.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Figure 61-8** *P* **332** *L* **14** # **671**

Daines, Kevin World Wide Packets

Comment Type **T** *Comment Status* **A**

This state diagram doesn't follow long-standing conventions. For instance, "if" is lower-case and "THEN" is missing altogether.

See 21.5 and 1.2.1 for more state diagram notation conventions.

SuggestedRemedy

TX_EN_ACTIVE state needs to be fixed.

Note: parentheses, capital IF, capital ELSE, usage of ELSE

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Figure 61-8** *P* **332** *L* **15** # **277**

Tom Mathey Independent

Comment Type **T** *Comment Status* **A**

line 15: variable crs_rx is already FALSE when this state is entered
line 35: variable crs_rx is already TRUE when this state is entered

SuggestedRemedy

line 15: remove text for crs_rx <= FALSE
line 35: remove text for crs_rx <= TRUE

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Table 61-1** *P* **327** *L* **10** # **779**

Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**

table 61-1, 61-2, 61-3: in the last line of each table, not only register 45 must be referenced, but 45/46

SuggestedRemedy

add register 46

Proposed Response *Response Status* **C**

ACCEPT.
See also comment #274.

Cl **61** *SC* **Table 61-1** *P* **327** *L* **10** # **274**

Tom Mathey Independent

Comment Type **E** *Comment Status* **A**

MMD register s/b 15.3.45/46.

SuggestedRemedy

At line 10, 22, and 23: add text "/46"

Proposed Response *Response Status* **C**

ACCEPT.
See also comment #779.

Cl **61** *SC* **Table 61-10** *P* **348** *L* **13** # **297**

Tom Mathey Independent

Comment Type **T** *Comment Status* **A**

When a receive path detects an error in the sync length byte, then the remaining length of the associated frame is unknown. The text "ignore and skip to next codeword" is not sufficient. Ignoring has the possibility of concatenating two payloads together. Perhaps two maximum size frames, which will give a buffer sized for just over one maximum frame fits and conniptions and wreak havoc with the logic which runs the buffer/fifo.

The already received payload must be marked with receive error, passed on up to the next layer, and an error recovery process started. The error recovery is necessary since there are several possible count values and the 63 bytes to the next sync might include a start of frame code point for another frame. This next frame is also corrupted. The following analysis is considered correct even if count descriptions could be collapsed into a more simplified form.

Count value 0: no more payload bytes are expected. Logic is not able to identify and another idle, sof sequence might happen. This next frame can not be detected and is considered corrupted. Mark with receive error.

Count value 1 to 62: some number of payload bytes are expected. Logic is not able to identify and another idle, sof sequence might happen. This next frame can not be detected and is considered corrupted. Mark with receive error.

Count value 63: All of the 63 bytes are payload. Logic is not able to identify.

An analysis of errors in the sync byte has not yet been performed. While left to the student as an exercise, the following description should also cover sync byte errors.

Note that the following remedy requires that the hex values for idle and start of frame be different from any valid Cn value. This is the case now that Draft 2.0 p348 line 11 in Table 61-10 has changed the start of frame code point from 0xC0 to 0x50. Thank you Barry.

SuggestedRemedy

Add new subclause just after existing 61.2.3.3.8

61.2.3.3.x Receive error detection

Errors in either the sync byte (0xF0, 0x0F) or the sync length byte (Cn) are coding violations. The associated MMD counter is incremented. As the length of the incoming payload is now lost, an error recovery process is started using the following steps:

a) Pass the already received payload up to the next layer and mark with receive error. The CRC error counter is not incremented.

b) Discard the next set of bytes by waiting for the next expected sync byte.

c) If the next sync byte is 0xF0 followed by an idle character, then the discarded bytes did not included a start of frame to payload sequence. Continue on as in a non-error operation.

d) If the next sync byte is 0xF0 followed by a valid Cn character, then the discarded bytes did include a start of frame to payload sequence. Mark this payload with receive error and continue on as in a non-error operation.

e) If the next sync byte is 0xF0 followed by a valid start of frame character, then the discarded bytes did not include a start of frame code point. Continue on as in a non-errored operation.

f) If the next sync byte is 0x0F, then the discarded bytes did include a start of frame to payload sequence or continued the previous payload. Mark this payload with receive error and continue on as in a non-error operation.

g) If the next sync byte is 0xF0 followed by an invalid Cn character, then proceed to step b).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The Editor will capture the spirit of the suggested remedy in the transmit/receive state diagrams for TC.

Cl **61** *SC* **Table 61-10** *P* **348** *L* **14** # **806**

Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **R**

Sync Bytes should be added here again for clarity

SuggestedRemedy

Add "Sync: 0F, F0"

Proposed Response *Response Status* **C**

REJECT.
To avoid ambiguities and to facilitate future maintenance of the document, normative definitions should appear only once.

Cl **61** *SC* **Table 61-10** *P* **348** *L* **8** # **1199**

Law, David 3Com

Comment Type **T** *Comment Status* **A**

In the fourth row 'End of frame ...', column two 'Character', the notation Cn, n=0-63 is used and then in column three the notation C0, C1, C2 ... is used. In table 61-9 the notation Ck is found. Looking at subclause 61.2.3.3.3 uses Cn, subclause 61.2.3.3.4 uses Ck. I'm not sure why there is a difference and wonder if this is rally intended.

SuggestedRemedy

Use a consistent terminology if possible.

Proposed Response *Response Status* **C**

ACCEPT.
The Editor shall use C subscript k throughout the Clause.

Cl **61** *SC* **Table 61-111** *P* **387** *L* **34** # **936**

Cravens, George Mindspeed

Comment Type **T** *Comment Status* **A**

The Remote discovery register bits are numbered 47:0 in clause 45.2.3.23 (Table 45-208). Fix the numbering in Tables 61-111 through 61-118.

SuggestedRemedy

Change the bit numbering of the Remote Discovery Register to match Table 45-208 (i.e. 47:0). This is done by changing the bit numbering in tables 61-111 through 61-118 (for example, in table 61-41, new text should be bits 47 to 43).

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Table 61-17** *P* **357** *L* **1** # **909**

Frazier, Howard SWI

Comment Type **TR** *Comment Status* **R**

Lots of tables with lots of x's. Some of the tables have nothing but x's.
How is a table of parameter values that are all "x" helpful?

SuggestedRemedy

Start by collapsing these tables. We don't need to span the entire page with tables filled with x's. The information content seems to be in the table title and in the header row, and in the second column. Page 362 provides a glaring example. 4 identical tables are presented, with differences so subtle that they are very hard to identify. If this page was collapsed into one table, with the redundant information removed, it would be much easier to identify the relevant differences.

Proposed Response *Response Status* **C**

REJECT.
The style is copied from ITU-T Recommendation G.994.1, which is a normative reference for this Clause. The notation is explained in subclause 9.2 of ITU-T Recommendation G.994.1. The same notation is used here, because we are listing exceptions and additions to the referenced document. Note that using this notation will make the Clause more easily understandable to readers familiar with G.994.1.
See also comments #509 and #510.

Cl **61** *SC* **Table 61-41** *P* **365** *L* **31** # **935**

Cravens, George Mindspeed

Comment Type **T** *Comment Status* **A**

The Remote discovery register bits are numbered 47:0 in clause 45.2.3.23 (Table 45-208). Fix the numbering in Tables 61-41 through 61-48.

SuggestedRemedy

Change the bit numbering of the Remote Discovery Register to match Table 45-208 (i.e. 47:0). This is done by changing the bit numbering in tables 61-41 through 61-48 (for example, in table 61-41, new text should be bits 47 to 43).

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Table 61-50** *P* **367** *L* **30** # **744**

Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **R**

Unclear how band A/B operation and max/min 1/2 (see Table 61-56) are related to each other.

SuggestedRemedy

Rename band a operation to band 1 and band b operation to band 2.

Proposed Response *Response Status* **C**

REJECT.
There is no relation intended between band A/B operation and the two sets of min/max parameters.

Cl **61** *SC* **Table 61-53** *P* **369** *L* **20** # **745**

Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A**

Footnote 'a': condition "2BASE-TL PAF enable is set to 0" is not correct.
According to chapter 61.2.2.7.3, page 339, line 28, the "PAF enable" of the '-R' device is writable from the '-O' device.

SuggestedRemedy

PMI registration discovery for '-R' device should only set to '0' if "PAF available"==0.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See resolution of comments #949 and #950

Specifically, it is proposed that the PAF_Available bit be redefined as the “PAF-O” bit. This bit is used to support the
Remote PAF Supported bit in the CPE (see 45.2.3.18.5). PAF_enable is used to indicate to the CPE that PAF is enabled.

Change footnote to:
"This bit shall be set to 0 b if 2BASE-TL PAF Enable NPar(2) bit is set to 0 b."

Cl **61** *SC* **Table 61-6** *P* **328** *L* **25** # **730**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**

PMI aggregate register 1.3.47/48 shows only 1 bit set.

SuggestedRemedy

Add a note that PAF has to be done even if only 1 bit is set.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add a note that PAF has to be done when PAF_enable is set, even if only 1 bit is set in the PMI_aggregate_register.

Cl **61** *SC* **Table 61-7** *P* **342** *L* **1** # **290**
Tom Mathey Independent

Comment Type **T** *Comment Status* **A**

Sequence is understandable only to person who wrote the text. There never was a supporting presentation presented to the group.

SuggestedRemedy

Provide a complete set of timing diagrams

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add a reference to the example in informative Annex 61A.
See also comment #947

Cl **61** *SC* **Table 61-7** *P* **342** *L* **1** # **1196**
Law, David 3Com

Comment Type **E** *Comment Status* **A**

Suggest that a footnote be attached to the text 'OAM' in the title, and also to the text 'OAM' found on line 42 of page 341, making it clear that OAM is not Clause 57 OAM. The exisitn footnote on page 342 could be used.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Table 61-7** *P* **342** *L* **10** # **798**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**

adapt register/signal-names

also applies to line 19

SuggestedRemedy

adapt names *_aggregation-> *_aggregate

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61** *SC* **Table 61-7** *P* **342** *L* **7** # **796**
Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A**

Signal PCS_link_state: describe condition more exactly

SuggestedRemedy

reference to signal TC_synchronized

Proposed Response *Response Status* **C**

ACCEPT.
Resolution of comment #1237 may apply.

Cl **61** *SC* **Table 61-7** *P* **342** *L* **9** # **797**
Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A**

All signals besides "PCS_link_state" are only defined in CPE and only during G.Hs.

SuggestedRemedy

Change footnote to:

Defined only if PAF is implemented, only in '-R' devices and only during G.handshake.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change footnote to:
"Defined only if PAF is implemented, only in '-R' devices and used only during G.handshake. For the '-O' device, pervasive access by management may be used to accomplish this." (Editor has license)

Cl **61** *SC* **Table 61-8** *P* **343** *L* **10** # **292**

Tom Mathey Independent

Comment Type **E** *Comment Status* **R**

size

SuggestedRemedy

Size should be a 1 bit, not a 8 bit

Proposed Response *Response Status* **C**

REJECT.
The PMA_PMD_type signal was chosen to be this size to allow future PMA/PMDs to reuse the Clause 61 alpha/beta-interface.

Cl **61** *SC* **Table 61-8** *P* **343** *L* **10** # **291**

Tom Mathey Independent

Comment Type **E** *Comment Status* **A**

p84 line 7 has 2BASE as logic 1
p343 line 10 has 2BASE as logic 0

SuggestedRemedy

Harmonize

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Values in Table 61-8 shall be updated to match those in "10P/2B PMA control register".
Editor of Clause 45 is requested to update size of "PMA/PMD type selection field" to match PMA_PMD_type signal in Table 61-8.

Cl **61** *SC* **Table 61-9** *P* **346** *L* **36** # **802**

Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**

according to numeration a to e between lines 9 and 19, the lines of the table are in the order a, b, d, e, c.

SuggestedRemedy

rearrange lines of table

Proposed Response *Response Status* **C**

ACCEPT.

Cl **61A** *SC* *P* *L* # **865**

Kimpe, Marc Adtran

Comment Type **T** *Comment Status* **A**

The 64/65 encapsulation is new to this document. In one of our previous comments, we still spotted a typo for one of the values, in addition members of our team had to confered quite a bit to come to agreements on what needs to be sent for a variety of cases. In order to increase the likeliness that everyone comes up with the same interpretation, we propose to include a C program that simulates the TPS-TC and includes a set of corner cases. Everyone would then be able to check the result of their TPS-TC output against the program.

SuggestedRemedy

Enclose a simple 'C' program and it's output logfile in a new section of 61A. The program is a simulation of the SHDSL EFM TC transmitter. The logfile contains a valid EFM bitstream reading left to right and then top to bottom. The stream includes an assortment of corner test cases. The program and output file is provided in the associated file kimpe_1_0309

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The 'C' program shall be inserted in informative Annex 61A as an example, using formating instructions in comment #545.
Ambiguities or errors in the description of the encapsulation method shall be fixed by means of normative text or state diagrams, as decided by the Copper Sub Task Force in resolution of comment #1126.

Cl **61A** *SC* *P* **525** *L* **5** # **542**

James, David JGG

Comment Type **E** *Comment Status* **A**

Excessive capitalization.

SuggestedRemedy

Change:

EFM Copper Examples
==>
EFM copper examples

61A.2 Aggregation Discovery Example
==>
61A.2 Aggregation discovery example

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
"EFM Copper" and "Aggregation Discovery" are used as proper names, and shall be capitalized as shown. There shall be no capital 'E' in "example" or "examples".

Cl **62** *SC* *P* **401** *L* **5** # **512**

James, David JGG

Comment Type **T** *Comment Status* **A**

Improper field alignment.

SuggestedRemedy

Center the straddled fields, which represent new headings.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Center the straddled fields, which represent new headings, and use bold typeface.

Cl **62** *SC* *P* **401** *L* **5** # **513**

James, David JGG

Comment Type **T** *Comment Status* **A**

Excess capitalization.

SuggestedRemedy

Change:
Data Signals ==> Data signals
Synchronization Signals ==> Synchronization signals

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62** *SC* *P* **401** *L* **54** # **514**

James, David JGG

Comment Type **T** *Comment Status* **A**

Starting a left-justified sentence with a number is very confusing, since that is also how numbered definitions and subclauses start.

SuggestedRemedy

Change:
9.3.1 of ... is replaced by
Replace 9.3.1 of ... by

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62** *SC* *P* **409** *L* **54** # **515**

James, David JGG

Comment Type **T** *Comment Status* **A**

Inconsistent state-machine notation.

SuggestedRemedy

Change:
POWER OFF ==> POWER_OFF
COLD-START ==> COLD_START
(etc.)

Here and throughout.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62** *SC* *P* **410** *L* **33** # **516**

James, David JGG

Comment Type **T** *Comment Status* **A**

Blank table rows are fonfusing.

SuggestedRemedy

Eliminate blank rows, in:
Table 62-4, Table 62-6, Table 62-8, Table 62-10.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62** *SC* *P* **419** *L* **1** # **517**

James, David JGG

Comment Type **E** *Comment Status* **A**

Excessive length subclause title, which would mandate manual table-of-contents updates to correct wrapping error, which is (in itself) prone to human errors.

SuggestedRemedy

1) Delete Physical Medium ...
2) Put nonbreaking space within Clause 62.
^ nonbreaking

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Title to remain unchanged, as content is very specific. The IEEE Staff Editor shall be asked to pay special attention to the appearance of this title in the book's Table of Contents.

Cl **62** *SC* **62.1** *P* **400** *L* **1** # **1205**

Law, David 3Com

Comment Type **T** *Comment Status* **A**

Suggest introductory text be provided. In addition a mandatory requirement to combine the 10PASS-TS PMA and PMD with a 64B65B PCS to form a PHY doesn't seem to appear anywhere else. This would be similar to text found in 100BASE-TX (Clause 25).

SuggestedRemedy

Suggest the following text be added as a paragrph under Overview 'This clause specifies the 10PASS-TS Physical Medium Attachment (PMA) and Physical Medium Dependent (PMD) for voice grade twisted-pair wiring. In order to form a complete 10PASS-TS PHY, the 10PASS-TS PMA and PMD shall be integrated with the 64B65B PCS of Clause 61, which is assumed incorporated by reference.'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
'This clause specifies the 10PASS-TS Physical Medium Attachment (PMA) and Physical Medium Dependent (PMD) for voice grade twisted-pair wiring. In order to form a complete 10PASS-TS PHY, the 10PASS-TS PMA and PMD shall be integrated with the 64/65-octet PCS of Clause 61, which is assumed incorporated by reference.'

Cl **62** *SC* **62.1.2** *P* **400** *L* **11** # **907**

Frazier, Howard SWI

Comment Type **T** *Comment Status* **A**

As used in this sentence, the word "rate" should be "ratio".
One part in 10E7 is a ratio, not a rate, as a rate would entail time.

SuggestedRemedy

Change "rate" to "ratio".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62** *SC* **62.1.4.1** *P* **400** *L* **23** # **1127**

Law, David 3Com

Comment Type **E** *Comment Status* **R**

In IEEE 802.3 terms isn't the alpha(beta) Interface actually the PMA Service Interface and the I interface the PMD service Interface.

SuggestedRemedy

Consider renaiming these interfaces as described above.

Proposed Response *Response Status* **C**

REJECT.
The "alpha(beta)"-interface and "gamma"-interface are well-known fundamental concepts in the xDSL world. We've deliberately chosen to keep these concepts and their original notation in our draft to make the relation with existing xDSL standards clear to the reader. (See also comment #504.)

Cl **62** *SC* **62.2.4.2** *P* **402** *L* **46** # **1214**

Thaler, Pat Agilent

Comment Type **T** *Comment Status* **A**

This is the first occurance but the problem is multiple places.

"Stet" is not correctly used. Stet is a technical editing word for reversing a marked deletion and not a generic term for "leave as is".

Stet means: to direct retention of (a word or passage previously ordered to be deleted or omitted from a manuscript or printer's proof) by annotating usually with the word stet.

SuggestedRemedy

One doesn't need the subclauses that only contain "stet" as they are already covered by: 62.2.4: The 10PASS-TS PMA shall comply to the requirements of MCM-VDSL Section 9.3. This statement is not exactly correct since there are some exceptions noted below so add "except as stated here" to the end of the sentence.

Similar changes need to be made to 62.3.4 and its subsections.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Replace all instances of "Stet" with "Referenced as is." Additionally, the Editor has license to modify granularity of section references.
See also comments #508, #1213 and #1215.

Cl **62** *SC* **62.2.4.3** *P* **402** *L* **51** # **825**

Tzannes, Marcos Aware

Comment Type **T** *Comment Status* **R**

T1.424 states in section 9.3.4.1 that a maximum interveaver depth of 64 is required. This contradicts the interveaving requirements in section 62.2.4.3. Also T1.424 section 9.3.4.2 is an example of a specific implementation of the interleaver and should be removed since this other implementations that meet the standard are also allowed.

SuggestedRemedy

State that a maximum interleaver depth of 64 is required. Remove the interleaving parameter requirements from section 62.2.4.3 as contained in (a) and (b) so that the maximum interleaver depth requirement is 64. Also remove reference to section 9.3.4.2 of T1.424 because it is just providing an example of a specific implementation of the interleaver.

Proposed Response *Response Status* **C**

REJECT.
62.2.4 states "Where there is conflict between specifications in MCM-VDSL and those in this standard, those of this standard shall prevail."

Cl **62** *SC* **62.2.4.5** *P* **403** *L* **18** # **1237**

Beck, Michael Alcatel

Comment Type **TR** *Comment Status* **A**

For obvious reasons, the VDSL indicator bits designed for ATM and STM are forced to 0 in 10PASS-TS. However, no new indicator bits for use by the EFM TC sublayer have been defined.

SuggestedRemedy

Define B5 of Byte #3 as "EFM TC Freewheeling", to be asserted iff state is FreeWheelSyncTrue or state is FreeWheelSyncFalse
Define B6 of Byte #4 as "EFM TC Not Synced", to be asserted iff state is Looking or state is FreeWheelSyncFalse
States refer to the state machine in Figure 61-19.
Create appropriate registers in Clause 45 to read far-end EFM TC status.
Add signals "Remote_PCS_Freewheeling" (1 bit PMA->PCS) and "Remote_PCS_NotSynced" (1 bit PMA->PCS) to the alpha(beta)-interface (Table 61-8).
Change definition of signal PCS_link_state on the gamma-interface (Table 61-7) to "Control signal asserted when link is active and framing has synchronized according to the definition in 61.2.3.3. AND Remote_PCS_NotSynced is not asserted."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Motion Beck/Langston
MOTION PASSES BY ACCLAMATION

For 10PASS-TS:
Define B5 of Byte #3 as "EFM TC Freewheeling", to be asserted iff state is FreeWheelSyncTrue or state is FreeWheelSyncFalse
Define B6 of Byte #4 as "EFM TC Not Synced", to be asserted iff state is Looking or state is FreeWheelSyncFalse
States refer to the state machine in Figure 61-19.
Create appropriate registers in Clause 45 to read far-end EFM TC status.

For 2BASE-TL:
Changes in these status bits would be transported via EOC messages.
Direct editor to define details of these EOC messages (there is a large codespace available).
Include a description of these new EOC messages in the next Q4/15 liaison.

Note that a/b signals specified in suggest remedy are also implemented.

PROPOSED ACCEPT IN PRINCIPLE. (FAIL)
Approve: 10 Don't approve: 6 Abstain: 3
Define new alternate idle bytes (X,Y,Z', ...) to be used continuously instead of Z at times when the local receive state machine is not synchronized. This would allow the other end to know that it should send only idles.

Motion to postone this comment and other scrambler comments until 16:45.
Moved: Daun Langston
Second: Scott Simon
Unanimous consent.

PROPOSED ACCEPT IN PRINCIPLE. (FAIL)
Approve: 5 Don't approve: 8 Abstain: 3
Same thing shall be done for 2BASE-TL by using sbid1 and sbid2 (page 427) for this purpose.

Cl **62** *SC* **62.2.4.5** *P* **403** *L* **51** # **828**

Tzannes, Marcos Aware

Comment Type **T** *Comment Status* **A**

In T1.424 9.3.5.5 it is specified that V=1 is mandatory and other values are optional. Therefore optional values of V should be removed from the EFM standard.

SuggestedRemedy

Stare that V=1 is mandatory and other values are beyond the scope of the EFM standard. Also remove Vmax field from the initialization messages O-MSG2, R-MSG2 and O-CONTRACT.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The required values of V that are mandatory for 10PASS-TS are fixed by the Copper Sub Task Force, to remove the optional character of this feature.
V=1 is agreed, corresponding initialization fields shall be changed to "reserved".

Cl **62** *SC* **62.3.4** *P* *L* # **305**

Tom Mathey Independent

Comment Type **T** *Comment Status* **R**

Options are the dark force. Resist.
do not want any optional features negotiated during (handshake) initialization, operating modes are ok

SuggestedRemedy

Strike text about options and state that options are outside the scope of this standard.

Proposed Response *Response Status* **C**

REJECT.
Our draft doesn't specify any options, but MCM-VDSL does. Any optional features of MCM-VDSL are either mandatory or out-of-scope for 10PASS-TS. Reserved fields in initialization messages can be used to activate certain vendor-specific extensions.

Cl **62** *SC* **62.3.4** *P* *L* **26** # **622**

Fanfoni, Sabina — STMicroelectronics

Comment Type **TR** *Comment Status* **A**

Having mandatory the use of 8.625 khz tone spacing in 10PASS-TS will cause an inconsistency between 10PASS-TS and T1.424/Trial-Use Part 3, where 8.625 khz tone sapcing is in an informative annex. This means that vendors shall implement a feature that is optional in other standard. It may be preferable to support a large size FFT (4096 tones) then supporting two framimg duration derived from the use of both 4.3125 khz and 8.625 khz tone spacing.

SuggestedRemedy

Remove from the text 'The 10PASS-TS PMD (including MDI) shall comply to the requirements of MCM-VDSL Section 8 (Physi-cal medium dependent (PMD) sublayer), Section 10 (Operations and maintenance), Section 11 (Link activa-tion and deactivation), Section 12 (Normative Annex A - Handshake procedure for VDSL) and Section 14 (Informative Annex C - 8.625kHz tone spacing).' the words 'and Section 14 (Informative Annex C - 8.625kHz tone spacing).'

I list other clauses where I found the reference to 8.625kHz and should be changed:
45.2.1.18 table 45-9-10P row 41;
62.3.4.2.2 row 30;
62.3.4.6.4 table 62-4 row 39, table 62-6 row 45, table 62-8 row 17; table 62-10 row 20;
62.3.4.8.5 row 9;
62.4.4.2 page 422 row 7;
62A.4 row 3.

Proposed Response *Response Status* **C**

ACCEPT.
PROPOSED
ACCEPT #622 AND ACCEPT #621 (AND 824, 1244)
"Remove 8.625kHz spacing, mandate 4096 tones"
Moved: Daun Langston Seconded: Tom Dineen
Approve: 12 Don't Approve: 3 Abstain: 2

PROPOSED REJECT.
Support for 8.625 kHz tone spacing was made mandatory for 10PASS-TS at the November 2002 meeting (see comment #827/D1.1). This agreement has been confirmed by the responses to comments #580/D1.2 and #605/D1.414.
Support for 8.625 kHz tone spacing was made mandatory because it allows the same performance with fewer tones, while providing lower latency and power consumption.
(See also comment #824.)

Cl **62** *SC* **62.3.4** *P* **405** *L* # **1244**

Sorbara, Massimo — GlobespanVirata, Inc.

Comment Type **T** *Comment Status* **A**

The current draft (D2.0) of 802.3ah specifies 2,048 as the maximum number of subcarriers. With 4.3125 kHz tone spacing this spans approximately 8MHz of bandwidth. The bandplans specify use of bandwidths up to 12 MHz. When operating at bandwidths above 8 MHz, the current draft requires the use of 8.625 kHz tone spacings.
The MCM-VDSL specification in D2.0 is specified by the use of T1.424/Trial-Use Part 3 Standard. T1.424 specifies the use of 4.3125 kHz tone spacing with up to 4,096 tones. The 8.625 kHz tone spacing is specified in an informative annex in T1.424 and it's use would be considered to be optional. The specification of MCM-VDSL in 802.3ah needs to be consistent with the specification in T1.424/Trial-Use Part 3. Therefore, we recommend that the 8.625 kHz tone spacing specification be removed from the MCM-VDSL specification in 802.3ah and specified with only 4.3125 kHz tone spacing together with a maximum number of tones of 4096. This consistency in specification will prevent the following problems:

- The 8.625KHz spacing provides only 50% of the cyclic extension provided by the 4.3125KHz systems. This creates additional ISI and performance degradation for loops longer than 700 meters.
- Complications in interoperability of systems from different vendors: The two tone spacing will result in twice the number of interoperability tests to be performed (unless the standard clearly specifies when and where each one shall be used).
- Avoid unnecessary increased crosstalk when mixing systems of 4.3125 KHz and 8.625 kHz tone spacing in the same cable (this scenario is explained in Annex C of T1.424/TU)

SuggestedRemedy

Proposed Resolution: Remove 8.625 kHz tone spacing and change the maximum number of tones from 2048 to 4096.

Proposed Response *Response Status* **C**

ACCEPT.
See discussion of comment #622.

Cl **62** *SC* **62.3.4** *P* **405** *L* **21** # **1129**

Law, David 3Com

Comment Type **E** *Comment Status* **A**

In the case of referencing other standards please use a format equivalent to that found in 25.4.

I have give an example starting at 62.3.4 and continued to the end of page 406 following. I am happy to assist with this work if it would help.

SuggestedRemedy

In subclause 62.3.4 change the text '....625kHz tone spacing).' to read '... 8.625kHz tone spacing) with the exceptions listed below. '.

Delete 62.3.4.1 as this is already stated above as these sections are not listed.

Delete 62.3.4.2, 62.3.4.2.1 since we are only now listing exceptions.

Change the title of 62.3.4.2.2 to read 'Replacement of 8.2.1, "<TITLE>"' where TITLE is the title of 8.2.1.

On line 30 on Page 406 change the text to be a subclause, title 'Changes to 8.2.1.1, "Tone spacing"' and the subclause text reads 'Additionally, 8.625 kHz tone spacing shall be supported as specified in 62.4.4.8.'.

Delete lines 33 and 35.

On line 36 change the text to be a subclause, title 'Changes to 8.2.2, "<TITLE>"'.

On line 42 change the text to be a subclause, title 'Changes to 8.2.3.1, "<TITLE>"'.

Delete lines 47 and 49.

On line 51 change the text to be a subclause, title 'Replacement of 8.2.3.4, "<TITLE>"'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62** *SC* **62.3.4.2.2** *P* *L* **49** # **621**

Fanfoni, Sabina STMicroelectronics

Comment Type **TR** *Comment Status* **A**

State of the art of FFT/IFFT implementation can allow to operates with 4096. Other stndards, along with the one reference in this clause, take adavntages of this, specifing the use up to 4096 tones; also 10-PASS-TS shall benefit of using 4096 tones.

SuggestedRemedy

Change text '10PASS-TS transceivers shall support modulation of N SC = 2,048 subcarriers (n=3)' into '10PASS-TS transceivers shall support modulation of N SC = 4,096 subcarriers (n=4)'.

I list other clauses where I found a reference to a 2,048 number of tones that should be changed into 4,096:
45.2.1.17 row 10;
45.2.1.2.18 table 45-9-10P row 38;
62.4.4.2 row 14;
62A.4 row 42.

Proposed Response *Response Status* **C**

ACCEPT. By virtue of the motion on #622.
PROPOSED REJECT.
This comment is to be discussed along with comment #622. The use of 4096 tones is unnecessary when 8.625 kHz tone spacing is available; a bandwidth in excess of that needed for any standard band plan (as defined in Annex 62A) can be obtained with 2048 tones.

Cl **62** *SC* **62.3.4.2.2** *P* **405** *L* **45** # **824**

Tzannes, Marcos Aware

Comment Type **TR** *Comment Status* **A**

T1.424 requires support of 4 kHz tone spacing and 8 kHz tone spacing is not specified in the normative part of T1.424 (it is contained in an informative appendix). There are several implementation disadvantages if 8 kHz tone spacing is required. The same transmission BW can be utilized if 4 kHz tone spacing is used with Nsc=4096 subcarriers.

SuggestedRemedy

Change the text so that 4 KHz tone spacing and Nsc=4096 shall be supported. Also change the mandatory cyclic length to 40.

Proposed Response *Response Status* **C**

ACCEPT.
See discussion of comment #622.

Cl **62** *SC* **62.3.4.2.2** *P* **406** *L* **1** # **1239**

Beck, Michael Alcatel

Comment Type **TR** *Comment Status* **A**

The first paragraph contains a number of "shalls" which are redundant with the normative requirements of Annex 62A. Furthermore, it suggests that there are optional frequency plans for private networks. The paragraph needs to be rewritten to remove ambiguity.

SuggestedRemedy

Editor to replace the first paragraph with following text:
"Frequency plans are defined in Annex 62A. In standard frequency plans, frequency bands are allocated as shown in Figure 62–3. The values of the splitting frequencies are given in Annex 62A. Adherence to a particular frequency plan may be mandatory under local regulations when 10PASS-TS is deployed in public networks. Other frequency plans, for use in private networks, can be supported by means of Clause 45 register settings (see Annex 62C for examples)."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62** *SC* **62.3.4.2.2** *P* **406** *L* **13** # **1238**

Beck, Michael Alcatel

Comment Type **TR** *Comment Status* **A**

The sentence "The use of the spectrum above 12 MHz is outside the scope of this standard." is an unnecessary restriction. The number of tones and tone spacing specified in this clause normatively limit the total bandwidth that can be used by 10PASS-TS systems. Band plans for use in public networks are normatively specified in Annex 62A. This additional restriction serves no purpose.

SuggestedRemedy

Remove sentence "The use of the spectrum above 12 MHz is outside the scope of this standard."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62** *SC* **62.3.4.2.2** *P* **406** *L* **31** # **906**

Frazier, Howard SWI

Comment Type **E** *Comment Status* **A**

Bad cross reference. 62.4.4.8 does not exist.

SuggestedRemedy

Correct the cross reference. Since several subclauses describe requirements for 8.625 kHz tone spacing, I can't be sure of which subclause the editor intended to cross reference.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The correct reference is 62.3.4.8.

Cl **62** *SC* **62.3.4.2.2** *P* **406** *L* **5** # **306**

Tom Mathey Independent

Comment Type **E** *Comment Status* **A**

Options are the dark force. Resist.

SuggestedRemedy

Strike text about options and state that options are outside the scope of this standard.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See resolution of comment #1239.

Cl **62** *SC* **62.3.4.2.2** *P* **408** *L* **22** # **884**

Behrooz Rezvani Ikanos Communicaiton

Comment Type **T** *Comment Status* **R**

Addition of Trellis code to DMT VDSL is very natural and well documented and practiced in DMT ADSL. Trellis code modulation TCM is also supported by 2 Base-TL the long reach PHY of 802.3ah. TCM was left out of discussion in short reach copper PHY due to entaglement in line code discussion which took very long. However this improvement is very simple and can easily be implement by DMT chip suppliers

SuggestedRemedy

remove referece to section 8.7 part 3 of T1.424 and replace it with sections 8.7, 8.8. and 8.9 of ITU-T G.992.1E

Proposed Response *Response Status* **C**

REJECT.

MOTION TO RECONSIDER
Moved: Rezvani Seconded: Beili
Approve: 5 Don't Approve: 10 Abstain: 0

REJECT.
Simon/Jacobsen
Approve: 11 Don't Approve: 0 Abstain: 4

PROPOSED ACCEPT IN PRINCIPLE.
This comment requests the introduction of a new feature based on features existing in other standards. Needs discussion in Copper Sub Task Force.

Cl **62** *SC* **62.3.4.2.2** *P* **505** *L* # **1245**

Sorbara, Massimo GlobespanVirata, Inc.

Comment Type **T** *Comment Status* **A**

Simulation results for test #'s 2, 6, 13, 14, 15, 16, 18, 19, 20, 24, 25, 26, 27, 30, and 31 show results under ideal conditions that are very close to the objective value.

SuggestedRemedy

We recommend that each of these test cases be reviewed, taking into consideration practical implementation losses, in assuring feasibility of meeting each of the test cases by practical transceiver designs.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

APPROVED BY ACCLAMATION

Also: reject 882 (with rebuttal shown there), accept 1234, accept in principle 1241, 1242, 1243.

Tests 2 and 6: use profile 18
Change data rate on 10 and 21 to 100/35.
Tests 11: remove entry
Test 12: change noise to AWGN
Test 14: change loop length to 650m
Test 15, 17, 26, 28 : remove UPBO
Test 18: change loop length to 750m and use profile 4
Test 17: use profile 4
Tests 28, 29: use profile 4

The Chair is directed by the group to ensure that simulation data is made available to support these values and to rebutt the proposed values in comment #882.

Cl **62** *SC* **62.3.4.4** *P* **407** *L* **33** # **826**

Tzannes, Marcos Aware

Comment Type **T** *Comment Status* **R**

Express Swapping in sections 10.7.3.8 and 10.7.3.9 of T1.424 is an optional feature and should be removed from the EFM standard because it would define different port types.

SuggestedRemedy

State Express Bit swapping is not specified in the EFM standard and remove reference to T1.424 section 10.7.3.8 and 10.7.3.9 on express swapping. Also remove Express Swap field from the initialization messages O-MSG2 and R-MSG2

Proposed Response *Response Status* **C**

REJECT.
The draft already states that features which are optional in T1.424/Trial-Use are not required for compliance with 10PASS-TS. This implies that Express Swapping is not an option in 10PASS-TS.

Cl **62** *SC* **62.3.4.5** *P* **408** *L* **35** # **827**

Tzannes, Marcos Aware

Comment Type **T** *Comment Status* **D**

support of Jmax>0 is optional in T1.424 section 11.2.6.2.1.3 and should be removed from the EFM standard because it would define different port types. If Jmax=0 the Bits and Gains on each subcarrier are independent (no polynomial interpolation) and therefore all the text and equations in 11.2.6.2.1.3 are redundant.

SuggestedRemedy

State that Jmax=0 is mandatory and all other values of Jmax are beyond the scope of the EFM standard. Also remove all references to Jmax in section 11.2.6.2.1.3 of T1.424. Also remove Jmax field from the initialization messages O-MSG2, R-MSG2, O-B&G and R-B&G.

Proposed Response *Response Status* **Z**

WITHDRAWN.

POSTPONED
(Langston/Fanfoni) By acclamation

PROPOSED ACCEPT IN PRINCIPLE.
The required Jmax that is mandatory for 10PASS-TS must be fixed by the Copper Sub Task Force, to remove the optional character of this feature.
If Jmax=0 is agreed, corresponding Clause 45 register shall be removed.
Nominations: 0, 1

Cl **62** *SC* **62.3.4.6.4** *P* **410** *L* **11** # **914**

Cravens, George — Mindspeed

Comment Type **TR** *Comment Status* **A**

A description of the mapping of the Clause 45 R-PMA/PMD registers to EOC messages needs to be added. I can't provide a detailed remedy since there is currently nothing in the document to work with, and I don't have sufficient expertise in EOC.

NOTE: This would have been classified as a TR if I were going to be present at the interim meeting.

SuggestedRemedy

Add text and tables describing the mapping of the R-PMA/PMD registers to EOC messages.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Most Clause 45 registers map to Indicator Bits in a straightforward way (see Table 45-20). A few of the primitives exchanged by eoc could also be mapped to Clause 45 registers.

Provide a Table to specify following mapping:
VTU-R data register (eoc) <-> Clause 45 register
(0) VTU-R vendor ID <-> (Clause 45 register to be created)
(1) VTU-R revision number <-> n/a
(2) VTU-R serial number <-> n/a
(3) Self-test results <-> (non-zero value causes PMA/PMD link status to be cleared to 0)
(4) Vendor-discretionary <-> n/a
(5) Vendor-discretionary <-> n/a
(6) Line attenuation <-> (Clause 45 register to be created)
(7) SNR margin <-> (Clause 45 register to be created)
(8) VTU-R configuration <-> n/a
(9-F) For future use <-> n/a

Cl **62** *SC* **62.3.5.3** *P* **416** *L* **36** # **307**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **A**

TBDs

SuggestedRemedy

Provide exact value to meet requirements of technical completeness.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
These values are outside the scope of our standard; text shall be updated accordingly.

Cl **62** *SC* **Figure 62-4** *P* **409** *L* **1** # **1125**

Law, David — 3Com

Comment Type **T** *Comment Status* **A**

Please provide the normal 802.3 definition of Variables used in the State Machine.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor shall present proposed text at a Sub Task Force meeting.

Cl **62** *SC* **Figure 62-4** *P* **409** *L* **22** # **673**

Daines, Kevin — World Wide Packets

Comment Type **E** *Comment Status* **A**

false and true should be capitalized in this state diagram to be consistent within the copper clauses.

SuggestedRemedy

Fix

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62A** *SC* *P* **530** *L* **29** # **543**

James, David — JGG

Comment Type **E** *Comment Status* **A**

Excessive capitalization.

SuggestedRemedy

Change:

62A.3 Profile Definitions
==>
62A.3 Profile definitions

62A.3.1 Bandplan and PSD Mask Profiles
==>
62A.3.1 Bandplan and PSD mask profiles

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62A** SC P **532** L **54** # **544**
James, David JGG

Comment Type **E** *Comment Status* **A**
Punctuation.

SuggestedRemedy
1) Throughout the spec, change:
... ==> elipse
2).. ==> .

Proposed Response *Response Status* **C**
ACCEPT.

Cl **62A** SC P **548** L **36** # **545**
James, David JGG

Comment Type **E** *Comment Status* **A**
C-code should be an equation and use Courier font.

SuggestedRemedy
Do as requested.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **62A** SC **62A** P **530** L **1** # **320**
Tom Mathey Independent

Comment Type **T** *Comment Status* **A**
Clause 62A is normative, has a number of "shall", there are no pics for any of the shalls

SuggestedRemedy
Include PICS

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Editor to draft PICS for review at Sub Task Force meeting.

Cl **62A** SC **62A.3.6** P **534** L **33** # **1233**
Beck, Michael Alcatel

Comment Type **E** *Comment Status* **A**
The example Payload Rate Profile of 10/3 uses an upstream bitrate for which no profile is defined.

SuggestedRemedy
Replace sentence with: "For example a Payload Rate Profile of 10/2.5 corresponds to a downstream payload rate of 10 Mb/s and an upstream payload rate of 2.5 Mb/s."

Proposed Response *Response Status* **C**
ACCEPT.
No capital in Payload Rate Profile.

Cl **62A** SC **62A.3.8** P **534** L **49** # **330**
Simon, Scott Cisco Systems, Inc.

Comment Type **TR** *Comment Status* **A**
It is not specified what default profile shall be used in the absence of management

SuggestedRemedy
Add a new subclause 62A.3.8 that state that the default profile shall be

10/10 payload, bandplan #1, rs: (240,224), Interleaver: I=30 M=62, notches #2, 6, 10, 11 enabled, PBO ref PSD #3.

Make a table containing the above information with explanatory text.
Add a note:

"Note: The default profile may not be spectrally compatable to any particular regional requirement, nor may it be the optimal profile for a particular cable segement."

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Band Plan B shall be used (with appropriate UPBO Ref. PSD); other variables as proposed.

Cl **62A** SC **62A.4** P **535** L **23** # **940**
O'Mahony, Barry Intel Corp.

Comment Type **E** *Comment Status* **A**
In Table 62A-5, replace "0x000" notation for hexadecimal numbers with subscripted "16".
Also in Tables 62A-6 and 62A-7, and 63A-2

SuggestedRemedy

Proposed Response *Response Status* **C**
ACCEPT.

Cl **62A** *SC* **62A.4** *P* **535** *L* **30** # **886**

Frazier, Howard SWI

Comment Type **TR** *Comment Status* **A**

The representation "Fx" in the last two rows of Table 62A-5 is confusing, especially since there are other entries in the table of the form 0x???? where ???? is a 4 digit hex value. Some one is likely to interpret "Fx" as 15 decimal, and that just won't work.

Since the intent is to allow flexibility in the selection of this crossover frequency, and not to set the crossover at 64 kHz, the value "Fx" should be footnoted in both occurences to put appropriate bounds on the range of values.

SuggestedRemedy

Replace "Fx" in the second to last row of the table with "fx1".

Add footnote "a" to the "fx1" in the second to last row of the table, as follows:

a. Values for fx1 shall be in the range 0x0369 to Ox0ADA.

Replace "Fx" in the last row of the table with "fx2".

Add footnote "b" to the "fx2" in the last row of the table, as follows:

b. Values for fx2 shall be in the range (fx1 + 2) to 0x0ADE.

I am open to considering other values for the ranges.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62B** *SC* **62B** *P* **540** *L* **1** # **321**

Tom Mathey Independent

Comment Type **T** *Comment Status* **A**

Clause 62B is normative, has a number of "shall", there are no pics for any of the shalls

SuggestedRemedy

Include PICS

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor to draft PICS for review at Sub Task Force meeting.

Cl **62B** *SC* **62B.3** *P* **541** *L* # **1241**

Sorbara, Massimo GlobespanVirata, Inc.

Comment Type **TR** *Comment Status* **A**

The transceiver compliant with the definitions in clauses 62 and 62B cannot physically meet the bit rate objectives in test cases#10 and #21 in table 62B-1. We recommend that test cases #10 and #21 be deleted from the specification.

SuggestedRemedy

We recommend that test cases #10 and #21 be deleted from the specification.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
See: #1245.

Cl **62B** *SC* **62B.3** *P* **541** *L* # **1243**

Sorbara, Massimo GlobespanVirata, Inc.

Comment Type **T** *Comment Status* **A**

Simulation results for test #'s 2, 6, 13, 14, 15, 16, 18, 19, 20, 24, 25, 26, 27, 30, and 31 show results under ideal conditions that are very close to the objective value. We recommend that each of these test cases be reviewed, taking into consideration practical implementation losses, in assuring feasibility of meeting each of the test cases by practical transceiver designs.

SuggestedRemedy

We recommend that each of these test cases be reviewed, taking into consideration practical implementation losses, in assuring feasibility of meeting each of the test cases by practical transceiver designs.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See: #1245.

Cl **62B** *SC* **62B.3** *P* **541** *L* # **1242**

Sorbara, Massimo GlobespanVirata, Inc.

Comment Type **T** *Comment Status* **A**

Simulation results (assuming ideal conditions) for test #'s 11, 12, 17, 22, 23, 28, and 29 show test results that fall excessively short of the objectives specified in Table 62B-1. We recommend that these test be either removed or modified such that the performance objective in each test is achievable considering reasonable implementation losses.

SuggestedRemedy

We recommend that these test be either removed or modified such that the performance objective in each test is achievable considering reasonable implementation losses.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See: #1245.

Cl **62B** *SC* **62B.3** *P* **541** *L* **22** # **1234**

Beck, Michael Alcatel

Comment Type **TR** *Comment Status* **A**

Using the band plans as defined in Annex 62A, and the values of B_max_d and B_max_u specified in 62.3.4.2.2, the total aggregate bitrate available to 10PASS-TS is limited to 12 MHz * (4/4.3125) * 12 bits/s/Hz = 134 Mb/s. As a result, profiles #10 and #21 cannot be supported with a physics-compliant PHY.

SuggestedRemedy

Change the Payload Data Rate to a feasible value.

Proposed Response *Response Status* **C**

ACCEPT.
See: #1245.

Cl **62B** *SC* **62B.3** *P* **541** *L* **9** # **882**

Barrass, Hugh Cisco Systems

Comment Type **TR** *Comment Status* **R**

Users should expect a high degree of interchangeability between compliant devices. In order to achieve this it is important that required performance levels are near to the maximum achievable within the standard. This will ensure the minimum of variation from on device to another without unduly constraining implementation.

Many of the distances specified in Table 62B-1 are significantly below the levels achieved by devices tested by T1E1.4 or capacity simulations. The required distances must be increased to more challenging levels as shown in the remedy.

Additionally, the distances specified for notched profiles and very high rate profiles must be shown to be near the theoretical limit for the test scenario.

Furthermore, given that a number of implementations are available which already comply with the PMA/PMD specification, it is expected that physical device testing should be performed according to this Clause prior to Sponsor Ballot.

SuggestedRemedy

Change the distances of the tests in Table 62B-1 as follows:

Test number : Change distance to

1	1100
2	750
3	1000
4	600
5	750
13	350
15	900
17	1000
18	1200
19	1400

Proposed Response *Response Status* **U**

REJECT.

The Olympic test results, the testing method, and testing parameters were designed as technology evaluation and as such should be treated only as guidelines. The reaches indicated in the table are sufficient to indicate basic functionality and performance.

Following changes have been made in resolution of comment #1245:

Tests 2 and 6: use profile 18
Change data rate on 10 and 21 to 100/35.
Tests 11: remove entry
Test 12: change noise to AWGN
Test 14: change loop length to 650m
Test 15, 17, 26, 28 : remove UPBO

Test 18: change loop length to 750m and use profile 4
Test 17: use profile 4
Tests 28, 29: use profile 4

The Chair is directed by the group to ensure that simulation data is made available to support these values and to rebutt the proposed values in comment #882.

Cl **62B** *SC* **62B.3** *P* **541** *L* **9** # **885**

Frazier, Howard SWI

Comment Type **T** *Comment Status* **A**

The column headed "Notes" contains no useful information. The user of this standard will not care whether a particular test case meets one of the project objectives, which is what I assume the appearance of the word "Objective" in this column implies.

SuggestedRemedy

Delete the column headed "Notes".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62C** *SC* **62C.2** *P* **545** *L* **3** # **1235**

Beck, Michael Alcatel

Comment Type **E** *Comment Status* **A**

Figure 62C-1, Figure 62C-2, Figure 62C-3 and Figure 62C-4 don't comply with the IEEE Style Guide.

SuggestedRemedy

Replace figures with properly formatted FrameMaker-editable figures, or tables representing the same information.

Proposed Response *Response Status* **C**

ACCEPT.
See resolution of comment #941.

Cl **62C** *SC* **62C.2** *P* **545** *L* **40** # **883**

Barrass, Hugh Cisco Systems

Comment Type **T** *Comment Status* **A**

Distances are quoted in feet (& kft).

SuggestedRemedy

Changes distances to metric for Table 62C-1, Figure 62C-2, Figure 62C-3, Figure 62C-4.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **62C** *SC* **62C.2** *P* **545** *L* **5** # **941**

O'Mahony, Barry Intel Corp.

Comment Type **E** *Comment Status* **A**

Figure 62C-1 to 62C-4 not in Framemaker format

SuggestedRemedy

Copy replacement figures from omahony_1_0903.pdf

Proposed Response *Response Status* **C**

ACCEPT.
See also comment #1235. Resolution of comment #883 may apply.

Cl **62C** *SC* **62C.3.1** *P* **548** *L* **36** # **1236**

Beck, Michael Alcatel

Comment Type **TR** *Comment Status* **A**

The example given in Figure 62C-6 iterates over 4096 tones. 62.3.4.2.2 limits the number of tones to 2048.

SuggestedRemedy

Replace iterator limit with 2048, and generally reformat the example to match the pseudo-programs in 62A.4.

Proposed Response *Response Status* **C**

ACCEPT.
Resolution of comment #545 may apply.

Cl **63** *SC* *P* **423** *L* **1** # **518**

James, David JGG

Comment Type **E** *Comment Status* **R**

Excessive capitalization.

SuggestedRemedy

Change:
Physical Medium Attachment (PMA) and Physical Medium Dependent (PMD), type 2BASE-TL

==>
Physical medium attachment (PMA) and physical medium dependent (PMD), type 2BASE-TL

Proposed Response *Response Status* **C**

REJECT.
"Physical Medium Attachment" and "Physical Medium Dependent" are used as proper names with capitalization as shown, in accordance with the established custom in IEEE Std 802.3.

Cl **63** *SC* *P* **424** *L* **29** # **519**
James, David JGG

Comment Type **E** *Comment Status* **A**
Missing em-dash.

SuggestedRemedy
Include em-dash in the figure title.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **63** *SC* *P* **425** *L* **37** # **520**
James, David JGG

Comment Type **E** *Comment Status* **A**
Noncentered names.

SuggestedRemedy
Center the subtitle row text.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Center the subtitle row text and use bold typeface.

Cl **63** *SC* *P* **427** *L* **23** # **522**
James, David JGG

Comment Type **E** *Comment Status* **A**
IEEE standards have no sections, only subclauses.

SuggestedRemedy
Change:
section ==> subclause

Here and throughout.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
When refering to an ITU-T Recommendation, "section" is ok.
When refering to IEEE Std 802.3 (including this draft), the word "subclause" shall be used, except when the actual subclause number is given (in this case, use only the subclause number).

Cl **63** *SC* *P* **427** *L* **60** # **521**
James, David JGG

Comment Type **E** *Comment Status* **A**
Sentence w/o a period.

SuggestedRemedy
Change footing text:
This is an unapproved IEEE Standards Draft, subject to change
==>
This is an unapproved IEEE Standards Draft, subject to change.
^ period

Proposed Response *Response Status* **C**
ACCEPT.

Cl **63** *SC* **62.2.2.1** *P* **402** *L* **46** # **1215**
Thaler, Pat Agilent

Comment Type **T** *Comment Status* **A**
This is the first occurance but the problem is multiple places.

"Stet" is not correctly used. Stet is a technical editing word for reversing a marked deletion and not a generic term for "leave as is".

Stet means: to direct retention of (a word or passage previously ordered to be deleted or omitted from a manuscript or printer's proof) by annotating usually with the word stet.

SuggestedRemedy
See the resolutions I suggested in similar comments on Clauses 61 and 62 to remove the occurances of "stet".

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Replace all instances of "Stet" with "Referenced as is." Additionally, the Editor has license to modify granularity of section references.
See also comments #508, #1214 and #1213.

Cl **63** *SC* **63.1** *P* **424** *L* **2** # **1206**

Law, David 3Com

Comment Type **T** *Comment Status* **A**

Suggest introductory text be provided. In addition a mandatory requirement to combine the 10PASS-TS PMA and PMD with a 64B65B PCS to form a PHY doesn't seem to appear anywhere else. This would be similar to text found in 100BASE-TX (Clause 25).

SuggestedRemedy

Suggest the following text be added as a paragrph under Overview 'This clause specifies the 2BASE-TL Physical Medium Attachment (PMA) and Physical Medium Dependent (PMD) for voice grade twisted-pair wiring. In order to form a complete 2BASE-TL PHY, the 2BASE-TL PMA and PMD shall be integrated with the 64B65B PCS of Clause 61, which is assumed incorporated by reference.'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
This clause specifies the 2BASE-TL Physical Medium Attachment (PMA) and Physical Medium Dependent (PMD) for voice grade twisted-pair wiring. In order to form a complete 2BASE-TL PHY, the 2BASE-TL PMA and PMD shall be integrated with the 64/65-octet PCS of Clause 61, which is assumed incorporated by reference

Cl **63** *SC* **63.1.2** *P* **424** *L* **14** # **904**

Frazier, Howard SWI

Comment Type **T** *Comment Status* **A**

As used in this sentence, the word "rate" should be "ratio".
One part in 10E7 is a ratio, not a rate, as a rate would entail time.

SuggestedRemedy

Change "rate" to "ratio".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **63** *SC* **63.1.4** *P* **424** *L* **26** # **749**

Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**

Typo

SuggestedRemedy

Remove "." after "overhead"

Proposed Response *Response Status* **C**

ACCEPT.
See also #308.

Cl **63** *SC* **63.1.4** *P* **424** *L* **26** # **308**

Tom Mathey Independent

Comment Type **E** *Comment Status* **A**

extra period in sentence at end of word overhead

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.
See also #749.

Cl **63** *SC* **63.1.4.1** *P* **424** *L* **54** # **750**

Horvat, Michael Infineon Technologies

Comment Type **T** *Comment Status* **A**

Definition of variable PMA_receive_synchronized not defined

SuggestedRemedy

Add definition for PMA_receive_synchronized:
PMA_receive_synchronized is true as long as LOSW is false

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The signal PMA_receive_synchronized, defined in CROSS REF 61.2.3.2.2, shall be asserted when the LOSW bit is set to "0" (see 63.2.2.3), and deasserted when the LOSW is set to "1".

Cl **63** *SC* **63.1.4.2.1** *P* **425** *L* **19** # **751**

Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **A**

Definition of MSB is changing various times.

SuggestedRemedy

Add a cross reference to Figure 61-18 to clarify what MSB means.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Replace the 2nd paragraph of 63.1.4.2.1 with the following text:
"If data streams are implemented serially, the LSB of each octet (i.e b8 of Figure 61-18) is sent first. In section 7.1.1 of G.991.2, with i
= 0, the payload blocks are made of a stream of bytes. Each byte consists of 8 bits. The first bit of each byte (ie lowest frame bit
number in a byte) maps to b8 in Figure 61-18 and the last bit of each byte maps to b1 of Figure 61-18."

Cl **63** *SC* **63.1.4.3** *P* **426** *L* **4** # **915**

Cravens, George Mindspeed

Comment Type **TR** *Comment Status* **A**

A description of the mapping of the Clause 45 R-PMA/PMD registers to EOC messages needs to be added. I can't provide a detailed remedy since there is currently nothing in the document to work with, and I don't have sufficient expertise in EOC.

(The detailed description seems to belong in a (new) 63.3.2.3 {G.991.2 Reference section 9}. See other comment.)

NOTE: This would have been classified as a TR if I were going to be present at the interim meeting.

SuggestedRemedy

Add text and tables describing the mapping of the R-PMA/PMD registers to EOC messages.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add the following text in 63.2.2.3 Reference section 9:

"The parameters of the various 2BASE-TL registers defined in clause 45 are gathered via the SHDSL management.

SNR Margin, Code violations, ES, SES, LOSW, UAS, SNR margin defect, Loop attenuation defect and loss of sync word failure
shall be obtained in the following way:
The 2BASE-TL-O shall send a Status Request (Msg ID 11) EOC message.

If there has been any change in performance status other than SNR margin since the last time a unit was polled, the peer
2BASE-TL-R shall respond with an SHDSL Network Side Performance Status (Msg ID 140) EOC message

The following octets & bits are then mapped to the clause 45 registers:
SNR Margin -> octet 3
Code violations -> octet 7&8
ES -> octet 5
SES -> octet 6
LOSW -> octet 9
UAS -> octet 10

In addition, bit 6 & 7 of octet 11 indicate that either an overflow or reset condition has occurred on any of the Code
violations / ES/ SES / LOSW / UAS registers.

SNR margin defect -> octet 1/ bit 3
Loop attenuation defect -> octet 1/ bit 2
LOSW Failure -> octet 1/ bit 1

Otherwise, the peer 2BASE-TL-R shall respond with a Status/SNR (Msg ID 139) EOC message.
SNR Margin -> octet 3

The Loop attenuation and SNR margin threshold shall be set in the clause 45 register and passed to the peer 2BASE-TL-R
using Message ID 3.

The segment defect is defined in sec. 9.2.4 and uses a dedicated framing bit rather than the EOC messaging."

Also add: remote vendor ID.
Editor of Clause 45 to specify behavior during handshake.
---
1) In addition to the above text, it is recommended to change the length of the clause 45 registers to reflect the same length as the SHDSLl parameters. ES, SES, LOSW and UAS should be 8 rather than 16 bits long. Although there are technically no problems assigning different lengths to the clause 45 & SHDSL parameters, the EFM management entity might not be aware that the 16 bit ES register should really be refreshed at the rate of an 8 bit register.

2) In addition, it is recommended that 2 more bits be allocated to the clause 45 2B state defects register. Those 2 bits would correspond to bit 6 & 7 of octet 11 of message ID 141 and indicate an overflow or reset condition on the Code violations / ES/ SES/ LOSW/ UAS 2Base-TL-R registers.

3) It is also recommended that an additional clause 45 register be created recording the loop attenuation. The loop attenuation is reported as octet 4 of message ID 141. Since the info is there, we might as well take advantage of it.

4) It is also recommended that an additional clause 45 register be created to record the power back-off status. The new register would have 3 fields that correspond to
a) bit 6 of octet 1 - Power BackOff status
b) bits 0 to 3 of octet 11 - Power Back-Off Base Value (dB)
c) bit 7 of octet 12 Power Back-off Extension (dB).

5) It is also recommended that the updating mechanism be consistent across the clause 45 and the SHDSL registers. In order
to facilitate this, the following additional text should be added to 63.2.2.3 Reference section 9.
"Note that the code violation, ES, SES, LOSW and UAS in SHDSL are modulo counters. The absolute value of the counter is
meaningless, however the difference in between 2 consecutive readings provides the change in code violation/ES/SES/LOSW/UAS. Also, if there are no changes in the performance registers, message ID 139 rather than 141 will be sent by the 2Base-TL-R. It only contains the SNR value and none of the
other parameters."

Cl **63** *SC* **63.2.1** *P* **426** *L* **54** # **752**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **R**

No need to exclude dual-bearer mode.

SuggestedRemedy

The 2BASE-TL PMA supports up to 2 channels.

Proposed Response *Response Status* **C**

REJECT.
The dual bearer channel can be used in two ways: either to carry 2 Ethernet streams or an Ethernet and a non-Ethernet stream (for example voice). To achieve objective 1, the aggregation function was created. Objective 2 is out of scope.

Cl **63** *SC* **63.2.2** *P* **427** *L* **17** # **866**

Kimpe, Marc — Adtran

Comment Type **TR** *Comment Status* **A**

The description of the management primitives and EOC were inadvertently declared out of scope while clause 45 requires them.

SuggestedRemedy

Reference section 9 of G.991.2 in section 63.2.2
Three changes are required:
a) Strike the words "Reference section 9 (Management)" from line 17
b) Change line 13 to add the words in brackets "The 2BASE-TL PMA shall comply to the requirements of G.991.2 Section 7 [and Section 9]"
c) add a section 63.2.2.3 Reference section 9
stet with the exception of section 9.5.5.6 where Message IDs 17 "ATM Cell Status Request", 20, "ISDN Request", 145 "ATM Cell Status Information" and 148 "ISDN Response" are out of scope.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **63** *SC* **63.2.2** *P* **427** *L* **17** # **753**

Horvat, Michael — Infineon Technologies

Comment Type **T** *Comment Status* **A**

Reference to section 9 of G.SHDSL is needed for exchanging PM and OAM data as well as access to the '-R' device.

SuggestedRemedy

Remove reference section 9

Proposed Response *Response Status* **C**

ACCEPT.
See also #755.

Cl **63** *SC* **63.2.2** *P* **427** *L* **20** # **754**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **R**

Line 18 excludes the use of regenerators, whereas line 20 describes it as an implementation specific option.

SuggestedRemedy

Remove last sentence of 63.2.2

Proposed Response *Response Status* **C**

REJECT.
There is no conflict between those sentences. The definition of regenerator is out of scope of the 2BASE-TL spec however, were regenerators to be deployed, the spec encourages them to comply
with annex D.

Cl **63** *SC* **63.3.2** *P* **428** *L* **51** # **755**

Horvat, Michael — Infineon Technologies

Comment Type **E** *Comment Status* **A**

Section 9 of G.SHDSL needed

SuggestedRemedy

Remove reference section 9 in line 51.

Proposed Response *Response Status* **C**

ACCEPT.
See also #753.

Cl **63** *SC* **63.3.2.1** *P* **429** *L* **10** # **63**

Concita Saracino — Aethra

Comment Type **T** *Comment Status* **A**

The minimal n for 32TC-PAM constellations (12<n<=89) is inconsistent with the minimal rate for 32TC-PAM ("2.368Mb/s") .

SuggestedRemedy

In case of 12<n<=89 change "2.368Mb/s to 5.696Mb/s, using the 32-TCPAM constellation"with"832kb/s to 5.696Mb/s, using the 32-TCPAM constellation"==>832=64*13
or,eventually, in case 12=<n<=89 Change with"768kb/s to 5.696Mb/s, using the 32-TCPAM constellation"==>768=64*12

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change operator in equation: 12=<n<=89
Change text with"768kb/s to 5.696Mb/s, using the 32-TCPAM constellation"==>768=64*12

Cl **63** *SC* **63.3.2.1** *P* **429** *L* **26** # **756**
Horvat, Michael Infineon Technologies

Comment Type **E** *Comment Status* **R**
Equation 63-4:
In case of 32-TC PAM the minimum n value starts at 37.

SuggestedRemedy
Replace 12 with 37 in equation 63-4

Proposed Response *Response Status* **C**
REJECT.
The n=12 lower limit for 32-TCPAM was agreed in EFM and is consistent with agreements in T1E1.4 & ITU.

Cl **63A** *SC* **63A** *P* **540** *L* **38** # **323**
Tom Mathey Independent

Comment Type **E** *Comment Status* **A**
need a space between word 63A-1 and word will

SuggestedRemedy

Proposed Response *Response Status* **C**
ACCEPT.

Cl **63A** *SC* **63A** *P* **552** *L* **1** # **322**
Tom Mathey Independent

Comment Type **T** *Comment Status* **A**
Clause 63A is normative, has a number of "shall", there are no pics for any of the shalls

SuggestedRemedy
Include PICS

Proposed Response *Response Status* **C**
ACCEPT.

Cl **63A** *SC* **63A.3.1** *P* **550** *L* **46** # **331**
Simon, Scott Cisco Systems, Inc.

Comment Type **TR** *Comment Status* **A**
No default behavior profiles are specified for the managementless case

SuggestedRemedy
Add text specifying that the default profile shall be profile #2.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Would propose the following text instead:
The default profile shall be profile #7 (Annex B).

Cl **63B** *SC* *P* **554** *L* **30** # **546**
James, David JGG

Comment Type **E** *Comment Status* **A**
Excess capitalization and punctuation.

SuggestedRemedy
Change:

63B.3 Performance Test Cases.
==>
63B.3 Performance test cases

63B.4 Deployment Guidelines
==>
63B.4 Deployment guidelines

Proposed Response *Response Status* **C**
ACCEPT.

Cl **63B** *SC* **63B** *P* **556** *L* **1** # **324**
Tom Mathey Independent

Comment Type **T** *Comment Status* **A**
Clause 63B is normative, has a number of "shall", there are no pics for any of the shalls

SuggestedRemedy
Include PICS

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** *SC* *P* **435** *L* **1** # **523**
James, David JGG

Comment Type **E** *Comment Status* **A**
Excess capitalization

SuggestedRemedy
Change:
Multi-Point MAC Control
==>
Multi-point MAC control

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Multi-point MAC Control

Cl **64** *SC* *P* **436** *L* **7** # **524**
James, David JGG

Comment Type **E** *Comment Status* **A**
Excess capitalization: proper nouns and first-word-of-heading only.

SuggestedRemedy
Change:

Ethernet Passive Optical Network (EPON)
==>
Ethernet passive optical network (EPON)

Optical Line Terminal (OLT)
==>
optical line terminal (OLT)

Optical Network Units (ONU)
==>
optical network units (ONU)

Multi-Point Control Protocol (MPCP)
==>
multi-point control protocol (MPCP)

Multi-Point MAC Control sublayer
==>
multi-point MAC control sublayer

MAC Control sublayer
==>
MAC control sublayer

Figure 64–1—PON Topology Example
==>
Figure 64–1—PON topology example

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
With exception of MAC Control which is a proper noun

Cl **64** *SC* *P* **451** *L* **5** # **525**
James, David JGG

Comment Type **E** *Comment Status* **R**
Blank space is confusing; one doesn't know if its a TBD or no-action.

SuggestedRemedy
Replace blank state actions with an em-dash.

Proposed Response *Response Status* **C**
REJECT.
Blank states are no-action

Cl **64** *SC* *P* **460** *L* **4** # **526**
James, David JGG

Comment Type **E** *Comment Status* **A**
Dont' break the figure number across lines.

SuggestedRemedy
Within figure style, use a non-breaking hyphen.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** *SC* *P* **463** *L* **34** # **314**
Tom Mathey Independent

Comment Type **T** *Comment Status* **A**
For the exit from state COMPLETE DISCOVERY, it is nice that something is being tested.

SuggestedRemedy
It is customary to place the name of the variable, timer, etc. that is being tested in the extit condition.

Proposed Response *Response Status* **C**
ACCEPT.
See 674

Cl **64** *SC* *P* **469** *L* **27** # **527**
James, David JGG

Comment Type **E** *Comment Status* **A**
How can a default value be 48-bit, 32-bit, 16-bit and boolean value?

SuggestedRemedy
Make this comprehensible.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Editor will clarify vector values per element

Cl **64** *SC* *P* **477** *L* **21** # **528**

James, David JGG

Comment Type **TR** *Comment Status* **R**

You should ABSOLUTELY NOT ever show fields with the LSB on the left, since everywhere else it is shown on the right.

SuggestedRemedy

1) Put LSB on the right and have the arrow scan right to left.
2) Apply this convention to all of the standard.

Proposed Response *Response Status* **C**

REJECT.

The style where the LSB is at the left is consistant with the style used throughout 802.3.

The proposed convention can not be applied to all of the 802.3 standard as this outside of the scope of 802.3ah.

Accepted unanimously.

Cl **64** *SC* *P* **482** *L* **7** # **529**

James, David JGG

Comment Type **E** *Comment Status* **A**

Inconsistent notation.

SuggestedRemedy

Change:
Reserved ==> reserved

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* *P* **485** *L* **45** # **549**

James, David JGG

Comment Type **E** *Comment Status* **A**

PICS should start on their own page.

SuggestedRemedy

Force a page break before 64.5

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* *P* **485** *L* **45** # **530**

James, David JGG

Comment Type **E** *Comment Status* **R**

Excessive length subclause title, which would mandate manual table-of-contents updates to correct wrapping error, which is (in itself) prone to human errors.

SuggestedRemedy

1) Delete: , Multi-Point ...
2) Put nonbreaking space within Clause 64.
^ nonbreaking

Proposed Response *Response Status* **C**

REJECT.
PICS proforma heading takes up almost an entire line, clause heading name when appended always intrudes on at least an additional line.

Cl **64** *SC* *P* **489** *L* **6** # **531**

James, David JGG

Comment Type **E** *Comment Status* **A**

Wrong font size in Value/Comment column.

SuggestedRemedy

Use correct style and character styles.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.1** *P* **437** *L* **12** # **687**

Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **A**

Incorrect reference. Clause 58 refers to 100Mb/s PHY and not EPON PHY.

SuggestedRemedy

Change to #CrossRef# Clause 60.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.1** *P* **437** *L* **13** # **14**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Refering to the text below:
"However, a MAC Control client cannot assume the existence of additional MAC Control functions, as defined in Clause 31 annexes, in a remote DTE."

Since MAC Control is optional as defined in clause 31 this statement is redundant and should be deleted.

SuggestedRemedy

Delete: "However, a MAC Control client cannot assume the existence of additional MAC Control functions, as defined in Clause 31 annexes, in a remote DTE."

Proposed Response *Response Status* **C**

ACCEPT.
Also correct cross reference in same paragraph

Cl **64** *SC* **64.1** *P* **437** *L* **9** # **13**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Refering to the text below from line 9:

"Automatic discovery of end stations is performed, culminating in registration through binding of an ONU to a bridge port by allocation of a Logical Link ID (see LLID in #CrossRef# 65.1.2.4.2), and dynamic binding to a MAC connected to the bridge."

The OLT need not be connected to a bridge. Bridges are a feature of the 802 Architecture and compatability with IEEE 802.1 Bridging is a requirement of the IEEE 802.3ah PAR. However the OLT may be connected to an End Station, Layer 3 Router, or a Higher Layer Application Gateway.

SuggestedRemedy

Replace "bridge" in the paragraph above with "OLT"

The changed text is shown below:
"Automatic discovery of end stations is performed, culminating in registration through binding of an ONU to a OLT port by allocation of a Logical Link ID (see LLID in #CrossRef# 65.1.2.4.2), and dynamic binding to a MAC connected to the OLT."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.1.2** *P* *L* **34** # **1141**

Maislos, Ariel Passave

Comment Type **E** *Comment Status* **A**

Cross reference hyperlink seems broken.

SuggestedRemedy

Fix cross reference.
At other locations as well.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.1.2** *P* **437** *L* **33** # **1011**

Thompson, Geoff Nortel

Comment Type **TR** *Comment Status* **A**

It appears that P2P Emulation assigns an additional MAC address at the OLT for each real ONU added to the system. I believe that this concept is a violation of RAC Policy formulated to preserve the OUI address space. That is, 48 bit assignments will not be made to virtual entities.

SuggestedRemedy

This or any derivative draft should be reviewd by the RAC for conformance to RAC guidelines for use of registration values.
If the use of locally adminitered addresses could be mandated (though I can't quite see how and have it still be Ethernet) that would probably finesse the problem.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See 15.

Cl **64** *SC* **64.1.2** *P* **438** *L* **9** # **15**

Thomas Dineen — Dineen Consulting

Comment Type **TR** *Comment Status* **A**

In regard to the concept of Virtual MACs as shown in figure 64-2 it has come to my attention that there is still some confusion in the group with regard to the question of whether each Virtual MAC shown within the OLT Stack of figure 64-2 has a unique individual address.

My first thought is that this is unnecessary since the LLID concept can in effect be used to unique unicast addressing while using a single MAC address for all of the Virtual MACS shown in figure 64-2.

For those of the group who disagree and thus want to assign a unique MAC address to each Virtual MAC you need to be advised that some of the members of 802.3 and sponsoring organizations such as IEEE 802, and the IEEE Registration Authority (RAC) may provide vehement opposition. This will occur because of the perception that assignment of addresses to Virtual MACs waists MAC addresses and thus contributes to the premature exhaustion of the 802 address space.

SuggestedRemedy

Add a statement in 64.1:

"Although figure 64-2 and supporting text describe multiple or Virtual MACs within the OLT there is a single assigned unicast MAC address for the OLT. Within the EPON Network MACs are uniquely identified by their LLID which is dynamically assigned by the Registration Process"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
My response to this would be that this case is similar to a layer 2 switch with multiple ports. It is the implementer's prerogative to assign the MAC addresses, and in many cases all ports share the same address.

Add:
Although Figure 64-2 and supporting text describe multiple MACs within the OLT, it is strongly recommended that a single unicast MAC address be used by the OLT. Within the EPON Network MACs are uniquely identified by their LLID which is dynamically assigned by the registration process.

Geoff requests that a copy of the relevant page in the draft be sent to Tony Jeffree as RAC chair.

Cl **64** *SC* **64.1.4** *P* *L* **32** # **1142**

Maislos, Ariel — Passave

Comment Type **E** *Comment Status* **A**

instanses

SuggestedRemedy

instances

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.2.2** *P* **441** *L* **40** # **16**

Thomas Dineen — Dineen Consulting

Comment Type **TR** *Comment Status* **A**

"The purpose of the Multiplexing Control is to allow only one of the multiple clients to transmit to the RS layer at any one time."

Referring to the test below from line 40:
"The purpose of the Multiplexing Control is to allow only one of the multiple clients to transmit to the RS layer at any one time."

This text is a bit confusion in that the MAC sits between the Multiplexing Control Layer and the RS.

SuggestedRemedy

Replace the original text with the following:

"The purpose of the Multiplexing Control is to allow only one of the multiple MAC Clients to transmit to its associated MAC and subsequently to the RS layer at any one time."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.2.2** *P* **441** *L* **51** # **337**

Brown, Benjamin Indepedent

Comment Type **TR** *Comment Status* **A**

Need a discussion here about the enforcement of interframe spacing since the deference function within a MAC is not adequate to cover the case of multiple MACs transmitting through a single PHY

SuggestedRemedy

Add the following paragraph:

"The deference process within each individual MAC cannot be used to enforce an interframe spacing between packets from different MACs. Multiplexing Control is responsible for delaying sequential packets to different MACs in order to provide adequate interframe spacing at the PHY for proper end-of-packet delineation as well as any additional delay for other purposes (e.g. Forward Error Correction)."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
A solution enforcing IPG and IFSStretch as presented in kramer_1_10_03.pdf
Additional text is to be supplied for closing the comment.

Straw poll to proceed with this direction:
Y:13
N: 1
A: 2

Cl **64** *SC* **64.2.2.6** *P* **443** *L* **21, 9** # **1249**

Lee Sendelbach IBM

Comment Type **E** *Comment Status* **R**

What is UCT? I could find no reference to this in the text.

SuggestedRemedy

Please add to glossary or add into text somehow.

Proposed Response *Response Status* **C**

REJECT.
UCT stands for unconditional transition. UCT is defined in 21.5 where state diagram conventions are defined. At 64.1.4 the appropriate reference is provided.

Cl **64** *SC* **64.2.3.1** *P* **445** *L* **24** # **310**

Tom Mathey Independent

Comment Type **E** *Comment Status* **A**

64.2.3.1 constants are not in alphabetical order.
64.2.3.2 variables are not in alphabetical order.
64.2.3.3 functions are not in alphabetical order.

SuggestedRemedy

Place all in alphabetical order.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.2.3.1** *P* **445** *L* **27** # **900**

Frazier, Howard SWI

Comment Type **T** *Comment Status* **A**

"time_quanta" is used extensively in this Clause, but is never defined except on this line.

SuggestedRemedy

Define "time_quanta" as a constant equal to 16 bit times, in 64.2.3.1.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.2.3.1** *P* **445** *L* **34** # **17**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

The sentence at line 34 shown below is somewhat redundant to clauses 3 and 36:
“Space is reserved for the MAC overheads including: preamble (8 bytes), DA (6 bytes), SA (6 bytes), FCS (4), and PCS trailer (5 bytes for /T/R/R/I/).”

SuggestedRemedy

Rewrite the sentence as follows:
“Space is reserved for the MAC overheads including: preamble, DA, SA, FCS, and the End Of Packet Delimiter (EPD). The sizes of the above listed MAC overhead items are described in Clause 3 subsections 3.1.1. The size of the EPD is described in Clause 36 subsection 36.2.4.14"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.2.3.1** *P* **445** *L* **36** # **309**
Tom Mathey Independent

Comment Type **T** *Comment Status* **A**

5 bytes does not equal 4 symbols

SuggestedRemedy

Corect to what was intended

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Will scrub. It was previously demonstrated that 4 symbols were 5 bytes because /I/ is 2 bytes.

Cl **64** *SC* **64.2.3.6** *P* **448** *L* **18** # **49**
Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**

In PARSE TIMESTAMP box "timestamp<== data [16:47]"

SuggestedRemedy

Change in "timestamp<== data [17:48]"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Correctuion should be move to [16:47] across the document clearing inconsistancies.
See 18

Cl **64** *SC* **64.2.3.6** *P* **448** *L* **30** # **50**
Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**

At the beginning of Note in Figure 64-9: ..."opcode-specifc ...". A letter"i" is missing

SuggestedRemedy

Change in "opcode-specific"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.2.3.6** *P* **449** *L* **18** # **18**
Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the equation shown below which was lifted from state PARSE TIMESTAMP in figure 64-10:
“timestamp <= data[17:48]”

I think this should be 16:47 assuming we are starting with 0. This would then align with the same statement of the PARSE TIMESTAMP State shown in figure 64-9.

SuggestedRemedy

Change 17:48 to 16:47.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.2.3.6** *P* **449** *L* **29** # **51**
Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**

At the beginning of Note in Figure 64-10: ..."opcode-specifc ...". A letter"i" is missing

SuggestedRemedy

Change in "opcode-specific"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.2.3.6** *P* **451** *L* **13** # **19**
Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to figure 64-12 and the transition from state GATED to state TRANSMIT READY. The current qualifying equation is:
“TransmitFrame (DA, SA, Length/Type, data)”
This is not mutually exclusive to the other transition from state GATED.

SuggestedRemedy

Add a transmitAallowed to the equation:
“transmitAallowed * TransmitFrame (DA, SA, Length/Type, data) “

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.2.3.6** *P* **451** *L* **36** # **1130**

Chan Kim ETRI

Comment Type **T** *Comment Status* **D**

In Fig 64-12, in CHECK SIZE, laser_on, sync_time, laser_off should be considered.

SuggestedRemedy

In the size comparison, chage "sizeof(data)+tail_guard" to "sizeof(data)+tail_guard+laser_on+laser_off+sync_time".

Proposed Response *Response Status* **Z**

WITHDRAWN.
This check is performed after turning on the laser so laser_on and sync_time should not be checked.
Because stopTime is already calculated considering laser_off , laser_off should not be checked again.
So it appears that the requirement is convered already by the existing diagram.

Cl **64** *SC* **64.3** *P* **451** *L* **51** # **20**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to:
“Optical Multi-Point functional block”
Figure 64-3 no longer includes a reference to the above block.

SuggestedRemedy

Change reference to: “Multi-Point MAC Control” and augment the following lettered items to align to the new diagram.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.1** *P* **452** *L* **14** # **21**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to: “Optical Multi-Point”
Figure 64-3 no longer includes a reference to the above block.

SuggestedRemedy

Change reference to: “Multi-Point MAC Control” in the following locations:
Page 452 Line 14
Page 452 Line 36
Page 452 Line 37

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.1** *P* **452** *L* **30** # **22**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the text below:
“h) When operated, the network is asymmetrical, with the station connected to the network feeder assuming the role of master, and the station connected to the node assuming the role of slave.”

Why introduce the new terminology of “network feeder” and “node” at this location in the text?

SuggestedRemedy

Rewrite the text to be:
“h) When operated, the network is asymmetrical, with the OLT assuming the role of master, and the ONU assuming the role of slave.”

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.2** *P* **452** *L* **36** # **898**

Frazier, Howard SWI

Comment Type **E** *Comment Status* **A**

Subclause cross references should not be preceded by the word "Clause".
The word "Clause" is used only when refering to a whole clause, e.g. "Clause 2".

SuggestedRemedy

Delete the word "Clause" before "2.3" on line 36 and before "4.3.2" on line 37.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.2** *P* **452** *L* **38** # **692**

Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **A**

Wrong spelling of consistent.

SuggestedRemedy

Change consistant to consistent.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.3.2** *P* **452** *L* **45** # **1012**

Thompson, Geoff — Nortel

Comment Type **TR** *Comment Status* **R**

Point to Point emulation is an out of scope function that is only required for bridging.
As closely as I can tell, from the carrier point of view, it is not part of their requirements.
Carriers want a non-peer network that does not support direct ONU to ONU communication on a peer basis.

SuggestedRemedy

Split P2P Emulation from EFM as a separate PAR for joint development with 802.1 to be formulated as a separate amendment to 802.1D (similar to 802.11 & 802.12) in clause 6.5 distinct from 6.5.1. Further have PON as a separate (Carrier oriented) 802.3 standard that is more fully oriented to the market requirements of carriers.

Proposed Response *Response Status* **U**

REJECT.
Splitting the P2P emulation as an 802.1 project is not possible as the function is located wholey inside the RS layer between the MAC and the PHY, a location that is not exposed to an 802.1 project.

In regards to dividing the 802.3 standard, see 952.

Cl **64** *SC* **64.3.3.2** *P* **453** *L* **1** # **52**

Concita Saracino — Aethra

Comment Type **E** *Comment Status* **A**

At the beginning of the line: ..."aditional ...". A letter"d" is missing

SuggestedRemedy

Change in "additional"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.3.3** *P* **453** *L* **7** # **1246**

Lee Sendelbach — IBM

Comment Type **E** *Comment Status* **A**

broadcast misspelled.

SuggestedRemedy

Fix it.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.3.4** *P* **453** *L* **32** # **313**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **A**

requirements for delay variation must go into relevant clause, also not clear if MAC stack includes the PHY

SuggestedRemedy

Place requirements of delay variation into relevant clauses. Ok to reference from this subclause.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Timing constraint parameters that were previously in place in Clasue 64 with 32 bit time variation were split into two parts: 16 bits for protocol and MAC, 16 bits for PHY in timing variation.
16 bits assigned to PHY were not implemented in Clause 65 as originaly intended.

Add following text to 65.3 as 65.3.4
65.3.4 Delay requirements
The MPCP protocol relies on strict timing based on distribution of timestamps. A compliant implementation needs to guarantee a constant delay through the MAC and PHY in order to maintain the correctness of the timestamping mechanism. The actual delay is implementation dependant however a complying implementation
shall maintain a delay variation of no more than 16 bit times through the implemented PHY stack.

Cl **64** *SC* **64.3.4** *P* **453** *L* **42** # **693**

Lynskey, Eric — UNH-IOL

Comment Type **E** *Comment Status* **A**

Wrong word

SuggestedRemedy

Change 32 bits counter to 32 bit counter.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.4** *P* **453** *L* **42** # **23**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the sentence below:
"The OLT has a 32 bits counter."

SuggestedRemedy

Suggest a reword to help with clarity:
"The OLT has an OLT Timer which is implemented as a 32 bit counter."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The OLT has a timer which is implemented as a 32 bit counter.

Cl **64** *SC* **64.3.4** *P* **453** *L* **45** # **24**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the sentence below:
"The ONU also has a 32 bits counter."

SuggestedRemedy

Suggest a reword to help with clarity:

"The ONU also has an ONU Timer which is implemented as a 32 bit counter."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The ONU also has a timer which is implemented as a 32 bit counter.

Cl **64** *SC* **64.3.4** *P* **453** *L* **54** # **25**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Change "counter value" to "timer value".

SuggestedRemedy

Change "counter value" to "timer value".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.5** *P* **454** *L* **43** # **26**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Change "local counter" to "local timer".

SuggestedRemedy

Change "local counter" to "local timer".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.5** *P* **454** *L* **45** # **53**

Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**

A letter"s" is missing in word "tranmit clock"

SuggestedRemedy

Change in "transmit clock"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.6** *P* **455** *L* **6** # **1131**

Chan Kim ETRI

Comment Type **T** *Comment Status* **A**

The text and formula don't match.

SuggestedRemedy

Change the text to "The comparison is made by subtracting b from a and .."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.7** *P* **455** *L* **13** # **1247**

Lee Sendelbach IBM

Comment Type **T** *Comment Status* **R**

Text says "The periodicity of these windows is unspecified and left to the implementer." Do we really want to leave this open? Do we really want to not specify some large upper bound so that according to standards we should have been discovered by now?

SuggestedRemedy

Agree on a value and put it in the standard.

Proposed Response *Response Status* **C**

REJECT.
In some situations, for example when all expected ONUs are discovered, there is no longer a requirement for an active discovery process.
For that reason it is not possible to define a minimal periodicity for this process.

Cl **64** *SC* **64.3.7** *P* **455** *L* **26** # **1132**

Chan Kim ETRI

Comment Type **T** *Comment Status* **R**

The processing latency in ONU should be bound. Otherwise, OLT should set aside a long time in the later part of the discovery window. The current draft is assuming using 0 for unknown RTT. This is shown in the state diagram. Since this is not the only method, this should be explicitly identified.

SuggestedRemedy

specify that OLT should use RTT value of zero for discovery gate.

Proposed Response *Response Status* **C**

REJECT.
64.3.3.4 line 35 provides the requested ONU processing delay.

Cl **64** *SC* **64.3.7** *P* **456** *L* **15** # **28**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the term “Assigned port n” in the REGISTER Message:

I think this is really the LLID, so why not call it LLID?

SuggestedRemedy

Change “Assigned port n” to “LLID”.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.7** *P* **456** *L* **28** # **27**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the text below lifted from line 28:
“Logical Link Established”

The concept of Logical Link is defined and used in IEEE 802.2 Logic Link Control. I would suggest a name change to avoid a name collision with the IEEE 802.2 Standard.

SuggestedRemedy

Change “Logical Link Established” to “Discovery Handshake Completed”

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.7.4** *P* **458** *L* **45** # **54**

Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**

A letter"i" is missing in word "transmssion"

SuggestedRemedy

Change in "transmission"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.7.5** *P* *L* **25** # **1148**

Maislos, Ariel Passave

Comment Type **E** *Comment Status* **A**

reisterStatus

SuggestedRemedy

registerStatus

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.7.5** *P* **459** *L* **23** # **701**

Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **A**

The name of the field in the primitive lists register_status, and the textual description calls it registerStatus. Likewise, the REGISTER state of Figure 64-19 refers to it as registerStatus.

SuggestedRemedy

Change register_status to registerStatus. This also appears on line 34.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.7.5** *P* **459** *L* **23** # **700**

Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**

The definition of MA_CONTROL.request(DA, register, ID, register_status) states that the registerStatus parameter holds the values of accept or deny. This primitive is called in figure 64-19 and the registerStatus parameter is checked against Ack, reregister, and Nack. It is my belief that the registerStatus parameter should take on the value contained within the flags field of the REGISTER MPCPDU defined in Table 64-5.

SuggestedRemedy

Change to: The parameter registerStatus takes on the indication supplied by the flags field in the REGISTER MPCPDU as defined in Table 64-5. This also appears on line 34.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.7.5** *P* **459** *L* **23** # **55**

Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**

The same parameter (REGISTER STATUS) is typed in different ways:
pag 459 line23, 34 and 36 "register_status"
pag 459 line25 "reisterStatus"
pag 463 in figure 64-19 "registerStatus"
pag 464 in figure 64-20 "registerstatus"

SuggestedRemedy

Use only one name: "register_status" or "registerStatus"

Proposed Response *Response Status* **C**

ACCEPT.
Use registerStatus

Cl **64** *SC* **64.3.7.5** *P* **459** *L* **25** # **29**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the term ID in the MA_CONTROL.request message and “ID holds the LLID assigned by the client” If this is the case why call it ID? Why not call it LLID?

SuggestedRemedy

On Page 459 Line 23
Page 459 Line 27
Page 459 Line 38

Replace “ID” with “LLID” and delete the following sentence “ID holds the LLID assigned by the...”
Add: “The parameter LLID holds the new value assigned by the OLT Client for the attempted registration”

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.7.5** *P* **459** *L* **3** # **1133**

Chan Kim ETRI

Comment Type **T** *Comment Status* **A**

The definition of MA_CONTROL.request(DA,register,starTime,grantLength,length) is missing which is used to initiate discovery processing in OLT ans shown in Figure 64-17.

SuggestedRemedy

add text for MA_CONTROL.request(DA,register,start_time,grant_length,length) that was in Draft 1.732 but omited in this version. But this primitive is for OLT only and MA_CONTROL.inidication(SA,register,start_time,grant_length) should be defined for ONU.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Interfaces to be scrubbed.
See 901

Cl **64** *SC* **64.3.7.5** *P* **459** *L* **3** # **901**

Frazier, Howard SWI

Comment Type **TR** *Comment Status* **A**

There are multiple opcode-specific definitions of the primitives MA_CONTROL.request and MA_CONTROL.indication, with varying and inconsistent parameter lists, and all of the definitions are presented in textual form, without structure.

As an example, the MA_CONTROL.request primitive described on page 466 has the parameter list (report, n, report_list), yet the MA_CONTROL.request primitive parameter list as defined in Clause 2 always begins with the destination_address, *followed* by the opcode and the request_operand_list.

SuggestedRemedy

Restate all of the MA_CONTROL.request and MA_CONTROL.indication primitive definitions in Clause 64 using the structure found in 2.3.3 and 2.3.4, each time an opcode-specific parameter list is defined.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.7.6** *P* **443** *L* **1** # **34**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

This comment applies to all state machines in clause 64. I have noticed several instances where the defined state transition for exiting a state are not mutually exclusive. In this case it is possible that two or more transition equations can become true in the same instant. In this case what do you intend to happen?

For example review the state transitions which exit the state WAIT in Figure 64-23 on Page 467. What happens if both transitions become true at the same instant?

SuggestedRemedy

Review the state machines of clause 64 which I have listed below:
64.2.2.6
64.2.3.6
64.3.7.6
64.3.8.6
64.3.9.6

Examine each state and its exit transitions to determine if all transitions are mutually exclusive. Fix the transition equations as required. Please excuse me for not providing an exact text remedy in this comment, however I believe that the comment addresses serious technical flaws in the draft that should be addressed.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor will review state machines for mutual exclusive exit conditions.

Cl **64** *SC* **64.3.7.6** *P* **460** *L* **1** # **31**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

This comment applies to all state machines in clause 64. When the state machines use “Messages” as defined in 64.3.7.5 the messages that are used are incorrect or inaccurate in that in many instances the parameters of the message as instanced in the state machine do not match those defined in the message in 64.3.7.5 or parameters are missing or renamed. I would submit that the instanced messages including the enumeration of their parameters should exactly match those defined in 64.3.7.5

SuggestedRemedy

Review each instance of each message in all state machines in clause 64 and update as required so as to exactly match the definition and parameters as defined in 64.3.7.5.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor will review state machines for correct usage of message definitions and parameters.

Cl **64** *SC* **64.3.7.6** *P* **461** *L* **11** # **1134**

Chan Kim ETRI

Comment Type **T** *Comment Status* **D**

The start time of the discovery gate is not compensated by RTT because it's unknown.
ONU only sees this start time and grant length.
grantLength contains the random delay and actual frame transmission time.
Current document sounds like opening more window in OLT than the discovery gate length seen by the ONUs because of the unknown RTT.
This assumes using value of zero for unknown RTT.(Because it's not compensated, the reqeust frame will arrive much later) This should be clearly shown.
We can either
1. use zero for unknown RTT for discovery gate and keep some space after the actual discovery window. or,
2. set aside some time period before the discovery window and use the maximum RTT value.
Current choice is number 1.

SuggestedRemedy

clearly identify that we use RTT value of zero for discovery gate for clarity.

Proposed Response *Response Status* **Z**

WITHDRAWN.

Cl **64** *SC* **64.3.7.6** *P* **461** *L* **20** # **1135**

Chan Kim ETRI

Comment Type **T** *Comment Status* **A**

to wait until the start of discovery windown, the state diagram sets a counter and waits for it to expire.
But This is implementation specific. In ONU gate processing, it just waits until localTime = currentGrant.start without any counter.

SuggestedRemedy

remove wait_for_window_timer and change the transition condition to "localTime = startTime".
This is more to the point.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.7.6** *P* **463** *L* **28** # **1136**

Chan Kim ETRI

Comment Type **T** *Comment Status* **D**

In WAIT FOR REGISTER ACK state, transition condition "opcode = REGISTER_ACK" doesn't clearly indicate frame reception. In control parser cases, we could use this syntax because frame reception was explicitly shown in previous states. But in this case, it's syntactically not correct.
This applies to other diagrams.

SuggestedRemedy

add "message reception and" before the condition

Proposed Response *Response Status* **Z**

WITHDRAWN.
In previous discussions in appears that OPCODE = ZZZ transition is sufficient.
For group discussion if a need for change exists.

Cl **64** *SC* **64.3.7.6** *P* **463** *L* **32** # **30**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to “If (flag = success)”:
This is not the normal format for these conditionals.

SuggestedRemedy

Delete: “If (flag = success)”
Change transition from “true” to “flag=success”
Change transition from “false” to “flag!=success”

Proposed Response *Response Status* **C**

ACCEPT.
See 674

Cl **64** *SC* **64.3.7.6** *P* **464** *L* **15** # **33**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

The transition from state REGISTER_REQ to state RETRY which is qualified by the term “insideDiscoveryWindow” is not mutually exclusive to the other transitions from the REGISTER_REQ state. What happens if two of these conditions occur at the same instant?

SuggestedRemedy

Add the term “insideDiscoveryWindow” to the other three transitions.

Proposed Response *Response Status* **C**

ACCEPT.
Add !insideDiscoveryWindow to other three transitions from REGISTER_REQ

Cl **64** *SC* **64.3.7.6** *P* **464** *L* **42** # **32**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **D**

Referring to the transition from state LOCAL_DEREGISTER to REGISTERED in figure 64-20. I do not believe we would want to transition back to the REGISTERED state after sending the DEREGISTERED Message. I would suggest that we transition all the way back up to the WAIT State in a manor similar to the transition from REMOTE_DEREGISTER.

SuggestedRemedy

Delete the transition from state LOCAL_DEREGISTER to state REGISTERED.

Add a transition from state LOCAL_DEREGISTERED to state WAIT.

Proposed Response *Response Status* **Z**

WITHDRAWN.
The intention of this transition is to reduce all cases of deregistration into deregistration by the OLT, thus simplifying the logic.
The ONU requests deregistration from the OLT, however this is actually performed through the REMOTE_DEREGISTRATION route.

Cl **64** *SC* **64.3.8.5** *P* **466** *L* **31** # **902**

Frazier, Howard SWI

Comment Type **E** *Comment Status* **A**

Spelling error.

SuggestedRemedy

"numenclature" s/b "nomenclature"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.8.6** *P* **467** *L* **35** # **35**

Thomas Dineen — Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the global transition “registered=true” into the DISCOVERY_COMPLETED state. My interpretation of the transition as written implies that this transition will be taken continuously whenever the machine enters the state and the variable register is true. I doubt that this is what you intended!

SuggestedRemedy

I would suggest using a rising edge detect function otherwise known as a state change detect function so that the transition occurs when the variable registered transitions from false to true.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See 705

Cl **64** *SC* **64.3.9.2** *P* **469** *L* **44** # **1119**

Law, David — 3Com

Comment Type **TR** *Comment Status* **A**

No modification that I can find is provided to the sublayers between the MAC Control sublayer and the PMD to carry this signal from this state machine to the PMD.

In addition there is no modification provided to the GMII to support this signal.

SuggestedRemedy

Sublayers that are missing modification are the MAC, RS, PCS and PMA.

In respect to the GMII either provide the additional signa for Laser Control signal or add text that states the GMII is not supported.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
A solution maintaining GMII and avoiding layering violations as presented in kramer_1_10_03.pdf

Cl **64** *SC* **64.3.9.5** *P* **472** *L* **22** # **897**

Frazier, Howard — SWI

Comment Type **T** *Comment Status* **A**

"actually" is superfluous.

SuggestedRemedy

delete "actually".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.9.5** *P* **472** *L* **24** # **57**

Concita Saracino — Aethra

Comment Type **E** *Comment Status* **A**

A letter"e" is missing in word "tru"

SuggestedRemedy

Change in "true"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.9.5** *P* **472** *L* **24** # **896**

Frazier, Howard — SWI

Comment Type **E** *Comment Status* **A**

typo? What is the value "tru"?

SuggestedRemedy

Replace with "true".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.9.5** *P* **472** *L* **24** # **36**

Thomas Dineen — Dineen Consulting

Comment Type **E** *Comment Status* **A**

Change “tru” to “true”

SuggestedRemedy

Change “tru” to “true”

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.9.6** *P* **473** *L* **3** # **37**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **D**

Referring to the text below lifted from Line 3:
"Instantation of state machines as described is performed for all MACs."

I would suggest that this function is not required for broadcast MACs?

SuggestedRemedy

Rewrite as:

"Instantiation of state machines as described is performed for all Unicast MACs."

Proposed Response *Response Status* **Z**

WITHDRAWN.
When performing discovery functions the broadcast MAC is used. It appears that the statement is correct for all MAC types.

Cl **64** *SC* **64.3.9.6** *P* **474** *L* **13** # **39**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the text shown below from Line 13.
"for each i in n*(start, length)"

I am unclear as to the exact meaning of the (start, length) parameters.

SuggestedRemedy

Please elaborate on the meaning of the (start, length) parameters in this context or add an informative note which is included in the final standard (Not an Editor's Note).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
In state WAIT add 'counter=0'
In state INCOMING GRANT add looping transition conditioned on i<n
at end of state INCOMING GRANT add counter++
From INCOMING GRANT change UCT to 'counter=n'
remove 'for each ..' from INCOMING GRANT
rename I to counter in indexing inside state.
Define counter as variable counting from 0 to 4

Cl **64** *SC* **64.3.9.6** *P* **474** *L* **3** # **38**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the "registered=false" global transition into state FLUSH. I would suggest that we need to do this transition just once on the transition of registered from true to false.

SuggestedRemedy

Use a state change detect function in the transition equation.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add state REGISTERED WAIT
Add transition from WAIT to REGISTERED WAIT when registered = true
Add transition from REGISTERED WAIT to FLUSH when registered = false
remove global transition into FLUSH
UCT transition from FLUSH to WAIT
both WAIT and REGISTERED WAIT have OPCODE based transition to INCOMING GRANT

Cl **64** *SC* **64.3.9.6** *P* **475** *L* **35** # **58**

Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**

In STOP TX box a wrong typing word:"insideDiscvoeryWindow"

SuggestedRemedy

Change in "insideDiscoveryWindow"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **64.3.9.6** *P* **475** *L* **47** # **59**

Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**

IT is used a box called B2B GRANT but B2B is an abbreviation never explained

SuggestedRemedy

Add an explanation of B2B

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Rename B2B to read BACK TO BACK

Cl **64** *SC* **64.4.1** *P* **477** *L* **32** # **60**
Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**
It's typed a wrong word:"appripriate"

SuggestedRemedy
Change in "appropriate"

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** *SC* **64.4.2** *P* **478** *L* **1** # **61**
Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**
At the beginning of line "Flags. This is an 8 bit bitfield flag register..."

SuggestedRemedy
Change in "Flags. This is an 8 bit flag register..." Bit flag is used in page 482 line 1, page 483 line 9 and page 484 line 44 as well

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** *SC* **64.4.2** *P* **479** *L* **16** # **1137**
Chan Kim ETRI

Comment Type **T** *Comment Status* **D**
there is no way of assigning static gates to the ONUs.

SuggestedRemedy
put reserved bytes after Number of grants/Flags so that vendors can use the reserved byte.

Proposed Response *Response Status* **Z**
WITHDRAWN.
Static gates were discussed at early stages of the project. A static configuration was deemed unstable and leading to many error conditions. Protocol was designed to be stateless for gating with grants expiring after use.

Cl **64** *SC* **64.4.3** *P* *L* **15** # **1150**
Maislos, Ariel Passave

Comment Type **E** *Comment Status* **A**
bit bitfield flag

SuggestedRemedy
bit flag

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
See 61

Cl **64** *SC* **64.4.3** *P* **480** *L* **15** # **62**
Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**
At the beginning of line "Report bitmap. This is an 8 bit bitfield flag register..."

SuggestedRemedy
Change in "Report bitmap. This is an 8 bit flag register...". Bit flag is used in page 482 line 1, page 483 line 9 and page 484 line 44 as well

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** *SC* **64.4.3** *P* **481** *L* **13** # **1138**
Chan Kim ETRI

Comment Type **T** *Comment Status* **R**
there is no way of sending special flags in the report.

SuggestedRemedy
put a reserved byte after Number of queue sets and put a reserved byte after report bitmap. so that vendors can use the reserved byte.

Proposed Response *Response Status* **C**
REJECT.
Special signaling was discussed at the early stages of the project and rejected. There is problem of interoperability when interpretation is not defined in standard.

Cl **64** *SC* **64.4.5** *P* **484** *L* **16** # **1139**
Chan Kim ETRI

Comment Type **T** *Comment Status* **R**
The order of fields looks ackward.

SuggestedRemedy
make the flags come before assigned port.

Proposed Response *Response Status* **C**
REJECT.

Vote on comment approve response (reject comment)
Yes: 9
No: 1
Abstain: 3

Cl **64** SC **64.5** P L **44** # **1151**
Maislos, Ariel Passave

Comment Type **E** *Comment Status* **A**
some PICS not updated

SuggestedRemedy
update PICS

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** SC **64.5** P **485** L **45** # **599**
Grow, Robert Intel

Comment Type **E** *Comment Status* **A**
PIC should begin on a new page

SuggestedRemedy
Insert page break

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** SC **643.9.3** P **471** L **9** # **56**
Concita Saracino Aethra

Comment Type **E** *Comment Status* **A**
at the end of line a wrong typing word:"bnroadcast"

SuggestedRemedy
Change in "broadcast"

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** SC **649** P **436** L **1** # **311**
Tom Mathey Independent

Comment Type **T** *Comment Status* **A**
A quick review of the state diagrams showed a never ending litany of variables, constants, etc. which had no definitions.

SuggestedRemedy
Scrub entire clause for constants, variables, function, timers, etc. which are used in state diagrams but have no definition, or an incomplete definition, or mismatch of any sort. All exits from states need to be deemed mutually exclusive by simple examination of the text, without detailed knowledge.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** SC **all** P L # **843**
Brand, Richard Nortel Networks

Comment Type **TR** *Comment Status* **R**
The concept of point to point emulation is foreign to 802.3 and was introduced to allow compliance with 802.1D bridging

SuggestedRemedy
Move this section to new document and as a part of the revised PAR, remove requirement to comply with 802.1

Proposed Response *Response Status* **U**
REJECT.

Compliance to 802.1D is a requirement of our PAR and of the LMSC policies and procedures.
In regards to dividing the 802.3 standard, see reponse to comment 952.

Cl **64** SC **Figure 64-1** P **436** L **22** # **903**
Frazier, Howard SWI

Comment Type **T** *Comment Status* **A**
There is no sentence introducing Figure 64-1.

Also, since Clause 66 now includes several P2MP topology examples, it would be good to provide a forward reference to them.

SuggestedRemedy
Add the following sentence before Figure 64-1:

A simplified P2MP topology example is depicted in Figure 64-1. Clause 66 provides additional examples of P2MP topologies.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** SC **Figure 64-12** P **451** L **36** # **1144**
Maislos, Ariel Passave

Comment Type **T** *Comment Status* **A**
2 is used instead of TQ_size constant

SuggestedRemedy
replace value with defined constant

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** *SC* **Figure 64-13** *P* **454** *L* **4** # **899**
Frazier, Howard SWI

Comment Type **E** *Comment Status* **A**
Font size is too large for callouts in Figure 64-13.

SuggestedRemedy
Use smaller font size.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** *SC* **Figure 64-14** *P* *L* **1** # **1145**
Maislos, Ariel Passave

Comment Type **E** *Comment Status* **A**
Figure is sourced in Visio

SuggestedRemedy
Convert figure into FrameMaker format

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** *SC* **Figure 64-15** *P* **457** *L* **8** # **1146**
Maislos, Ariel Passave

Comment Type **T** *Comment Status* **A**
arrow for timestampDrift missing

SuggestedRemedy
add inbound arrow titled timestampDrift

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** *SC* **Figure 64-16** *P* **457** *L* **28** # **1147**
Maislos, Ariel Passave

Comment Type **T** *Comment Status* **A**
arrow for timestampDrift missing

SuggestedRemedy
add inbound arrow titled timestampDrift

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** *SC* **Figure 64-17** *P* **461** *L* **11** # **694**
Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**
The exit condition from IDLE to SEND DISCOVERY WINDOW is not defined in 64.3.7.5. It seems that this should be the MA_CONTROL.request(gate, discovery) primitive pictured in figure 64-15. The message and its applicable parameters need to be defined.

SuggestedRemedy
Change exit condition to: MA_CONTROL.request(DA, gate, discovery, startTime, grantLength). Define this primitive as: The service primitive used by the client at the OLT to initiate the Discovery Process. The DA parameter contains the well-known MAC Control multicast address.
DA: multicast MAC Control address
gate:
discovery:
startTime: start time of the discovery window
grantLength: length of the discovery window process

Proposed Response *Response Status* **C**
ACCEPT.

Cl **64** *SC* **Figure 64-17** *P* **461** *L* **15** # **696**
Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**
The TransmitFrame primitive is not being passed the Length/Type value as shown in 64.3.7.5. Also, the TransmitFrame primitive can only be passed four fields, DA, SA, Length/Type, and data. Figure 31B-1 shows an example of how the TransmitFrame primitive was called for a PAUSE frame. The different subfields within the data field were separated by the '|' symbol, whereas the different fields themselves were separated by commas. It also seems that all necessary fields should be supplied to the TransmitFrame primitive. Perhaps this means that the additional required fields such as timestamp and number of grants needs to be explicitly called out as well.

SuggestedRemedy
Add a field in the TransmitFrame message call that contains the proper Length/Type value and modify the rest of the fields so that only four fields are passed to this primitive. Additionally, add the extra subfields if necessary.

Proposed Response *Response Status* **C**
ACCEPT.
Length/type will be set to the MAC Control EtherType. Extra fields will be added as necessary.

Cl **64** *SC* **Figure 64-17** *P* **461** *L* **25** # **695**

Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**

It is not clear what the value of the discovery_window_size_timer should take on. The length parameter is not defined in 64.3.7.5, and it seems that the length of the discovery window should take on the value of grantLength.

SuggestedRemedy

Change to [start discovery_window_size_timer, grantLength]

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Variable length should be clarified to different name like discoveryWindowLength.
The waitng period is definetely not grantLength as RTT must be accounted for.

Cl **64** *SC* **Figure 64-19** *P* *L* **42** # **1149**

Maislos, Ariel Passave

Comment Type **T** *Comment Status* **A**

registered <= false

should be

registered <= true

SuggestedRemedy

fix per comment

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **Figure 64-19** *P* **463** *L* **12** # **697**

Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **A**

In the REGISTER state, TransmitFrame is spelled wrong.

SuggestedRemedy

Change from TransmiFrame to TransmitFrame.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **Figure 64-19** *P* **463** *L* **32** # **698**

Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**

In the COMPLETE DISCOVERY state, the value of the flag field is looked at to see if it is success. Table 64-6 shows that there are three values for the flag: Nack, Ack, and Reserved. Also, this should be brought outside the state and evaluated as an exit condition.

SuggestedRemedy

Remove if(flag = success) from the state. Replace the current exit conditions with flag = Ack and flag != Ack.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See also 674

Cl **64** *SC* **Figure 64-19** *P* **463** *L* **35** # **702**

Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **A**

The DISCOVERY NACK state does not pass all of the necessary fields to the MA_CONTROL.indication primitive.

SuggestedRemedy

Add the additional fields: SA, ID, RTT.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **Figure 64-19** *P* **463** *L* **42** # **703**

Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**

In the REGISTERED state, the variable registered should be set to true.

SuggestedRemedy

Change to registered <= true.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **Figure 64-19** *P* **463** *L* **7** # **674**

Daines, Kevin World Wide Packets

Comment Type **TR** *Comment Status* **A**

Two comments on this state diagram.
1) "TransmiFrame" is misspelled.
2) The notation "if(flag = success)" is wrong.

See 21.5 and 1.2.1 for more state diagram notation conventions.

SuggestedRemedy

1) Fix.
2) Remove "if(flag = success)". Change exit condition "true" to read "flag = success". Change exit condition "false" to read "flag != success".

Proposed Response *Response Status* **C**

ACCEPT.
See 30

Cl **64** *SC* **Figure 64-19** *P* **463** *L* **9** # **699**

Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**

There are additional exit conditions from REGISTER to IDLE that need to be accounted for. Table 64-5 lists all of the possible status values.

SuggestedRemedy

Change the return to the IDLE state to ELSE so that all status conditions other than Ack or reregister will bring you to the IDLE state.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **Figure 64-2** *P* *L* **9** # **1140**

Maislos, Ariel Passave

Comment Type **T** *Comment Status* **A**

Arrow indicating laser control line is missing

SuggestedRemedy

Add arrow originating in Multi-Point MAC Control entering PMD. Title arrow laserControl*
Add note to Figure saying:
For the ONU MAC Control communicates with the PMD sublayer through the PMD service interface messages PMD_SIGNAL.request.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See 1119

Cl **64** *SC* **Figure 64-20** *P* **464** *L* **46** # **704**

Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**

It seems that after leaving the LOCAL_DEREGISTER state, you would not want to go back into the REGISTERED STATE, but rather into the REGISTER PENDING or WAIT states.

SuggestedRemedy

Change the exit condition from LOCAL DEREGISTER to go to the WAIT state.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The intention of this transition is to reduce all cases of deregistration into deregistration by the OLT, thus simplifying the logic.
The ONU requests deregistration from the OLT, however this is actually performed through the REMOTE_DEREGISTRATION route.
See 32

Cl **64** *SC* **Figure 64-23** *P* **467** *L* **31** # **706**

Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**

Figure 64-23 allows the ONU to transmit REPORT frames even before it is registered. The ONU should not be allowed to transmit any frames except for REGISTER_REQ and REGISTER_ACK messages before discovery is completed.

SuggestedRemedy

Add the qualifier, * registered, to the exit condition from WAIT into SEND REPORT.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **Figure 64-23** *P* **467** *L* **32** # **675**

Daines, Kevin World Wide Packets

Comment Type **TR** *Comment Status* **A**

Parameters is misspelled (once) and possibly looks like a placeholder value. I don't think "parameters.." should be allowed as it is ambiguous.

SuggestedRemedy

Fix line 32 and 37.

Proposed Response *Response Status* **C**

ACCEPT.
Replace parameters.. With complete argument list.

Cl **64** *SC* **Figure 64-23** *P* **467** *L* **35** # **705**

Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**

The global transition into DISCOVERY COMPLETED when registered = true will force the device to always stay in that state when registered = true. The timer will continuously be restarted and the wait state will never be entered.

SuggestedRemedy

Move the DISCOVERY COMPLETED state above the WAIT state and rename the WAIT state to WAIT 2. Create a new state, WAIT 1 that has the BEGIN entrance condition. The exit condition will be registered = true, and this will lead to the DISCOVERY COMPLETED state. Everything else stays the same.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **Figure 64-25** *P* **473** *L* **16** # **707**

Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**

The global transition into DISCOVERY COMPLETED when registered = true will force the device to always stay in that state when registered = true. The timer will continuously be restarted and the wait state will never be entered.

SuggestedRemedy

Move the DISCOVERY COMPLETED state above the wait state and have the exit condition from INIT to DISCOVERY COMPLETED be: registered = true. Add an exit condition from INIT to SEND GATE that is the same that currently exists from WAIT. The exit condition from DISCOVERY COMPLETED to WAIT will be UCT.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **Figure 64-25** *P* **473** *L* **7** # **676**

Daines, Kevin World Wide Packets

Comment Type **TR** *Comment Status* **A**

I don't think "parameters.." should be allowed as it is ambiguous.

SuggestedRemedy

Fix, three places.

Proposed Response *Response Status* **C**

ACCEPT.
Replace parameters.. With complete argument list

Cl **64** *SC* **Figure 64-26** *P* **474** *L* **7** # **677**

Daines, Kevin World Wide Packets

Comment Type **T** *Comment Status* **A**

Are 'while loops' and 'for loops' allowed in state diagrams? Also, the "IF (condition) THEN statement " notation is not followed.

SuggestedRemedy

Guess we need to determine if 'while loops' and 'for loops' are allowed.

Also, add "THEN" to "IF" statement, 2 places.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Modify IF to add THEN as required.

For loop is to be removed see comment 39

Use italic for for/then/else in state diagrams when using Pascal constract.

Cl **64** *SC* **Figure 64-27** *P* **475** *L* **1** # **895**

Frazier, Howard SWI

Comment Type **TR** *Comment Status* **A**

In the category of "Ugliest State Machine in the Draft", the winner is....

Figure 64-27. Don't feel bad, just about every WG ballot draft gets hit with this comment.

Tradition dictates that I identify this comment with a "TR".

SuggestedRemedy

You can make this state machine much easier to understand, edit and maintain if you abbreviate long, wordy names like "random_delay_timer_done" as "rdt_done", and "currentGrant.discovery" as "cgd".

Really long assignments like: MA_CONTROL.indication(gate, localTime, effectiveLength, status <= active, currentGrant.forceReport, currentGrant.discovery) are very hard to read in the tiny font used inside a state diagram. This lengthy expression should be collapsed in the diagram, and then expanded in 64.3.9.5

Also, use all of the white space that has been provided. The bottom portion of the diagram seems needlessly crowded.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use the following abbreviations:
random_delay_timer to rndDlyTmr
random_delay_timer_done to rndDlyTmr_done
gate_periodic_timer to gtPerTimer
gate_periodic_timer_done to gtPerTmr_done
grant_window_timer to gntWinTmr
grant_window_timer_done to gntWinTmr_done
grant_start_timer to gntStTmr
grant_start_timer_done to gntStTmr_done
MA_CONTROL.request to MACR
MA_CONTROL.indication to MACI

also clean lines on state diagram to ensure no spillover.

Cl **64** *SC* **Figure 64-27** *P* **475** *L* **26** # **678**

Daines, Kevin World Wide Packets

Comment Type **TR** *Comment Status* **A**

" IF (condition) THEN statement1; statement2 ELSE statement " convention is not followed.

SuggestedRemedy

Fix "START TX" state per above.

Proposed Response *Response Status* **C**

ACCEPT.
Fix also in additional locations where IF is not followed by THEN by adding THEN to statements.

Cl **64** *SC* **Figure 64-28** *P* **479** *L* **16** # **1014**

Tae-Whan Yoo ETRI

Comment Type **TR** *Comment Status* **R**

All of the message fields in GATE MPCPDU except "Number of grants/Flags" are in even number of octets. It is, therefore, inconvenient to interpret the messages below the "Number of grants/Flags" in GATE MPCPDU when the logic is implemented to process in other than 8 bits, say 16 bits or 32 bits.

SuggestedRemedy

It is recommneded to add one octet after "Number of grant/Flags" for two purposes:
1) To enable the messages after "Flags" to be interpreted in the unit of even octets.
2) To provide a reserved field for future application.

Proposed Response *Response Status* **U**

REJECT.
All parameters are specified using the required number of bits.
A compact form is required for the message.

Vote on comment
Approve response (reject comment)
Yes: 8
No: 1
Abstain: 3

Cl **64** *SC* **Figure 64-30** *P* **481** *L* **14** # **1015**

Tae-Whan Yoo ETRI

Comment Type **TR** *Comment Status* **R**

All of the message fields in REPORT MPCPDU except "Number of queue sets" and "Report bitmap" are in even number of octets. It is, therefore, inconvenient to interpret the messages below the "Number of queue sets" and "Report bitmap" in REPORT MPCPDU when the logic is implemented to process in other than 8 bits, say 16 bits or 32 bits.

SuggestedRemedy

It is recommneded to add one octet after "Number of queue sets" and another single octet after "Report bitmap" for two purposes:
1) To enable the messages to be interpreted in the unit of even octets.
2) To provide a reserved field for future application.

Proposed Response *Response Status* **U**

REJECT.
All parameters are specified using the required number of bits.
A compact form is required for the message, where there is a shortage of space.

Vote on comment
Approve response (reject comment)
Yes: 9
No: 1
Abstain: 3

Cl **64** *SC* **Figure 64-32** *P* **484** *L* **14** # **1016**

Tae-Whan Yoo ETRI

Comment Type **T** *Comment Status* **R**

The message fields for REGISTER MPCPDU and REGISTER_ACK MPCPDU are not defined in consistent way. It would be more efficient in processing MPCPDU if the messgae fields are arranged in even octet unit.

SuggestedRemedy

It is recommended to rearrange the message fields in the following order:
DA/SA/88-08/00-05/Time_Stamp/Flags/Echoed_pending_grants/Assigned_Port/Synch_Time/Pad_or_Reserved/FCS.

Proposed Response *Response Status* **C**

REJECT.

Cl **64** *SC* **Figure 64-33** *P* **485** *L* **22** # **1017**

Tae-Whan Yoo ETRI

Comment Type **T** *Comment Status* **R**

The message fields for REGISTER MPCPDU and REGISTER_ACK MPCPDU are not defined in consistent way. It would be more efficient in processing MPCPDU if the messgae field is arranged in even octet unit.

SuggestedRemedy

It is recommended to add a reserved field of a single octet after "Flags" and rearrange the message fields in the following order:
DA/SA/88-08/00-06/Time_Stamp/Flags/reserved_field(1 octes)/Echoed_assigned_port/Echoed_synch_time/Pad_or_Reserved/FCS.

Proposed Response *Response Status* **C**

REJECT.

Cl **64** *SC* **Figure 64-5** *P* **443** *L* **1** # **691**

Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **A**

Figure 64-5 should be renamed "OLT Multiplexing Control state diagram" since it only applies to the OLT. The ONU does not generate the transmitPending and transmitInProgress signals and therefore cannot control the Multiplexing Control state diagram.

SuggestedRemedy

Rename figure 64-5 to be OLT Multiplexing Control state diagram.
Remove reference to ONU from the transmitEnable[j] variable in 64.2.2.2.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **Figure 64-6** *P* **444** *L* **8** # **1143**

Maislos, Ariel Passave

Comment Type **T** *Comment Status* **A**

Arrow for timestampDrift missing

SuggestedRemedy

Add arrow facing right labeled timestampDrift

Proposed Response *Response Status* **C**

ACCEPT.

Cl **64** *SC* **Figure 64-9** *P* *L* # **196**

Yukihiro, Fujimoto NTT

Comment Type **T** *Comment Status* **A**

In the PARSE TIMESTAMP
timestamp <= data[16:47]
is incorrect

SuggestedRemedy

timestamp <= data[17:48]

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Should use 16:47, and not 17:48 will correct elsewhere for consistency
Also fix 63.1.4 to have indexing of bit vectors start at 0 and not 1.
see 18

Cl **64** *SC* **Figure 64-9** *P* **448** *L* **1** # **690**

Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **R**

There are very few differences between figures 64-9 and 64-10. The only differences that exist are in the PARSE TIMESTAMP state. I recommend combining the two state diagrams into a single diagram with two PARSE TIMESTAMP states, one for the OLT and one for the ONU.

SuggestedRemedy

Create a new variable OLT (or something similar) that is true if the device is an OLT and false if it is an ONU. Use this as the variable to decide which PARSE TIMESTAMP state will be entered.

Proposed Response *Response Status* **C**

REJECT.
Following group discussion on issue decision to maintain two separate diagrams. Intention is to achieve more clarity in understanding OLT and ONU behavior.

Cl **64** *SC* **Figure 64-9** *P* **448** *L* **12** # **689**

Lynskey, Eric UNH-IOL

Comment Type **T** *Comment Status* **A**

When exiting the PARSE OPCODE state, it is not clear what happens if a frame is received that is both not supported and not a timestamp opcode. It would seem as if the exit conditions leading back to WAIT FOR RECEIVE and INITIATE MAC CONTROL FUNCTION would both be active. Recommend checking that the opcode is supported before exiting state. The same comment applies to Figures 64-10 and 64-12.

SuggestedRemedy

To the exit conditions into PARSE TIMESTAMP and INITIATE MAC CONTROL FUNCTION, add: opcode = {supported opcode} *, thus forcing the opcode to be a supported opcode before parsing the timestamp or initiating the mac control function.

Proposed Response *Response Status* **C**

ACCEPT.
Add opcode (member of) {supported opcode}*

Cl **64** *SC* **Figure 64-9** *P* **448** *L* **19** # **312**

Tom Mathey Independent

Comment Type **T** *Comment Status* **A**

The only place the text "newRTT" appears in the draft is in the Figure 64-9 state diagram.

SuggestedRemedy

Scrub entire clause for constants, variables, function, timers, etc. which are used in state diagrams but have no definition, or an incomplete definition, or mismatch of any sort.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor will add definition for newRTT variable.

Cl **64** *SC* **Figure 64-9** *P* **448** *L* **33** # **688**

Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **A**

Incorrect reference to Annex 31B. Should be a reference to Annex 31A. Same error on next page, same line.

SuggestedRemedy

Change to 31A.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* *P* **491** *L* **1** # **532**

James, David JGG

Comment Type **T** *Comment Status* **A**

Excessive length clause title, which would mandate manual table-of-contents updates to correct wrapping error, which is (in itself) prone to human errors.

SuggestedRemedy

Make a shorter clause title.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This will be referred to IEEE staff editor for review of maximum subclause title length.

Cl **65** *SC* *P* **513** *L* **1** # **533**

James, David JGG

Comment Type **T** *Comment Status* **A**

Excessive length subclause title, which would mandate manual table-of-contents updates to correct wrapping error, which is (in itself) prone to human errors.

SuggestedRemedy

1) Delete Extensions of ...
2) Put nonbreaking space within Clause 65.
^ nonbreaking

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This will be referred to IEEE staff editor for review of maximum subclause title length.

Cl **65** *SC* *P* **514** *L* **15** # **534**

James, David JGG

Comment Type **E** *Comment Status* **A**

Inconsistent font size.

SuggestedRemedy

Force a consistent font size (cut and pasted probably brought-over a larger font).

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* *P* **515** *L* **1** # **535**

James, David JGG

Comment Type **T** *Comment Status* **A**

Excessive capitalization.

SuggestedRemedy

65.4.4.2 Preamble Mapping and Replacement
==>
65.4.4.2 Preamble mapping and replacement

65.4.4.4 State Machines
==>
65.4.4.4 State machines

Proposed Response *Response Status* **C**

ACCEPT.

Also, FEC Requirements --> FEC requirements

Cl **65** *SC* **65** *P* **494** *L* **1** # **338**

Brown, Benjamin Indepedent

Comment Type **E** *Comment Status* **A**

Missing word

SuggestedRemedy

Replace "in an Ethernet" with "in a 1000BASE-PX Ethernet"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **65.1.1** *P* **494** *L* **41** # **1120**

Law, David 3Com

Comment Type **T** *Comment Status* **A**

Not sure if the cross reference in the text 'A successful registration process, described in 64.3.8 ...' is correct as subclause 64.3.8 is 'Report processing'.

SuggestedRemedy

Suggest this cross reference be corrected if required - subclause 64.3.7 appears to be the correct reference.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **65.1.2.2** *P* **495** *L* **26** # **339**

Brown, Benjamin — Indepedent

Comment Type **T** *Comment Status* **A**

Registered ONU MACs should never use the value 0x7FFF

SuggestedRemedy

Replace the last sentence of the logical_link_id description with:

Enabled OLT MACs may use any value for this variable. Registered ONU MACs may use any value other than 0x7FFF for this variable.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **65.1.2.3.3** *P* **496** *L* **15** # **383**

Thomas Dineen — Dineen Consulting

Comment Type **TR** *Comment Status* **A**

I am receiving an increasing number of questions from customers which indicate a certain amount of confusion about the implementation of CRC functions and issues of bit ordering.

To assist in clearing up this confusion I am requesting that an informative annex be added to this clause which includes one to three compliant example frames with the associated correct CRC (FCS) value.

These frames will serve as divining rod frames which an implementor can quickly use to verify the integrity of his CRC implementation and thus achieve early inter operability.

Originally this comment was submitted at Task Group ballot and rejected. However some of the comments which arose during the debate raised my interest!

One member asserted that there was no need to include the suggested annex because the test vectors in question were available via the UNH-IOL Test Laboratory. So I recently investigated this avenue of thought.

In a response to my E-mail request of 08/29 Mr. Gerard Nadeau, Consortium Manager of UNH/IOL (grn@iol.unh.edu) sent the following:

“We don't have test vectors. When we test a MAC we are testing it in a system with an IP stack and use Pings and ARPs to stimulate the MAC and generate responses. Also our systems use scripts that would be of no use to you as they are proprietary.”

So the UNH-IOL materials are proprietary and thus not available to all implementors!

Another member suggested that instead of adding a simple annex we should more properly generate a Conformance Specification. But to take this route, seems to me, to be a lot of extra and unnecessary work for what could be in essence, no more than a few pages added to the document in the form of an annex. I would also note that development of a Conformance Document would probably require a PAR or at least an amendment of the IEEE 802.3ah PAR which would be a time consuming process. Clearly the suggestion of a conformance document was intended to raise the bar of difficulty high enough to kill the original comment.

SuggestedRemedy

To assist in clearing up this confusion I am requesting that an informative annex be added to this clause which includes one to three compliant example frames with the associated correct CRC (FCS) value.

Proposed Response *Response Status* **Z**

WITHDRAWN.

This annex will be added presuming it is available in time to meet the editorial dead line for the next draft.

Cl **65** *SC* **65.1.2.3.3** *P* **496** *L* **16** # **316**

Tom Mathey Independent

Comment Type **T** *Comment Status* **A**

Text about CRCs typically include the initial value, and complement if necessary. Copper has now included the residue value.

SuggestedRemedy

What is initial value, what is the residue, and is any complement needed?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Move the text within the figure that states the initial value into the text, adding a shall:

"Before calculation begins, the shift register shall be initialized to the value 0x00." Add an appropriate PICS for this shall.

Put in some place holder text for the residue. Copy text format from Clause 61. Editor will provide value before D2.1.

State explicitly that there is no inversion on the shift register contents:

"The content of the shift register is transmitted without inversion."

Cl **65** *SC* **65.1.2.4.1** *P* **497** *L* **37** # **40**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **D**

Referring to the text below lifter from line 37"
“If the packet is transferred, the SPD shall be replaced with a normal preamble octet and the one or two octets preceding the SPD and the two octets following the SPD are passed without modification.”

This sentence is redundant to 65.1.2.4.

SuggestedRemedy

“If the packet is transferred, the SPD shall be replaced with a normal preamble octet and the one or two octets preceding the SPD and the two octets following the SPD are passed without modification.”

Delete the above sentence.

Proposed Response *Response Status* **Z**

WITHDRAWN.

65.1.2.4 contains no SHALLs and is intended as a short, descriptive narrative of the flow at the receiver. The full details are provided in the sections following it.

Cl **65** *SC* **65.1.2.4.2** *P* **497** *L* **40** # **832**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

In order to support a true P2P Emulation function: if a frame is received by an ONU with a properly formed preamble as specified in 65.1.2 and more specifically in 65.1.2.4, and contains an LLID which dose not match any of the LLIDs values currently associated with the ONU, and has any other frame level errors such as but not limited to those described in Clause 3 the frame should be silently discarded without effecting any Management State or Counters.

This should occur because the mismatch of LLIDs indicates that the frame was not intended for this ONU and would not arrive at this ONU in a true P2P system and thus should not effect the Management State.

This behavior is intended to emulate the true point to point behavior that would be exhibited by legacy point to point links.

SuggestedRemedy

Rewrite 65.1.2.4 item e and add item f:

“e) in support of the P2P Emulation concept: frames received with a valid CRC8, an LLID which dose not match any LLID value currently associated with the ONU, and any other frame errors shall be silently discarded. replacing it with normal inter-frame, without affecting the Management State.
f) otherwise, discard the entire packet, replacing it with normal inter-frame.”

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace the first sentence on line 7 with:

"If no match is found, then the packet shall be discarded within the RS."

Cl **65** *SC* **65.1.2.4.2** *P* **498** *L* **10** # **41**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **D**

Referring to the text shown below which was lifted from line 10.

"If the packet is transferred, then both octets of the LLID field shall be replaced with normal preamble octets."

This sentence is redundant to 65.1.2.4.

SuggestedRemedy

"If the packet is transferred, then both octets of the LLID field shall be replaced with normal preamble octets."

Delete the above sentence.

Proposed Response *Response Status* **Z**

WITHDRAWN.

65.1.2.4 contains no SHALLs and is intended as a short, descriptive narrative of the flow at the receiver. The full details are provided in the sections following it.

Cl **65** *SC* **65.1.2.4.3** *P* **498** *L* **17** # **42**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **R**

Referring to the text shown below which was lifted from line 17.

"If the packet is transferred, then the CRC8 field shall be replace with the SFD."

This sentence is redundant to 65.1.2.4.

SuggestedRemedy

Delete the sentence shown below:

"If the packet is transferred, then the CRC8 field shall be replace with the SFD."

Proposed Response *Response Status* **Z**

WITHDRAWN.

65.1.2.4 contains no SHALLs and is intended as a short, descriptive narrative of the flow at the receiver. The full details are provided in the sections following it.

Cl **65** *SC* **65.2** *P* **81** *L* **42** # **79**

Dawe, Piers Agilent

Comment Type **T** *Comment Status* **A**

Can the "10P FEC correctable errors counter" and "10P FEC uncorrectable errors counter" be combined with any equivalent for 65.2 FEC?

This comment duplicated against 45.2.1 and 65.2.

SuggestedRemedy

?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #218. Work with Clause 45 editor for the appropriate sub clause #.

Cl **65** *SC* **65.2.1** *P* **498** *L* **24** # **43**

Thomas Dineen — Dineen Consulting

Comment Type **TR** *Comment Status* **D**

During sub task force discussion in Korea I became aware of a subtle or maybe not so subtle operational requirement for EPON systems. You cannot run a multi point optical network which consists of some stations which are running the FEC function as specified in Clause 65 and some that are not. Either all stations run the FEC protocol or all do not. By the way when this came up in the discussions there was substantial discussion and disagreement within the group on this issue.

SuggestedRemedy

Add the following text to 65.2.1:
“To maintain full inter-operability including the maintenance of the integrity of the Layer Management Functions and state as specified in Clause 30 the FEC Function if selected for one station on the EPON must be present and selected for all stations on the EPON.”

Proposed Response *Response Status* **Z**

WITHDRAWN.

FEC has been architected so that packets can be transferred between stations regardless of whether they are using FEC or not or 1 is and 1 isn't. If both stations are not using FEC then obviously the advantage provided by FEC does not exist but, in the absence of errors, the packets get through.

A FEC receiver that receives a non-FEC packet passes it through to the PCS without modification. In the absence of errors, the PCS should receive the packet fine.

A non-FEC receiver that receives a FEC packet passes it through to the PCS without modification. In the absence of errors, the PCS detects the first portion of the /S_FEC/ as IDLE and eventually detects the /S/ and receives the packet. At the end of the packet, the PCS detects the first /T_FEC/ and properly ends the packet then reports false-carrier during reception of the parity bytes.

If you see a problem with this, please describe it.

Cl **65** *SC* **65.2.1** *P* **498** *L* **30** # **340**

Brown, Benjamin — Indepedent

Comment Type **TR** *Comment Status* **A**

In conjunction with a comment against clause 64, this last sentence should be modified since it is no longer the MAC that provides the stretched IFS to support the insertion of FEC for OLTs

SuggestedRemedy

Reword the last sentence of the first paragraph to read:

"The MAC layer at the ONU and the Multi-Point MAC Control sublayer at the OLT performs rate adaptation...as described in 4.2.8 for the ONU and 64.2.2 for the OLT."

Another option for this is to replace this sentence with:

"The data link layer performs rate adaptation...for the parity octets. This is described in 4.2.8 for the ONU and 64.2.2 for the OLT.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution to comment #337.

Cl **65** *SC* **65.2.3** *P* **499** *L* **45** # **384**

Thomas Dineen — Dineen Consulting

Comment Type **TR** *Comment Status* **A**

I am receiving an increasing number of questions from customers which indicate a certain amount of confusion about the implementation of Error Detection and Correction Functions and issues of bit ordering.

To assist in clearing up this confusion I am requesting that an informative annex be added to this clause which includes one to three compliant example frames with the associated correct Parity value.

These frames will serve as divining rod frames which an implementor can quickly use to verify the integrity of his CRC implementation and thus achieve early inter operability.
Originally this comment was submitted at Task Group ballot and rejected. However some of the comments which arose during the debate raised my interest!

One member asserted that there was no need to include the suggested annex because the test vectors in question were available via the UNH-IOL Test Laboratory. So I recently investigated this avenue of thought.

In a response to my E-mail request of 08/29 Mr. Gerard Nadeau, Consortium Manager of UNH/IOL (grn@iol.unh.edu) sent the following:

“We don't have test vectors. When we test a MAC we are testing it in a system with an IP stack and use Pings and ARPs to stimulate the MAC and generate responses. Also our systems use scripts that would be of no use to you as they are proprietary.”

So the UNH-IOL materials are proprietary and thus not available to all implementors!

Another member suggested that instead of adding a simple annex we should more properly generate a Conformance Specification. But to take this route, seems to me, to be a lot of extra and unnecessary work for what could be in essence, no more than a few pages added to the document in the form of an annex. I would also note that development of a Conformance Document would probably require a PAR or at least an amendment of the IEEE 802.3ah PAR which would be a time consuming process. Clearly the suggestion of a conformance document was intended to raise the bar of difficulty high enough to kill the original comment.

SuggestedRemedy

To assist in clearing up this confusion I am requesting that an informative annex be added to this clause which includes one to three compliant example frames with the associated correct Parity value.

Proposed Response *Response Status* **Z**

WITHDRAWN.

This annex will be added presuming it is available in time to meet the editorial dead line for the next draft.

Cl **65** *SC* **65.2.3.1** *P* **499** *L* **53** # **341**

Brown, Benjamin — Indepedent

Comment Type **E** *Comment Status* **A**

The description of the Reed Solomon encoder is different here than it is when first introduced on line 51 on the previous page

SuggestedRemedy

Replace "(255,239)" with "(255,239,8)"

Proposed Response *Response Status* **C**

ACCEPT.

Also in 65.2.2

Cl **65** *SC* **65.2.3.3** *P* **500** *L* **25** # **342**

Brown, Benjamin — Indepedent

Comment Type **E** *Comment Status* **A**

"sync is considered to have been achieved" implies this has to do with the synchronization state machine

SuggestedRemedy

Replace "ordered_set and, when the match has less thatn d/2 errors, sync is considered to have been achieved." with "ordered_set with fewer than d/2 errors."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **65.2.3.3** *P* **500** *L* **40** # **343**

Brown, Benjamin — Indepedent

Comment Type **E** *Comment Status* **A**

wrong word

SuggestedRemedy

Replace "disparity neutral" with "disparity preserving"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **65.2.4.2.1** *P* **502** *L* **27** # **344**

Brown, Benjamin Indepedent

Comment Type **E** *Comment Status* **A**

wrong word

SuggestedRemedy

Replace "continuously" with "continually" here and on line 35

Proposed Response *Response Status* **C**

ACCEPT.

"continuous" means unbroken
"continual" means repetitive

This usage is closer to repetitive than unbroken

Cl **65** *SC* **65.2.5** *P* **65-8** *L* **28** # **44**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to figure 65-8. Please note the selector control signal which exits the “FEC Packet Boundaries Detect” Block on the left and enters the two instances of blocks labeled “selector” on the left.

I believe that these selector control signals are driven by two different logic equations and as such should be separated into two unique signals.

SuggestedRemedy

Separate the two selector control signals in figure 65-8.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **65.2.5.1.2** *P* **505** *L* **5** # **45**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the text lifted from line 5 shown below:

"((rx_code-groupŒ/INVALID/)”
I believe that there is an extra “E” right before the /INVALID/. Either that or there is a missing item from 65.2.5.1.1 Notable Conventions.

SuggestedRemedy

Delete the extra “E” at Lines 5 and 8.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the name of 65.2.5.1.1 from Notable Conventions to Notation Conventions

Replace font problem using the "indicates membership" character from Table 21-1

Cl **65** *SC* **65.2.5.1.4** *P* **506** *L* **46** # **46**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

Referring to the text shown below which was lifted from line 46:

"DECODE ([/x]/)"

I believe that the right hand bracket “]” should be moved one space to the right.

SuggestedRemedy

Move the right hand bracket “]” one space to the right after the “/” per 65.2.5.1.1.

Proposed Response *Response Status* **C**

ACCEPT.

This problem also exists in Clause 36 (where I copied it from).

Cl **65** *SC* **65.2.5.3.1** *P* **508** *L* **44** # **47**

Thomas Dineen Dineen Consulting

Comment Type **TR** *Comment Status* **A**

In subsections:
65.2.5.3.1
65.2.5.3.2
65.2.5.3.3

a total of three 16 bit management counters are defined. Given today's line rates I am concerned that 16 bits is a tad small.

SuggestedRemedy

Increase the size of the three counters to 32 bits.

Proposed Response *Response Status* **C**

ACCEPT.

Make them 32 bit counters

Cl **65** *SC* **65.3.1** *P* **509** *L* **45** # **345**

Brown, Benjamin Indepedent

Comment Type **E** *Comment Status* **A**

Flow...

SuggestedRemedy

Move the contents of 65.3.1 to 65.3.3, delete the current contents of 65.3.3
Remove 65.3.1
Renumber 65.3.2 to 65.3.1
Renumber 65.3.3 to 65.3.2

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **65.3.3.1** *P* **511** *L* **37** # **346**

Brown, Benjamin Indepedent

Comment Type **E** *Comment Status* **A**

Extra commas, full sentences, references - rewrite it

SuggestedRemedy

Replace this entire subclause with:

CDR Lock Time (denoted T_CDR) is defined as a time interval required by the receiver to acquire phase and frequency lock on the incoming data stream. T_CDR is measured as the time elapsed from the moment when electrical signal after the PMD at TP4 reaches the conditions specified in 60.8.13.2.1 for receiver settling time to the moment when the phase and frequency are recovered and jitter is maintained for a network with BER of no more than 10^-12 for non-FEC systems, or no more than 10^-4 for FEC enabled systems.

The standard defines a maximal value for T_CDR. The measured value should not exceed be less than this number.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **65.3.3.2** *P* **511** *L* **53** # **347**

Brown, Benjamin Indepedent

Comment Type **E** *Comment Status* **A**

word change

SuggestedRemedy

Replace "Measuring Tcdr time" with "Measure Tcdr"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **65.3.3.2** *P* **512** *L* **30** # **348**

Brown, Benjamin Indepedent

Comment Type **E** *Comment Status* **A**

Change wording

SuggestedRemedy

Replace "at TP4, at the beginning of the locking," with "throughout this test"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **Figure 65-1** *P* **494** *L* **21** # **1013**

Thompson, Geoff — Nortel

Comment Type **E** *Comment Status* **A**

Obsolete style of diagram refers to "LLC - LOGICAL LINK CONTROL" as the exclusive MAC CLIENT for 802.3

SuggestedRemedy

Redit to conform to current style (refer to 1000BASE-T diagram)
"LLC - LOGICAL LINK CONTROL" should be "LLC - LOGICAL LINK CONTROL OR OTHER MAC CLIENT"

Proposed Response *Response Status* **C**

ACCEPT.

Also applies to Figure 65-3

Cl **65** *SC* **Figure 65-1** *P* **494** *L* **29** # **1122**

Law, David — 3Com

Comment Type **E** *Comment Status* **A**

See suggested remedy.

SuggestedRemedy

Typo - Please correct align the text 'PHY' with the PMA sublayer.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **Figure 65-1** *P* **494** *L* **38** # **657**

Daines, Kevin — World Wide Packets

Comment Type **E** *Comment Status* **A**

The lines from the OSI stack to the LAN layer stack don't print out well. May need to change line shading/width.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **Figure 65-6** *P* **502** *L* **1** # **894**

Frazier, Howard — SWI

Comment Type **T** *Comment Status* **A**

The input arrow and output arrow in this block diagram are labeled.

SuggestedRemedy

Please label the input and output arrows.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Label input arrow "tx_code-group"
Label output arrow "ftx_code-group"

Cl **65** *SC* **Figure 65-7** *P* **503** *L* **2** # **893**

Frazier, Howard — SWI

Comment Type **T** *Comment Status* **A**

The input arrow to the 20-bit register is not labeled.

SuggestedRemedy

Please label this arrow.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Label this arrow "rx_bit"

Cl **65** *SC* **Figure 65-8** *P* **503** *L* **25** # **892**

Frazier, Howard — SWI

Comment Type **E** *Comment Status* **A**

Arrows in this diagram are too heavy.

The same is true in Figure 65-6 and Figure 65-7.

SuggestedRemedy

Use same size arrows as Figure 65-10.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **65** *SC* **Figure 65-8** *P* **503** *L* **43** # **891**
Frazier, Howard SWI

Comment Type **T** *Comment Status* **A**
The exit arrow out of the bottom of the selector box in not labeled.

SuggestedRemedy
Please label this arrow.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

Label this arrow "frx_code-group"

Cl **66** *SC* *P* **518** *L* **30** # **536**
James, David JGG

Comment Type **T** *Comment Status* **A**
Wrong font in table entries.

SuggestedRemedy
Apply standard styles to get non-bold 10-point font.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

Will improve fonts as appropriate. Will add to the staff editors check list at publication.

Cl **66** *SC* *P* **518** *L* **30** # **537**
James, David JGG

Comment Type **E** *Comment Status* **A**
Excessive capitalization.

SuggestedRemedy
Discussion and Examples
==>
Discussion and examples

Proposed Response *Response Status* **C**
ACCEPT.

Cl **66** *SC* *P* **520** *L* **14** # **538**
James, David JGG

Comment Type **E** *Comment Status* **A**
Not centered properly.

SuggestedRemedy
Center the "1:2" within each box.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **66** *SC* *P* **520** *L* **46** # **539**
James, David JGG

Comment Type **E** *Comment Status* **A** *DVJ*
Excessive capitalization, and inconsistent acronym usage.

SuggestedRemedy
Change:

CO = central office
ONU = optical network unit
SPE = subscriber premise equipment
OLT = optical line termination

Proposed Response *Response Status* **C**
ACCEPT.

Cl **66** *SC* *P* **521** *L* **15** # **540**
James, David JGG

Comment Type **E** *Comment Status* **R**
Excessive capitalization.

SuggestedRemedy
Change:

66.6 Operations, Administration, and Maintenance
==>
66.6 Operations, administration, and maintenance (OAM)

Proposed Response *Response Status* **C**
REJECT.

IEEE 802.3ah is an ammendment to 802.3. The style is consistant with the 802.3 style and has been reviewed by the IEEE Staff Editor.

Cl **66** *SC* **66** *P* **517** *L* **1** # **140**

Dawe, Piers Agilent

Comment Type **E** *Comment Status* **R**

There doesn't seem to be enough content here to justify a whole clause. Also it appears to be wholly "informative" not normative. It looks more like an annex.

SuggestedRemedy

One option would be to make the contents of this and of 66A into two top level subclauses of an Annex 56A.

Proposed Response *Response Status* **C**

REJECT.

The structure is consistant with previous standards

Cl **66** *SC* **66.2.1** *P* **519** *L* **10** # **317**

Tom Mathey Independent

Comment Type **T** *Comment Status* **A**

Text states that Table 66-1 includes channel insertion losses

SuggestedRemedy

Nothing is in the table about channel insertion losses

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Refer to comment 889. The reference should be to Table 60-1 not 66-1

Cl **66** *SC* **66.2.1** *P* **519** *L* **3** # **142**

Dawe, Piers Agilent

Comment Type **T** *Comment Status* **R**

Another question which needs an answer.

SuggestedRemedy

Tell us what the range of possible split ratios is (min, max).

Proposed Response *Response Status* **C**

REJECT.

The splits will depend on the insertion loss and traffic load (provisioning per customer) as stated by the text. The logical limit will not be a practical constraint.

Cl **66** *SC* **66.2.1** *P* **519** *L* **5** # **889**

Frazier, Howard SWI

Comment Type **E** *Comment Status* **A**

Incorrect cross reference to Table 60-1.

SuggestedRemedy

Change "Table 66-1" to "Table 60-1".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **66** *SC* **66.2.4** *P* **520** *L* **3** # **138**

Dawe, Piers Agilent

Comment Type **T** *Comment Status* **A**

This topology won't work with 16 ONUs unless almost every splitter is different which does not seem economically feasible.

SuggestedRemedy

Delete the subclause and diagram. Or reduce the number of ONUs and write a description of the splitter requirements.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete 66.2.4. Not a practical implementation.

Refer to comment 159

Cl **66** *SC* **66.5** *P* **521** *L* **10** # **147**

Dawe, Piers — Agilent

Comment Type **T** *Comment Status* **A**

More questions which needs answers.

SuggestedRemedy

Do the phone lines have to be unloaded? 62 and 63 specify non-loaded.
Can these signalling schemes coexist with POTS on the same lines?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Refer to Comment 104.

The following sentence will be added:

Non-loaded cable is a requirement of the signalling methods employed.

Will verify with Copper STF about adding the following sentence:
The 10PASS-TS and the 2BASE-TL do not preclude coexistance with POTS.

And add POTS to the abbreviation list if necessary.

Cl **66** *SC* **66.6** *P* **521** *L* **18** # **318**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **A**

Clause 61 phys do not support the uni-directional part of OAM

SuggestedRemedy

Harmonize text with clause 61 phys.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the text from:
"support the optional OAM sublayer as defined in Clause 57."

To read
"support the optional OAM sublayer as defined in Clause 57, with the exception of 2BASE-TL and 10PASS-TS."

Cl **66** *SC* **66.6.1** *P* **521** *L* **23** # **1123**

Law, David — 3Com

Comment Type **T** *Comment Status* **A**

The statement that some 'newer' PHYs support unidirectional mode doesn't seem to be quite correct. The only PHYs that fully support this mode are 100BASE-X and 1000BASE-X. - PONs' half support it but on from the CO side which doesn't seem the most useful feature.

SuggestedRemedy

Suggest that the text 'Some newer physical ...' should read 'Some physical ...'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **66** *SC* **66.6.1** *P* **521** *L* **27** # **319**

Tom Mathey — Independent

Comment Type **E** *Comment Status* **A**

sentence has no verb

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will fix the grammar mistake

Cl **66** *SC* **Figure 66-3** *P* **520** *L* **6** # **159**

Radcliffe, Jerry — Hatteras Networks

Comment Type **T** *Comment Status* **A**

While technically correct, this figure is misleading and difficult to implement and manage in practice. In order to work the splitters labled as 1:2 will have to have a variety of split ratios. Also, the loss budget for the end ONU will be subject to a large number of splitter excess losses.

SuggestedRemedy

Add note to the figure:
"The serial connection must use splittera with a variety of split ratios and is subject to many instances of excess loss from the number of splitter units."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete 66.2.4

Cl **66** *SC* **Figure 66-4** *P* **520** *L* # **197**

Yukihiro, Fujimoto NTT

Comment Type **E** *Comment Status* **A** *all*

Using "OLT" as an equipment with "ONU:Optical Network Unit", OLT should be "Optical Line Terminal".

SuggestedRemedy

Optical Line Termination -> Optical Line Terminal

Proposed Response *Response Status* **C**

ACCEPT.

Will scrub the whole document to ensure consistant usage.

Motion to accept
M: Gerry Passevento
S: Ali Abaye

Y: 9
N: 0
A: 1

Cl **66** *SC* **Table 66-1** *P* **518** *L* **24** # **141**

Dawe, Piers Agilent

Comment Type **T** *Comment Status* **A**

This would be an "ER" comment if there were such a category.

Table leaves questions unanswered which a network planner needs answers to:

What does nominal reach mean? is it a minimum reach (optical) or the maximum to be expected (electrical?)?
If reach can vary, what does it depend on?
If reach can vary, what range of values can it take?
What's a "nominal rate"? What does it depend on? What range of values can it take?

SuggestedRemedy

Write text or use references to answer these questions.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Refer to 106

Cl **66** *SC* **Table 66-1** *P* **518** *L* **24** # **139**

Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**

Table contents should not be bold. Don't use "full" justification in tables. Please make the table full width, it will become shorter.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will improve table

Cl **66** *SC* **Table 66-1** *P* **518** *L* **30** # **890**

Frazier, Howard SWI

Comment Type **E** *Comment Status* **A**

Bad font in table.

SuggestedRemedy

Use appropriate font for body cells of Table 66-1.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **66** *SC* **Table 66-1** *P* **518** *L* **40** # **145**

Dawe, Piers Agilent

Comment Type **E** *Comment Status* **R**

Not all phone lines are copper.

SuggestedRemedy

Change "Copper" to "Electrical" throughout this clause. If appropriate, make the change in other clauses.

Proposed Response *Response Status* **C**

REJECT.

See previous comment response. Nomenclature is accepted in the industry.

Cl **66** *SC* **Table 66-1** *P* **518** *L* **45** # **198**

Yukihiro, Fujimoto NTT

Comment Type **E** *Comment Status* **A**

"P2MP segments may be implemented with a trade off trade off between link span and split ratio listed. Refer to 66.2.1."
"trade off" is duplicated.

SuggestedRemedy

delete a "trade off".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **66A** *SC* *P* **554** *L* **30** # **547**

James, David JGG

Comment Type **T** *Comment Status* **A**

Excess capitalization.

SuggestedRemedy

Change:

Environmental Characteristics for Ethernet Subscriber Access Networks
==>
Environmental characteristics for Ethernet subscriber access networks

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The optics STF will rely on guidance from the editor-in-chief on this issue. The need for consistency with Subclause 1.4 Definitions will be taken into account.

Cl **66A** *SC* *P* **561** *L* **40** # **548**

James, David JGG

Comment Type **E** *Comment Status* **A**

Wrong font size.

SuggestedRemedy

Fix column 1 to use standard styles.

Proposed Response *Response Status* **C**

ACCEPT. Apply right format to table 66A-4.

Cl **66A** *SC* **66A.1** *P* **557** *L* **43** # **160**

Radcliffe, Jerry Hatteras Networks

Comment Type **E** *Comment Status* **A**

The introduction paragraph should state to which clauses it applies. In this case it would be for Clauses 58, 59,and 60 for optical interfaces. In addition, the general environmental consideration also apply to the copper clauses 62 and 63.

SuggestedRemedy

Add text to the introduction paragraph indicating applicability to Clauses 58, 59, 60, 62 and 63.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Will add extra text that says that annex 66A applies to all of EFM, with specific reference to 58, 59, 60, 62 and 63.

Cl **66A** *SC* **66A.1** *P* **557** *L* **44** # **655**

Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **A**

Reference to 802.3ah should be removed. Also, the acronym OAM is incorrectly described.

SuggestedRemedy

Change "The purpose of IEEE 802.3ah (EFM)" to read: "The purpose of EFM".

Also, change "operation, administration and management" to read:
Operations, Administration, and Maintenance" beginning on line 46.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. But in lower case (except EFM).

Cl **66A** *SC* **66A.3.1** *P* **562** *L* **17** # **162**

Radcliffe, Jerry Hatteras Networks

Comment Type **E** *Comment Status* **A**

Add references to IEC and Telcordia documents cited in the body of the text

SuggestedRemedy

Add references to:

GR-63-CORE, "NEBS Requirements: Physical Protection"

GR-468-CORE, "Generic Reliability Assureance Requirements for Optoelectronic Devices Used in Telecommunicaions Equipment

GR-487-CORE, "Generic Requirements for Electronic Equipment Cabinets"

ETSI EN 300 019-1-3, "Equipment Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment Part 1-3: Classification of environmental conditions Stationary use at weatherprotected locations"

ETSI EN 300 019-1-4, "Equipment Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment Part 1-3: Classification of environmental conditions Stationary use at non-weatherprotected locations"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **66A** *SC* **Table 66A-2** *P* **559** *L* **25** # **161**

Radcliffe, Jerry Hatteras Networks

Comment Type **E** *Comment Status* **A**

The numbers should be centered in the columns

SuggestedRemedy

Center the numbers in the columns

Proposed Response *Response Status* **C**

ACCEPT.