Cl **00** *SC* *P* *L* # **759**

Booth, Brad Intel

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

I believe that there is a misuse of "point to point" and "point to multi-point" throughout the draft. The words are being used to describe the noun, and therefore should be hyphenated.

SuggestedRemedy

Change "point to point" to be "point-to-point", and "point to multi-point" to be "point-to-multi-point".

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* *L* # **521**

Grow, Robert Intel

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

Where there is asymetry, the terms "side" and "end" seem to be used interchangably. For example, page 15 line 48 uses both in the same sentence, though copper and P2MP seem to favor "side" and P2P favor "end". The approved standards seem to mostly use "end" in conjunction with a link (also note consistency with near-end, etc.)

SuggestedRemedy

Search for "side" and replace with "end" where referring to a link.

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* *L* # **314**

Dawe, Piers Agilent

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

Is counting errors as fast as possible, silly? A count of e.g. PCS coding violations will be too skewed towards any bursts of errors, lightning strikes etc. and not represent the link's performance in terms of likelihood of dropped packets? Where should the count be throttled? Would "errored microseconds" be more use?

SuggestedRemedy

I would guess that a throttle of data rate/1000 (or data rate/100 with FEC) would be suitable.

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* *L* # **743**

Booth, Brad Intel

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

TM symbols are not required in headers after the first page.

SuggestedRemedy

Update headers.

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* *L* # **315**

Dawe, Piers Agilent

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

The optics track needs the help of the whole group to decide the question below.

Over a year ago the optics track decided that the clause 22 MDIO was becoming obsolete, for three reasons:
The register space was nearly full, new registers would have to go somewhere else;
a 5 V interface becomes increasingly un-compatible with modern CMOS; and
a consistent approach would make it easier to build and manage equipment with both 'new' and 'old' port types.

The first point has been solved by 45.2.8 Clause 22 extension.
We thought that to solve the second, a way of accessing clause 22 registers through a clause 45 interface had been addressed. But actually, Annex 22D, Clause 22 access to Clause 45 MMD registers goes the opposite way.

So, how to access a register space for managing 100M/1G PHYs through a modern interface?

Option 1: use Cl.22 protocols but at low voltage, using ST code to distinguish between Cl.22 or Cl.45 register sets. But is Cl.45 better for addressing multiple entities on the same bus? Also, station management software has to handle two schemes.
Need to change this sentence in 45.2 'For cases where a single entity combines Clause 45 MMDs with Clause 22 registers, then the Clause 22 registers may be accessed using the Clause 45 electrical interface and the Clause 22 management frame structure.' to something like 'For cases where a single entity contains Clause 22 registers, the Clause 22 registers may be accessed using the Clause 45 electrical interface and the Clause 22 management frame structure.' and change anything that stops this scheme working if there are no Clause 45 MMDs in the entity.

Option 2: put the whole Cl.22 register space in one of the unused Cl.45 device addresses. Quick and dirty, allows consistent MDIO frame format, capable of addressing multiple entities?, but condemns software to extra complexity going forward.

Option 3: use the clause 45 10G registers for their equivalent functions for 100M and 1G optical Ethernet. Leaves the legacy issues behind, provides consistent register set and MDIO frame format, and more than adequate register space. Needs more editorial effort to create the appropriate capability registers in Clause 45.

Option 4: put off doing anything more on this in the EFM project. Implementers can use dual buses or proprietary voltage schemes. Is this option 1 without the standardisation? Or is it unworkable?

Option other: ...

For info: EFM optics do not generally require any new registers; the exception is for FEC.

If the committee chooses options 1, 2 or 4, then subclauses 58.2, 59.2, 60.2 should be removed. If the committee chooses option 3, they should be kept, possibly with additional information added.

As the commenter is not an expert in this area, assistance and guidance from logicians and editors would be very welcome.

SuggestedRemedy

As the committee decides.

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* *L* # **500**

Grow, Robert Intel

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

Full-duplex is not used correctly. A section that illustrates this well is 56.1 (bottom of page 158). P2MP does not use full duplex links -- it is a passive star.

EFM copper confuses the existing uses of full-duplex and half-duplex (see 1.1.1, 1.1.1.1, 1.1.1.2, 1.4.135, 1.4.139, 4.1.1, 4.1.2.1.1, etc.) In the published standards, full-duplex text generally is written with the assumption that CRS and COL do not need to be implemented in full duplex mode.

Similar terms are used interchangably or linked. For example "full duplex" as shorthand for "full duplex mode", (802.3ah, page 24 line 13 and 17), full duplex link (802.3, 4.1.1) and full duplex operation being synonomous with full duplex mode(802.3, 4.1.1) and MAC full duplex mode linked with an underlying full duplex PMD link).

The base

SuggestedRemedy

Harmonize use of full duplex and half duplex with the published standard. I believe this requires a full search of the base documents to make sure text does not contradict functionality exploited by EFM.

Most of the conflicts with EFM copper uses will require base document changes.

I believe full duplex and half duplex should not be used in P2MP descriptions except for describing full duplex emulation or when specifically referencing a mode as described in the base document.

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* *L* # **301**

Paul Fitzgerald — Circadiant Systems

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

Add requirement that transceivers and line cards must be capable of going into loopback mode so that what is received is retransmitted out of its paired transmitter.

SuggestedRemedy

This will make testing components and systems much easier - in the factory and in the field.

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* *L* # **522**

Grow, Robert — Intel

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

The draft uses network, provider and CO for describing one end of access links, and customer, user and subscriber for the other end. (All these noted when searching on "side", but there might be other terms also used.)

SuggestedRemedy

Pick one for each end -- search and replace other terms.

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* *L* # **795**

Thompson, Geoffrey — Nortel

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

The entirely new concept to 802.3 of doing shared access via an entirely new access protocol is hidden through lack of use of the proper terminology to describe what is going on. The P2MP portion of the proposal is, in fact, a new shared access protocol of the TDMA variety yet none of the following standard terms appears appear anywhere in the description thereof:

multiple access
access method
time division
TDMA
access domain
MAC protocol

In fact the only mentions of a "shared LAN" is the claim that P2MP is emulating a shared LAN rather than admitting it is one!

SuggestedRemedy

Come clean. P2MP is at its most basic level a master-slave TDMA LAN. Revise text to describe P2MP fully as such using established 802 terminology for multiple access shared LANs.

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* *L* # **528**

Grow, Robert — Intel

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

Inappropriate uses of error rate.

SuggestedRemedy

Search for error rate and replace with error ratio to be consistent with similar change implemented by IEEE Std 802.3aj-2003.

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* *L* # **343**

Dawe, Piers — Agilent

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

Are we sure we haven't messed up the legacy Ethernet?
This rather vague comment is to replace an old TR which was triggered by counters(?) which fouled up regular Ethernet, and I've submitted it to encourage all readers to consider if the implications of the changes and additions in EFM could cause an unintended issue to existing Ethernets, including 10G Ethernet.

SuggestedRemedy

Check list:
Counters and registers still OK for legacy Ethernet?
Management stuff still OK?
100BASE-LX10 and 1000BASE-LX10 not tied to any public-networks-specific requirements?
No damage to 10G?
No outlawing current MAC, RS, PCS, PMAs in subscriber access networks?
Other?

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* **1** *L* **9** # **721**

James, David — JGG

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

Excessive capitalization

SuggestedRemedy

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

Proposed Response *Response Status* **O**

Cl **00** *SC* *P* **General** *L* # **419**

Roy A Bynum

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

This standard tends to support the functional requirements for a limited scope of Subscription Data Packet Services over a privately owned, non-subscription, network facility instead of the functional requirements for a Subscription Network facility itself carrying an unlimited scope of services. In spite of this lack of meeting the defined objective of supporting a "Subscription Network", this standard goes a long way toward meeting the requirements of the segment of the market that is within the limited scope of Subscription Data Packet Services that is emerging to support non-tradition telephony and data services.

SuggestedRemedy

None

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **1** *L* **1** # **850**

Tom Mathey Independent

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

P802.3ae Clause 1.2.5 line 27 has defined the method used for hex notation as 0x. This is now part of the base standard.

SuggestedRemedy

Scrub entire document and change all hex numbers to read as "0x"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **1** *L* **20** # **722**

James, David JGG

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

Excessive capitalization

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* **O**

Cl **00** *SC* **0** *P* **1** *L* **31** # **723**

James, David JGG

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

Excessive capitalization

SuggestedRemedy

IEEE 802.3 Media Access Control (MAC) and MAC Control sublayers with a family of Physical (PHY) Layers.
==>
IEEE 802.3 Media access control (MAC) and MAC cntrol sublayers with a family of physical (PHY) layers.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **1** *L* **32** # **724**

James, David JGG

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

Excessive capitalization

SuggestedRemedy

These Physical Layers include optical fiber and voice grade copper cable Physical Medium Dependent sublayers (PMDs) for
==>
These physical layers include optical fiber and voice grade copper cable physical medium dependent sublayers (PMDs) for

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **1** *L* **34** # **725**

James, David JGG

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

Excessive capitalization

SuggestedRemedy

introduces the concept of Ethernet Passive Optical Networks (EPONs), in which
==>
introduces the concept of Ethernet passive optical networks (EPONs), in which

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **1** *L* **35** # **726**

James, David JGG

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

Excessive capitalization.
This is just one example. Instruct your editors to eliminate capitalization on everything except proper nouns and the first word of headings and sentences.

The profuse use of capitalization, for emphasis, field name delineation, acronyms, etc. is unnecessary and distracting. With so many capitals, its hard to tell when one sentence or field name begins and another one ends.

Start at the front, work through the end, and have a policy in mind. Simply repeating the 802.3 mistakes is not sufficient.

SuggestedRemedy

for network Operations, Administration and Maintenance (OAM) is included
==>
for network operations, administration and maintenance (OAM) is included

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **10** *L* **1** # **730**

James, David JGG

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

Unnecessary page, not part of the specification.
This is normally provided (or so says Tom Alexander) for the convenience of editors when the document is in FrameMaker source. Its not needed in pdf, and (in fact) could lead to some interesting translation ambiguities.

SuggestedRemedy

Remove this and following page.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **2** *L* **1** # **727**

James, David JGG

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

This trademark usage page is blank, with no notice of any desire to change or method of change.

This comments was not addressed when marked as editorial, in previous working group ballots. I hope action is taken this time.

SuggestedRemedy

Either:
1) Eliminate the page
2) Put some text describing what and when will happen to this page.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **2** *L* **3** # **729**

James, David JGG

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

Excess capitalization.

SuggestedRemedy

protocol specified in IEEE Std 802.3 is Carrier Sense Multiple Access with Collision Detection (CSMA/CD).
==>
protocol specified in IEEE Std 802.3 is carrier sense multiple access with collision detection (CSMA/CD).

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **2** *L* **3** # **728**

James, David JGG

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

Excess capitalization.

SuggestedRemedy

—Specific requirements CSMA/CD Access Method and Physical Layer Specifications)
==>
—Specific requirements CSMA/CD access method and physical layer specifications)

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.3** *P* **14** *L* **12** # **511**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
Multiple references are already in IEEE Std 802.3ae-2002.

SuggestedRemedy
Remove references at lines 12, 43.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.3** *P* **14** *L* **15** # **390**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Not sure if FC-PH is being replaced by FC-PI.

SuggestedRemedy
Ask Schelto.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.3** *P* **14** *L* **24** # **512**
Grow, Robert Intel

Comment Type **TR** *Comment Status* **D**
This reference is already in IEEE Std 802.3ae-2002, but with a year and different title.

SuggestedRemedy
Delete or correct as appropriate. If the document number and title are correct, it should be a "Change" (to 802.3ae), not an "Insert".

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.3** *P* **14** *L* **38** # **513**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
Not in alphabetical order.

SuggestedRemedy
Move three definitions to correct alphabetical order (line 23).

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.3** *P* **14** *L* **43** # **382**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
IEC references

SuggestedRemedy
Change 61753-1-1 to IEC 61753-1. Add IEC 61754-1. Probably remove IEC 61754-4 following 59.12.3.8 PICS LPC2.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* # **379**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Please add PON and EPON to the definitions list.

SuggestedRemedy
Maybe we can re-use a definition from G.983?

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **18** # **517**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
Superflous period (full stop) in multiple places.

SuggestedRemedy
Search for "." and replace with ")"

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **20** # **515**
Grow, Robert Intel

Comment Type **T** *Comment Status* **D**
The definition should include reference to -D and -U varients.

SuggestedRemedy
Change to read: "100BASE-BX-10: IEEE 802.3 Physical Layer specification for a 100 Mb/s point to point link over one single mode fiber. The link includes two different specifications for 100BASE-BX10-D and 100BASE-BX10-U . (See IEEE 802.3 Clauses 58 and 66.)

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **20** # **519**

Grow, Robert Intel

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

Alphabetize.

SuggestedRemedy

-BX comes before -LX in two locations.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **24** # **391**

Dawe, Piers Agilent

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

1000BASE-LX10 is for MMF as well as SMF

SuggestedRemedy

Change to 'over two single-mode or multimode optical'.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **29** # **514**

Grow, Robert Intel

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

It looks like the elimination of the use of 1000BASE-PX was incompletely done, as there is now a definition for -PX10, but not -PX20.

SuggestedRemedy

Fix

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **32** # **68**

Beck, Michael Alcatel Bell n.v.

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

"Physical layer specification for a 10 Mb/s point-to-point link" is inaccurate.

SuggestedRemedy

Remove "10 Mb/s" or replace with "100 Mb/s".

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **35** # **69**

Beck, Michael Alcatel Bell n.v.

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

"Physical layer specification for a 2 Mb/s point-to-point link" is inaccurate.

SuggestedRemedy

Remove "2 Mb/s" or replace with "5.696 Mb/s".

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **38** # **732**

James, David JGG

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

Excessive capitalization. There is no point in capitalizing every defined word (or many of them, with no apparent pattern). This confuses the parsing of sentences, since defined words, registers, fields, etc. are all capitalized.

SuggestedRemedy

1.4.xxx Aggregation group: ...
==>
1.4.xxx aggregation group: ...

1.4.xxx Bandplan: ...
==>
1.4.xxx bandplan: ...

1.4.xxx Coupled Power Ratio (CPR): ...
==>
1.4.xxx coupled power ratio (CPR): ...

1.4.xxx Downstream: ...
==>
1.4.xxx downstream: ...

1.4.xxx Grant: Within P2MP protocols, ...
==>
1.4.xxx grant: Within P2MP protocols, ...

1.4.xxx Logical Link Identifier (LLID): ...
==>
1.4.xxx logical link identifier (LLID): ...

1.4.xxx MPCP Registration: ...
==>
1.4.xxx MPCP registration: ...

1.4.xxx OAM Discovery: ...
==>
1.4.xxx OAM discovery: ...

1.4.xxx Operations, Administration and Maintenance (OAM): ...
==>
1.4.xxx operations, administration and maintenance (OAM): ...

1.4.xxx Optical Line Terminal (OLT): ...
==>
1.4.xxx optical line terminal (OLT): ...

1.4.xxx Optical Network Unit (ONU): ...
==>
1.4.xxx optical network unit (ONU): ...

1.4.xxx P2MP Discovery: ...
==>
1.4.xxx P2MP discovery: ...

1.4.xxx P2MP Discovery window: ...
==>
1.4.xxx P2MP discovery window: ...

1.4.xxx P2MP Timestamp: ...
==>
1.4.xxx P2MP timestamp: ...

1.4.xxx Point to Multi-Point Network (P2MP): ...
==>
1.4.xxx point to multi-point network (P2MP): ...

1.4.xxx Point-to-point emulation (P2PE): ...
==>
1.4.xxx point-to-point emulation (P2PE): ...

1.4.xxx Ranging: ...
==>
1.4.xxx ranging: ...

1.4.xxx Reflectance: ...
==>
1.4.xxx reflectance: ...

1.4.xxx Upstream: ...
==>
1.4.xxx upstream: ...

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **39** # **518**

Grow, Robert Intel

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

Inconsistent style.

SuggestedRemedy

Reference should be "(See IEEE 802.3 Clause 61.2.2.)"

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **48** # **851**
Tom Mathey Independent

Comment Type **E** *Comment Status* **D**
PLAIN TEXT VERSION
Bad grammer, add a verb to sentence.

SuggestedRemedy
which end of a link "is" closer.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **48** # **790**
Thompson, Geoffrey Nortel

Comment Type **E** *Comment Status* **D**
Grammar problem

SuggestedRemedy
Change the text:
"...which end of a link closer to an subscriber,..."
To the text:
"...which end of a link closer to a subscriber,..."

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **48** # **520**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
Grammar problem

SuggestedRemedy
Should read: "which end of a link is closer to,". Make text agree with resolution of "side" versus "end" comments.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **7** # **516**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
This is a "Replace", not a "Change".

SuggestedRemedy
Correct editing instruction to "Replace 1.4.10 with:"

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **15** *L* **9** # **731**
James, David JGG

Comment Type **E** *Comment Status* **D**
Excessive capitalization.

SuggestedRemedy
IEEE 802.3 Physical Layer specification
==
IEEE 802.3 Physical layer specification

On this line and all others with like text.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **16** *L* **18** # **524**
Grow, Robert Intel

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

SuggestedRemedy
Change "an P2MP" to "a P2MP".

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **16** *L* **25** # **525**
Grow, Robert Intel

Comment Type **TR** *Comment Status* **D**
Excessive protocol details for definition of a term.

SuggestedRemedy
Delete text after first sentence.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **16** *L* **34** # **526**

Grow, Robert — Intel

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

Unnecessary detail in the definition (makes maintenance more difficult because of redundancy with clause specifying the protocols).

SuggestedRemedy

Replace with: "P2MP Timestamp: The timestamp used to synchronize slaves (e.g., ONUs) with the master (OLT) and for the ranging process.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **16** *L* **40** # **527**

Grow, Robert — Intel

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

Inconsistent style.

SuggestedRemedy

Change to: "frames. (See Clauses 64 and 65)."

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **16** *L* **53** # **367**

Dawe, Piers — Agilent

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

Need to add a definition for 'unit interval'. This is trickier to write than it seems: need to cover e.g. Manchester code and/or multilane and/or multilevel transmission formats. For info: http://www.atis.org/tg2k/ has 'unit interval: In isochronous transmission, the longest interval of which the theoretical durations of the significant intervals of a signal are all whole multiples.' Can anyone improve on my attempt below?

SuggestedRemedy

Add 'unit interval' to the definitions list 1.4: 'A period of time, usually allocated for the transmission of one symbol on one channel; the inverse of the modulation rate.'

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **16** *L* **54** # **852**

Tom Mathey — Independent

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

PLAIN TEXT VERSION
Bad grammer, add a verb to sentence.

SuggestedRemedy

which end of a link "is" closer.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **16** *L* **54** # **70**

Beck, Michael — Alcatel Bell n.v.

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

Missing verb ("which end of a link closer") and obsolete 'n' ("an subscriber").

SuggestedRemedy

Replace "which end of a link closer" with "which end of a link is closer".
Replace "an subscriber" with "a subscriber".

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **16** *L* **54** # **523**

Grow, Robert — Intel

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

Grammar problem

SuggestedRemedy

Should read: "which end of a link is closer to,". Make text agree with resolution of "side" versus "end" comments.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **16** *L* **54** # **791**

Thompson, Geoffrey Nortel

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

Wording is incomplete and has grammar problem.

SuggestedRemedy

Change text from:
"Upstream: 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 away from the subscriber side of the link."
To the following text:
"Upstream: In an access network, transmission away from the subscriber end of the link. Applicable to networks where there is a clear indication in each deployment as to which end of a link is closer to the subscriber."

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **16** *L* **54** # **368**

Dawe, Piers Agilent

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

an subscriber

SuggestedRemedy

a subscriber

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **17** *L* **5** # **733**

James, David JGG

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

Excessive capitalization. There is no point in capitalizing every acronym (or many of them, with no apparent pattern). This confuses the parsing of sentences, since defined words, registers, fields, etc. are all capitalized.
Also, IEEE Style manual clearly shown acronyms not capitalized unless proper nouns.

Due to the large number of these, and failures in the past when attempting to resolve these earlier, they have been elevated to a TR.

After fixing the unnecessary capitalization, provide a check list to the other clause editors. Its easier for them to search, then for me and/or others to do so on their behalf.

SuggestedRemedy

CO Central Office
==>
CO central office

CPE Customer Premises Equipment
==>
CPE customer premises equipment

CPR Coupled Power Ratio
==>
CPR coupled power ratio

DMT Discrete Multi-Tone
==>
DMT discrete multi-tone

DA Destination Address
==>
DA destination address

EFM Ethernet in the First Mile
==>
EFM Ethernet in the first mile

EFM Cu Ethernet in the First Mile ...
==>
EFM Cu Ethernet in the first mile ...

FEC Forward Error Correction
==>
FEC forward error correction

FSW Frame Synchronization Word
==>
FSW frame synchronization word<cr
LLID Logical Link identifier

==>
LLID logical link identifier

MPCP Multi-Point Control Protocol
==>
MPCP multi-point control protoco

OAM Operations, Administration, and Maintenance
==>
OAM operations, administration, and maintenance

OAMPDU Operations, Administration, and Maintenance Protocol Data Unit
==>
OAMPDU operations, administration, and maintenance protocol data unit

ODN Optical Distribution Network
==>
ODN optical distribution network

OH Overhead
==>
OH overhead

OLT Optical Line Terminal
==>
OLT optical line terminal

ONU Optical Network Unit
==>
ONU optical network unit

ORLT Optical return loss tolerance
==>
ORLT optical return loss tolerance

P2P Point to Point
==>
P2P point to point

P2PE Point to Point Emulation
==>
P2PE point to point emulation

P2MP Point to Multi-Point
==>
P2MP point to multi-point

PAF PMI Aggregation Function
==>
PAF PMI aggregation function

PAFH PMI Aggregation Function Header
==>
PAFH PMI aggregation function header

PAM Pulse Amplitude Modulation
==>
PAM pulse amplitude modulation

PMS-TC Physical Media Specific - Transmission Convergence
==>
PMS-TC physical media specific - transmission convergence

PSD Power Spectral Density
==>
PSD power spectral density

SA Source Address
==>
SA source address

SHDSL Single-pair High-speed Digital Subscriber Line
==>
SHDSL single-pair high-speed digital subscriber line

STU-O SHDSL Transceiver Unit - Central Office
==>
STU-O SHDSL transceiver unit - central office

STU-R SHDSL Transceiver Unit - Remote
==>
STU-R SHDSL transceiver unit - remote

TCM Trellis Coded Modulation
==>
TCM Trellis coded modulation

UPBO Upstream power back-off
==>
UPBO upstream power back-off

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.5** *P* **17** *L* # **378**
Dawe, Piers Agilent

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

Please add PON and EPON to the abbreviations list.

SuggestedRemedy

(Ethernet) passive optical network

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.5** *P* **17** *L* **10** # **530**
Grow, Robert Intel

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

Incomplete expansion of acronym.

SuggestedRemedy

Change to "two level pulse amplitude modulation "

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.5** *P* **17** *L* **19** # **392**
Dawe, Piers Agilent

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

'EFM Cu' is an abbreviation which will not make much sense when EFM is folded into 802.3. Apparently it's used by clause 45 only.

SuggestedRemedy

Search and replace all 'EFM Cu' with '10P/2B' then remove from abbreviations list.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.5** *P* **17** *L* **42** # **531**
Grow, Robert Intel

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

No expansion of PMI

SuggestedRemedy

Add definition.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.5** *P* **17** *L* **5** # **529**
Grow, Robert Intel

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

Heavy abuse of capitalization throughout the section. (Look at 802.3-2002 rather than 802.3ae-2002 for appropriate capitilization.)

SuggestedRemedy

Only capatilize proper nouns.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.5** *P* **17** *L* **53** # **71**
Beck, Michael Alcatel Bell n.v.

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

"TPS-TC" is missing from the abbreviations list.

SuggestedRemedy

Add: "TPS-TC -- Transport Protocol Specific Transmission Convergence sublayer".

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.5** *P* **17** *L* **54** # **94**
Beck, Michael Alcatel Bell n.v.

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

"VDSL" is missing from the abbreviations list.

SuggestedRemedy

Add: "VDSL -- Very-high Speed Digital Subscriber Line".

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.5** *P* **17** *L* **7** # **792**
Thompson, Geoffrey Nortel

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

The abbreviations 10P/2B and 2B are confusing as they use "B" in a new context. This particular format for "nB" is well established in a different context within the existing standard (e.g. 4B/5B and 8B/10B).

SuggestedRemedy

Pick some other less confusing designation.

Proposed Response *Response Status* **O**

Cl **22** *SC* **1.4** *P* **21** *L* **1** # **734**

James, David JGG

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

Excessive capitalization. There is no point in capitalizing every acronym (or many of them, with no apparent pattern). This confuses the parsing of sentences, since defined words, registers, fields, etc. are all capitalized.
Also, IEEE Style manual clearly shown acronyms not capitalized unless proper nouns.

Due to the large number of these, and failures in the past when attempting to resolve these earlier, they have been elevated to a TR.

After fixing the unnecessary capitalization, provide a check list to the other clause editors. Its easier for them to search, then for me and/or others to do so on their behalf.

SuggestedRemedy

22. Reconciliation Sublayer (RS) and Media Independent Interface (MII)
==>
22. Reconciliation sublayer (RS) and media independent interface (MII)

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.4.1** *P* **22** *L* **3** # **532**

Grow, Robert Intel

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

Editing instruction is now too narrow (with other changes).

SuggestedRemedy

"Change Table 22-7 as follows:"

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.4.1** *P* **22** *L* **40** # **533**

Grow, Robert Intel

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

The definition of a bit in the middle of the reserved bits makes no sense.

SuggestedRemedy

Move the Unidirectional enable bit to 0.5. Correct descriptive text accordingly.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.4.1.11** *P* **23** *L* **3** # **534**

Grow, Robert Intel

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

Though technically correct, it is difficult (at least for me) to tell what changed.

SuggestedRemedy

Mark with strike out of complete old bit numbers and underscore of complete new bit numbers. (If my comment to move the bit isn't accepted, "0.5:0" in strikethrough and "0.5:2 and 0.0" in underline.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.4.1.12** *P* **23** *L* **20** # **747**

Booth, Brad Intel

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

Subclause is unclear and contains data that is either duplicated or belongs in another clause.

SuggestedRemedy

Move the last sentence of the last paragraph to be the last sentence of the first paragraph.

Move the second paragraph to proceed the first paragraph. Move MF42 & MF43 in PICS to proceed MF38 & MF39.

Delete the third paragraph and delete MF40 & MF41. This information should be in those respective clauses and repetition here just requires editing if another standards development wishes to use this bit.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.4.1.12** *P* **23** *L* **29** # **323**

Dawe, Piers Agilent

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

Although it's not absolutely impossible, it's generally a very bad idea to switch on unidirectional transmission for a 1000BASE-PX-U PHY.

SuggestedRemedy

Add:
NOTE - To avoid collisions, a management entity should not set bit 0.1 of a 1000BASE-PX-U PHY to a logic one.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.4.1.12** *P* **23** *L* **29** # **324**

Dawe, Piers Agilent

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

Missing period.

SuggestedRemedy

Add the . after 'PHY'

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.4.2.8** *P* **25** *L* **9** # **793**

Thompson, Geoffrey Nortel

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

Proposed text goes well beyond the allowed scope of the project. As worded it would appear to allow "unidirectional ability" on legacy PHY types. This change could cause great confusion and interoperability problems with conformat legacy networks.

SuggestedRemedy

Limit the scope of this change to the PHY types being added by this clause that support unidirectional ability. Require that the value of bit 1.7 will be zero for all other current PHY types.
Any WG action to add unidirectional ability to legacy PHY types should be done through maintenance or a new project with the appropriate scope.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.4.3.11** *P* **25** *L* **51** # **559**

Brown, Benjamin Independent

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

Rewrite this paragraph for clarity

SuggestedRemedy

Replace entire paragraph with the following:

"Each MMD maintains its own individual address register as described in 45.2.8. The DEVAD field directs any accesses of Register 14 to the appropriate MMD as described in 45.2. If the access of Register 14 is an address access (bits 13.15:14 = 00b) then it is directed to the address register within the MMD associated with the value in the DEVAD field (bits 13.4:0). Otherwise, both the DEVAD field and that MMD's address register direct the Register 14 data accesses to the appropriate registers within that MMD.

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.7.2.3** *P* **27** *L* **5** # **748**

Booth, Brad Intel

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

MF38-43 are written as being mandatory for all devices using Clause 22. This is not the intent; therefore, a new ability is required.

SuggestedRemedy

Insert into the table in 22.7.2.3 the following information:
*OAM; Implementation of OAM unidirectional ability; 57, 65; O; Yes[ ], No[ ]

Change Status for MF38-43 in table in 22.7.3.4 to read: OAM:M
Change Support for MF 38-43 in table in 22.7.3.4 to read: Yes[ ], NA[ ]

Proposed Response *Response Status* **O**

Cl **22D** *SC* **22D** *P* **551** *L* **1** # **430**

Law, David 3Com

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

In general when a register is being referred to the 'r' in register is upper case - see existing Clause 22 and also the changes to Clause 45 contained in IEEE P802.3ah (I will not comment on the correctness of this - it is just consistent).

SuggestedRemedy

Change 'register 13' to 'Register 13' and 'register 14' to 'Register 14' throughout this annex.

Proposed Response *Response Status* **O**

Cl **22D** *SC* **22D.4** *P* **553** *L* **34** # **431**

Law, David 3Com

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

I cannot see the point of including the text in penultimate paragraph (lines 34 to 38) and the text in last paragraph (lines 39 to 44) seems to be misleading at a minimum and possibly incorrect.

The penultimate paragraph states '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.' which is correct however I don't see the point of including this particular information as it is a duplication of information included in Clause 45. The last paragraph then goes on to state 'These MMDs avoid bus conflicts by following these simple rules:' however this is not correct, these MMDs avoid bus conflict exactly the way it is stated in the previous paragraph, by the use of the Device Address.

SuggestedRemedy

Remove the final two paragraphs.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30** *P* **30** *L* **1** # **853**

Tom Mathey Independent

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

Clause 61 for 10P/2B requires the use of a "coding violation" register. This register is called out in multiple places:
P353 line 21, 24,24
P354 lind8, 53
P356 line 24

Clause 45 is missing this register; an invalid reference is provided on p354 line 54.
Clause 30 is missing this management variable.
The 30.5.1.1.12 aPCSCodingViolation variable listed on p47 is used only for 100/1000 devices per comment #431 D2.1 p17.

SuggestedRemedy

Add to Clause 45 a aPCSCodingViolation register.
Add to Clause 30 a aPCSCodingViolation variable which is specific to 10P/2B hierarchy.
Clause 61 to provide correct cross reference.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30** *P* **30** *L* **1** # **854**

Tom Mathey Independent

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

While the port configuration is expected to be set via manual method (such as management variable, a fixed trace, or a jumper on a printed circuit board), if two ends of the link are both set to the same sub-type (both as _R, or both as _O) per 3.x.15 in table 45-72, then the handshake will fail but without any information back to the user as to why.

SuggestedRemedy

To NPAR and SPAR, add ability to report the _R and _O setting of the link partner. Provide to clause 45 register and to clause 30 management access. Note that assignment as _R or _O in 3.x.15 in table 45-72 is in the wrong layer and is expected to change to PMA as the PCS does nothing with_R or _O.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.1.2** *P* **30** *L* **38** # **536**

Grow, Robert Intel

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

The source text is in IEEE Std 802.3af-2003.

SuggestedRemedy

At document reference to editing instruction.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.1.2** *P* **30** *L* **45** # **535**

Grow, Robert Intel

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

The capatilization change on figure is not a change from 802.3af.

SuggestedRemedy

Remove strikethrough "f" and remove the underscore from the "F".

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.11.1.1.13** *P* **56** *L* **11** # **33**

Squire, Matt Hatteras Networks

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

It seems like the total Rx/Tx OAMPDU attributes can be eliminated as we count the Rx/Tx per op-code. The total can be derived as the sums over all op-codes.

SuggestedRemedy

Eliminate these counters as they can be derived.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.11.1.1.18** *P* **57** *L* **26** # **34**

Squire, Matt Hatteras Networks

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

We break up the Rx event counts into duplicate and unique, but we do not do so on transmit. Seems like we'd want the Tx/Rx to be the same.

SuggestedRemedy

Break up the EventNotificationTx into UniqueEventNotificationTx and DuplicateEventNotificationTx.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.11.1.1.5** *P* **53** *L* **50** # **31**

Squire, Matt Hatteras Networks

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

We've been using "Remote Loopback" instead of just "Loopback".

SuggestedRemedy

Add "Remote".

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.11.1.1.6** *P* **54** *L* **5** # **32**

Squire, Matt Hatteras Networks

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

I'm not sure how perfect the conditions have to be specified in this clause, but there are two conditions for all of the information learned from an Information OAMPDU that aren't covered here (and maybe don't have to be, but I'll mention them anyway):
1) Information OAMPDUs don't have to have TLVs
2) You can use the revision number so that you don't have to update/process information on every Information OAMPDU (e.g. if it hasnt changed, don't try to update your info about your peer).
Do we need to mention these in the related clauses here (30.11.1.1.5,6,8,9,10,11,12)

SuggestedRemedy

Looking for David's thoughts on how complete these conditions have to be specified.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.1** *P* **66** *L* # **63**

Khermosh, Lior Passave

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

Add additional counter:
30.12.1.6
aBroadcastLLIDNotOnuID

SuggestedRemedy

30.12.1.6 aBroadcastLLIDNotOnuID
A count of frames received that contain a valid SPD field in a OLT, as defined in clause 65.1.2.4.1, and pass the CRC-8 check, as defined in clause 65.1.2.4.3, and contain broadcast LLID as defined in clause 65. This attribute is mandatory for a OLT and for a ONU.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.1** *P* **66** *L* # **64**

Khermosh, Lior Passave

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

Add additional counter:
30.12.1.7
aOnuLLIDNotBroadcast

SuggestedRemedy

30.12.1.7 aOnuLLIDNotBroadcast
A count of frames received that contain a valid SPD field in a OLT, as defined in clause 65.1.2.4.1, and pass the CRC-8 check, as defined in clause 65.1.2.4.3, and contain the ONU's LLID as defined in clause 65. This attribute is mandatory for an ONU and mandatory for a OLT (a counter per LLID).

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.1** *P* **66** *L* # **65**

Khermosh, Lior Passave

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

Add additional counter:
30.12.1.8
aBroadcastLLIDAntiOnuId

SuggestedRemedy

30.12.1.8 aBroadcastLLIDAntiOnuId
A count of frames received that contain a valid SPD field in a OLT, as defined in clause 65.1.2.4.1, and pass the CRC-8 check, as defined in clause 65.1.2.4.3, and contain the broadcast LLID plus ONU's LLID (frame reflected) as defined in clause 65 (same LLID with broadcast bit set). This attribute is mandatory for an ONU and mandatory for a OLT (a counter per LLID).

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.1** *P* **66** *L* # **66**

Khermosh, Lior Passave

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

Add additional counter:
30.12.1.9
aNotBroadcastLLIDNotOnuId

SuggestedRemedy

30.12.1.9 aNotBroadcastLLIDNotOnuId
A count of frames received that contain a valid SPD field in a OLT, as defined in clause 65.1.2.4.1, and pass the CRC-8 check, as defined in clause 65.1.2.4.3, and does not contain the ONU's LLID as defined in clause 65. This attribute is mandatory for an ONU

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.2.2.1** *P* **31** *L* **9** # **539**

Grow, Robert Intel

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

Though the order of the entities attempts to reproduce the heirarchy, it isn't consistent. Sometimes, the left most branch is traversed to the leaf and at other times, it is done by levels from oAggregator. I can't figure out any reason why oPAUSE Entity or oMPCP are ordered as is.

SuggestedRemedy

Perhaps this is something to look at in maintenance, but why not make the list alphabetical? Especialy since it now covers two figures.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.2.2.1** *P* **32** *L* **1** # **537**

Grow, Robert Intel

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

oMACControlFunctionEntity is not completly removed from 802.3-2002 by the changes of 802.3ah.

SuggestedRemedy

Remove reference in IEEE Std 802.3 Table 30-1c (pdf page 859, printed page 282) and 30A.4.1 pdf page 1063, printed page 486) -- requires redefinition of package.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.2.2.1** *P* **32** *L* **8** # **538**
Grow, Robert Intel

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

Incorrect change marking.

SuggestedRemedy

"Otherwise" is not new text, remove underscore.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.2.3** *P* **33** *L* **50** # **540**
Grow, Robert Intel

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

List of three figures.

SuggestedRemedy

Change to "Figure 30-3 through Figure 30-5".

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.2.3** *P* **34** *L* **1** # **145**
Edward Beili Actelis Networks Inc.

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

Only oPHYEntity is shown while there is no object that represents the PMA/PMD (PMI)

SuggestedRemedy

Add a new managed object oPMI or oPMIEntity with one-to-many relationship from oPHYEntity. Provide a description for this new object class and specify its attributes in the relevant sections.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.5** *P* **43** *L* # **55**
Khermosh, Lior Passave

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

Add additional counter:
30.3.5.1.17
aTxRegAck

SuggestedRemedy

30.3.5.1.17 aTxRegAck
A count of the number of times a REGISTER_ACK MPCP frames transmission occurs. Increment the counter by one for each REGISTER_ACK MPCP frame transmitted as defined in clause 64. This counter is mandatory for an ONU

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.5** *P* **43** *L* # **53**
Khermosh, Lior Passave

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

Add additional counter:
30.3.5.1.15
aTxRegRequest

SuggestedRemedy

30.3.5.1.15 aTxRegRequest
A count of the number of times a REGISTER_REQ MPCP frames transmission occurs. Increment the counter by one for each REGISTER_REQ MPCP frame transmitted as defined in clause 64. This counter is mandatory for an ONU

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.5** *P* **43** *L* # **54**
Khermosh, Lior Passave

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

Add additional counter:
30.3.5.1.16
aRxRegRequest

SuggestedRemedy

30.3.5.1.16 aRxRegRequest
A count of the number of times a REGISTER_REQ MPCP frames reception occurs. A single counter at the ONU and a set of counters, one for each LLID, at the OLT. Increment the counter by one for each REGISTER_REQ MPCP frame received for each LLID as defined in clause 64. This counter is mandatory for an ONU and for an OLT

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.5** *P* **43** *L* # **56**

Khermosh, Lior Passave

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

Add additional counter:
30.3.5.1.18
aRxRegAck

SuggestedRemedy

30.3.5.1.18 aRxRegAck
A count of the number of times a REGISTER_ACK MPCP frames reception occurs. A single counter at the ONU and a set of counters, one for each LLID, at the OLT. Increment the counter by one for each REGISTER_ACK MPCP frame received for each LLID, as defined in clause 64. This counter is mandatory for an ONU and for an OLT

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.5** *P* **43** *L* # **57**

Khermosh, Lior Passave

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

Add additional counter:
30.3.5.1.19
aTxReport

SuggestedRemedy

30.3.5.1.19 aTxReport
A count of the number of times a REPORT MPCP frames transmission occurs. Increment the counter by one for each REPORT MPCP frame transmitted as defined in clause 64. This counter is mandatory for an ONU

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.5** *P* **43** *L* # **58**

Khermosh, Lior Passave

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

Add additional counter:
30.3.5.1.20
aRxReport

SuggestedRemedy

30.3.5.1.20 aRxReport
A count of the number of times a REPORT MPCP frames reception occurs. A single counter at the ONU and a set of counters, one for each LLID, at the OLT. Increment the counter by one for each REPORT MPCP frame received for each LLID, as defined in clause 64. This counter is mandatory for an ONU and for an OLT

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.5** *P* **43** *L* # **59**

Khermosh, Lior Passave

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

Add additional counter:
30.3.5.1.21
aTxGate

SuggestedRemedy

30.3.5.1.21 aTxGate
A count of the number of times a GATE MPCP frames transmission occurs. A set of counters, one for each LLID, at the OLT. Increment the counter by one for each GATE MPCP frame transmitted, for each LLID, as defined in clause 64. This counter is mandatory for an OLT.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.5** *P* **43** *L* # **60**

Khermosh, Lior Passave

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

Add additional counter:
30.3.5.1.22
aRxGate

SuggestedRemedy

30.3.5.1.22 aRxGate
A count of the number of times a GATE MPCP frames reception occurs. A single counter at the ONU and a set of counters, one for each LLID, at the OLT. Increment the counter by one for each GATE MPCP frame received, for each LLID, as defined in clause 64. This counter is mandatory for an ONU and for an OLT.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.5** *P* **43** *L* # **61**
Khermosh, Lior Passave

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

Add additional counter:
30.3.5.1.23
aTxRegister

SuggestedRemedy

30.3.5.1.23 aTxRegister
A count of the number of times a REGISTER MPCP frames transmission occurs. A set of counters, one for each LLID, at the OLT. Increment the counter by one for each REGISTER MPCP frame transmitted, for each LLID, as defined in clause 64. This counter is mandatory for an OLT.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.5** *P* **43** *L* # **62**
Khermosh, Lior Passave

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

Add additional counter:
30.3.5.1.24
aRxRegister

SuggestedRemedy

30.3.5.1.24 aRxRegister
A count of the number of times a REGISTER MPCP frames reception occurs. A single counter at the ONU and a set of counters, one for each LLID, at the OLT. Increment the counter by one for each REGISTER MPCP frame received, for each LLID, as defined in clause 64. This counter is mandatory for an ONU and for an OLT.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1** *P* **52** *L* # **52**
Khermosh, Lior Passave

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

Add additional attribute:
30.5.1.1.31
aFECmode

SuggestedRemedy

30.5.1.1.31
aFECmode

indicates the mode of operation of the optional FEC Sublayer for Forward error correction (see clause 65.2). It could be either enabled or disabled (not existing).

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1..14** *P* **48** *L* **10** # **543**
Grow, Robert Intel

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

Cut and paste with incomplete edits? The APPROPRIATE SYNTAX of aFECCorrectedBlocks and aFECUncorrectableBlocks are not consistent in either maximum increment rates or in specification of both 10 Mb/s and 1000 Mb/s

SuggestedRemedy

It seems like the Corrected and Uncorrectable counts should have the same maximum increment rate and applicability to same speeds.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.12** *P* **47** *L* **35** # **542**
Grow, Robert Intel

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

Line breaking "/".

SuggestedRemedy

Change FrameMaker line break symbol list to remove "/".

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.16** *P* **48** *L* **33** # **452**

Law, David 3Com

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

The additional copper attributes do not account for the fact that a single PHY can consist of multiple aggregated PMIs. Suggest that a new object oPAF be added that is subordinate to oPHYEntity. oPAF will include PMI aggregation related attributes and will have a one to many relationship to another new subordinate object oPMI. The oPMI object will provide the per PMI attributes.

SuggestedRemedy

Please implement the changes proposed in the presentation law_1_0104.pdf.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.16** *P* **48** *L* **34** # **146**

Edward Beili Actelis Networks Inc.

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

aPHYCurrentStatus parameter values defined describe an individual PMA/PMD (PMI) status, not suited to be called PHY in case of PMI aggregation. In addition Initialization states are not reflected. Also a similar object is needed per PMA/PMD (PMI). Also noPmiAssigned value has disappeared.

SuggestedRemedy

Leave values that make sense in aggregated PMI case. i.e.
noDefect - no defect
noPmiAssigned - no PMIs assigned in case of PMI aggregation

lossOfFraming - one or more PMIs in the aggregation group indicate Loss of Framing
lossOfSignal - one or more PMIs in the aggregation group indicate Loss of Signal
lossOfPower - one or more PMIs in the aggregation group indicate Loss of Power
lossOfSignalQuality - one or more PMIs in the aggregation group indicate Loss of Signal Quality
lossOfLink - one or more PMIs in the aggregation group indicate Loss of Link
dataInitFailure - data initialization failure
configInitFailure - configuration initialization failure
noPeerPMIPresent - one or more PMIs in the aggregation group indicate no peer PMI present
lossOfPMASyncWord - one or more PMIs in the aggregation group indicate Loss of PMA Synchronization word
snrMarginViolation - one or more PMIs in the aggregation group indicate SNR Margin Violation
loopAttenuationViolation - one or more PMIs in the aggregation group indicate Loop Attenuation Violation

Specify a similar object for PMA/PMD: aPMICurrentStatus.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.16** *P* **48** *L* **40** # **860**

Schneiderheinze, Burkart Infineon

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

unambiguous mapping of Status to operational state of 2BASE-TL not possible

SuggestedRemedy

provide mapping of each status to PHY specific operational state (i.e. for 2BASE-TL: loopattenuationViolation to loop attenuation defect, Lossoflink to LOSW defect, other ??)

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.16** *P* **48** *L* **40** # **89**

Beck, Michael Alcatel Bell n.v.

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

Entries 1-9 seem to be adapted from the IETF MIB for VDSL (draft-ietf-adslmib-vdsl-12.txt). The descriptions in Clause 30 are insufficient to understand how the value of the attribute should be set. Suggest to (a) better describe the entries, in accordance with the IETF MIB for VDSL, or (b) replace them by entries that correspond to the states in Figure 62-4. Note that conditions "configInitFailure" and "protocolInitFailure" should never occur in 10PASS-TS systems; they are therefore not present in the list proposed by the suggested remedy.

SuggestedRemedy

Remedy (a):
Replace entries 1-9 with:
-noDefect: There are no defects on the line
-lossOfFraming: 10PASS-TS failure due to not receiving a valid frame
-lossOfSignal: 10PASS-TS failure due to not receiving signal
-lossOfPower: 10PASS-TS failure due to loss of power
-lossOfSignalQuality: Loss of Signal Quality is declared when the Noise Margin falls below the Minimum Noise Margin, or the bit error ratio exceeds 10^-7
-lossOfLink: 10PASS-TS failure due to inability to link with peer 10PASS-TS PHY. Set whenever the transceiver is in the WARM_START state.
-dataInitFailure: 10PASS-TS failure during initialization due to bit errors corrupting startup exchange data
-noPeerVtuPresent: 10PASS-TS failure during initialization due to no activation sequence detected from peer 10PASS-TS PHY

Remedy (b):
Replace entries 1-9 with:
-powerOff: initial state, intended for service installation and modification
-initializating: link activation (cold start, warm start) in progress
-steadyStateTransmission: link activation process is completed
-lossOfSync: transmission frame synchronization loss has occurred
-powerDown: state achieved after guided power removal, power failure, or QUIET deactivation

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.16** *P* **48** *L* **54** # **88**

Beck, Michael — Alcatel Bell n.v.

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

Behaviour specification of aPhyCurrentStatus references non-existing subclause 62.3.4.5.1.

SuggestedRemedy

For 10PASS-TS, the text should reference the "Link state and timing diagram" in 62.3.4.8.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.16** *P* **48** *L* **54** # **861**

Schneiderheinze, Burkart — Infineon

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

order of cross ref wrong (2BASE-TL defined in Clause 63) and wrong cross ref to 2BASE-TL

SuggestedRemedy

change order and update of cross ref for 2BASE-Tl to 63.2.2.3

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.17** *P* **49** *L* **1** # **151**

Edward Beili — Actelis Networks Inc.

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

aPMDSNR is described as a 2B/10P PHY parameter while it is a PMA/PMD (PMI) parameter.
In addition -O vs. -R behavior is not specified.

SuggestedRemedy

- Rename it to aPMISNRMgn or aSNRMgn
- Replace the description text with the following:
"10PassTS/2BaseTL PMI current Signal-to-Noise Ratio (SNR) Margin, as specified in 802.3ah 63.3. This Read-Only object reflects SNR Margin, as perceived by an individual PMI (both -O and -R subtypes), with respect to the received signal in dB.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.17** *P* **49** *L* **9** # **29**

Squire, Matt — Hatteras Networks

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

The attribute applies to 10P & 2B copper PHYs, and there's a reference to the 2B PHY use, but not the 10P PHY use.

SuggestedRemedy

Add reference to Clause 62 support of this attribute.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.18** *P* **49** *L* **11** # **152**

Edward Beili — Actelis Networks Inc.

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

aProfileSelect is described as a 2B PHY parameter while it is really a PMA/PMD (PMI) parameter.
In case of PMI Aggregation setting all PMIs in the aggregation group to the same profile may significantly reduce total bandwidth since all pairs would be set to a possible rate on the worst pair (as is the case in IMA).
In addition there's no similar object for 10P PMI. No way of specifying a number of profiles is given (up to 5 profiles can be specified in North America and Europe).

SuggestedRemedy

- Change INTEGER type to INTEGER list or whatever the appropriate name for a list. (it should really be a list of enums).
- Define a number of some making sense profiles for 10P PMI (probably in some 62 Annex)
- Replace the description text with the following:
"10PassTS/2BaseTL PMI operating complete Profile, as specified in 802.3ah 63.A3 and 62.Ax.
This object is writable for the CO subtype PMIs (-O), changing the operating profile for the PMI and its link partner. It is read-only for the CPE subtype (-R).

Changing PMD profile must be performed when the link is Down. Attempts to change this object MUST be rejected with, if the link is Up or Initializing.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.18** *P* **49** *L* **18** # **138**

Kimpe, Marc — Adtran

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

A 2BASE-TL PHY can also operate using settings that do not constitute a profile. In order to avoid potential confusion, the aProfileSelect register should have a setting that says: no profile selected.

SuggestedRemedy

Add the following sentence at the end of the current behaviour text.
"A value of zero means that the 2BASE-TL operation is defined via the clause 45 register settings (table 45.33 & 45.34) rather than a specific profile."

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.19** *P* **49** *L* **22** # **153**

Edward Beili — Actelis Networks Inc.

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

aBandNotchProfile is described as 10P PHY parameter while it is a PMA/PMD (PMI) parameter.
-O vs. -R behavior as well as SET conditions are not specified. No way of specifying a number of profiles is given
(I understand that up to 4 profiles can be specified in North America and up to 5 in Europe).

SuggestedRemedy

- Change INTEGER type to INTEGER list or whatever the appropriate name for a list.
- Replace the description text with the following:
"10PassTS PMI Band Notch Profile, as specified in 802.3ah Annex 62A. This object is writable for the CO subtype PMIs (10PassTS-O). It is read-only for the CPE subtype (10PassTS-R).
The SET operation changes egress control Band Notch Profile to the specified value (list). Changing the Band Notch Profile must be performed when the link is Down. Attempts to change this object MUST be rejected, if the link is Up or Initializing."

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.2** *P* **44** *L* **31** # **541**

Grow, Robert — Intel

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

Formatting.

SuggestedRemedy

Not clear that there is a space or tab between the neme and the description. Also on line 34 and 54 and page 45 lines 2-6 and 16. Might be better to modify the change the indent for everything in this list, or perhaps even the style sheet.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.2** *P* **44** *L* **4** # **856**

Tom Mathey — Independent

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

Added text is wide enough that new text has no white space between the columns

SuggestedRemedy

Move tab location.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.20** *P* **49** *L* **34** # **149**

Edward Beili — Actelis Networks Inc.

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

aPayloadRateProfileUpstream is described as 10P PHY parameter while it is a PMA/PMD (PMI) parameter.
-O vs. -R behavior as well as SET conditions are not specified.

SuggestedRemedy

Replace the text with the following:
"10PassTS PMI Upstream Payload Rate Profile, as specified in 802.3ah Annex 62A. This object is writable for the CO subtype PMIs (10PassTS-O). It is read-only for the CPE subtype (10PassTS-R).
The SET operation sets a target for the PHY's Upstream Payload Bitrate as seen at the MII. If the payload rate of the selected profile cannot be achieved based on the loop environment, bandplan and PSD mask, the PHY shall drop the link.
Changing Upstream Payload Rate Profile must be performed when the link is Down.
Attempts to change this object MUST be rejected, if the link is Up or Initializing."

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.20** *P* **49** *L* **39** # **90**

Beck, Michael — Alcatel Bell n.v.

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

Values greater than 100 should not be allowed for the attribute aPayloadRateProfileUpstream.
Values of 200 and 140 should be allowed for the attribute aPayloadRateProfileDownstream.

SuggestedRemedy

Swap syntax descriptions of aPayloadRateProfileUpstream and aPayloadRateProfileDownstream, to make values consistent with those defined in Annex 62A.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.21** *P* **50** *L* # **143**

Barrow, Bruce SCC14

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

On page 50 and elsewhere, please use the correct unit symbol for kilobit per second, kb/s.

SuggestedRemedy

The expression "kb/s/500" is not defined algebraically. Do you mean "(kb/s)/500" or "kb/(s/500)"? Note that 10/5/2 is ambiguous; (10/5)/2 = 1, whereas 10/(5/2) = 4. When I tried to "see 62A.3.6" as invited by the text, I could not find my way.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.21** *P* **50** *L* **1** # **150**

Edward Beili Actelis Networks Inc.

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

aPayloadRateProfileDownstream is described as 10P PHY parameter while it is a PMA/PMD (PMI) parameter.
-O vs. -R behavior as well as SET conditions are not specified.

SuggestedRemedy

Replace the text with the following:
"10PassTS PMI Upstream Payload Rate Profile, as specified in 802.3ah Annex 62A. This object is writable for the CO subtype PMIs (10PassTS-O). It is read-only for the CPE subtype (10PassTS-R).
The SET operation sets a target for the PHY's Downstream Payload Bitrate as seen at the MII. If the payload rate of the selected profile cannot be achieved based on the loop environment, bandplan and PSD mask, the PHY shall drop the link.
Changing Downstream Payload Rate Profile must be performed when the link is Down. Attempts to change this object MUST be rejected, if the link is Up or Initializing."

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.22** *P* **50** *L* **21** # **147**

Edward Beili Actelis Networks Inc.

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

aBandplanPSDMaskProfile is described as 10P PHY parameter while it is a PMA/PMD (PMI) parameter.
In addition -O vs. -R behavior as well as SET conditions are not specified.

SuggestedRemedy

Replace the text with the following:
"10PassTS PMI Bandplan and PSD Mask profile, as specified in 802.3ah Annex 62A. This Read-Write object is writable for the CO subtype PMIs (10PassTS-O), setting the specified profile. It is read-only for the CPE subtype (10PassTS-R).

Changing PMI Bandplan and PSD MAsk profile must be performed when the link is Down. Attempts to change this object MUST be rejected, if the link is Up or Initializing.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.23** *P* **50** *L* **32** # **148**

Edward Beili Actelis Networks Inc.

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

aUPBOReferenceProfile is described as 10P PHY parameter while it is a PMA/PMD (PMI) parameter.
In addition -O vs. -R behavior as well as SET conditions are not specified.

SuggestedRemedy

Replace the text with the following:
"10PassTS PMI Bandplan and PSD Mask profile, as specified in 802.3ah Annex 62A. This Read-Write object is writable for the CO subtype PMIs (10PassTS-O), setting the specified profile. It is read-only for the CPE subtype (10PassTS-R).

Changing PMI Bandplan and PSD MAsk profile must be performed when the link is Down. Attempts to change this object MUST be rejected, if the link is Up or Initializing.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.26** *P* **51** *L* **27** # **30**

Squire, Matt — Hatteras Networks

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

This actually applies to 30.5.1.1.26, 27, 29, & 30.

These string attributes seem to be the only place where we don't say read-only or read-write.

SuggestedRemedy

Indicate whether these are read-only or read-write via C30.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.4** *P* **46** *L* **11** # **157**

Edward Beili — Actelis Networks Inc.

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

Ready value is described (page 47, line 2) but not listed in enumeration. Also PMD link fault is described as a single PMA/PMD link fault, not applicable in case of PMI aggregation.

SuggestedRemedy

- Add "ready" value in the enumeration with an appropriate description.
- Change description of PMD link fault as: "A link fault is detected at the receive direction by one or more PMA/PMDs in the aggregation group".

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.4** *P* **46** *L* **39** # **394**

Dawe, Piers — Agilent

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

Missing two port types?

SuggestedRemedy

'100BASE-TX, 100BASE-FX, 100BASE-LX10 and 100BASE-BX10' ?

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.4** *P* **47** *L* **1** # **461**

Barrass, Hugh — Cisco Systems

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

Paragraph needs to be reformatted to make the separate mappings clear. Suggest that bullets are used.

SuggestedRemedy

For 2BASE-TL and 10PASS-TS PHYs:

. the enumeration “unknown” maps to the condition where the PHY is initializing.
. the enumeration “ready” maps to the condition where at least one PMI is available and is ready for handshake.
. the enumeration “available” maps to the condition where, at the PCS, at least one PMI is operationally linked.
. the enumeration “not available” maps to the condition where the PCS is not operationally linked.

For 100BASE-LX, 100BASE-BX, 1000BASE-LX, 1000BASE-BX and 1000BASE-PX PHYs the enumerations map to the respective link integrity state diagrams.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.4** *P* **47** *L* **2** # **858**

Schneiderheinze, Burkart — Infineon

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

enumeration'ready' does not exist

SuggestedRemedy

add 'ready' to enumration list

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.4** *P* **47** *L* **2** # **857**

Tom Mathey — Independent

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

The text "the enumeration "ready" maps to" refers to an enumerated value which is not in the list.

SuggestedRemedy

Add enumeration "ready" to "APPROPRIATE SYNTAX: An ENUMERATED value list"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.4** *P* **47** *L* **27** # **859**
Schneiderheinze, Burkart Infineon

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

jabber not defined for 2BASE-TL and 10PASS-TS

SuggestedRemedy

1) add a foot note that remote jaber, as defined in 30.5.1.1.4, will not be supported for 2BASE-TL and 10PASS-TS,
2) add a note, that aJabberCounter, defined in 30.5.1.1.6 will not be incremented for 2BASE-TL and 10PASS-TS

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.4** *P* **47** *L* **6** # **395**
Dawe, Piers Agilent

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

Should 100M and 1G be in same sentence?

SuggestedRemedy

remove '100BASE-LX, 100BASE-BX,'? Change '1000BASE-LX, 1000BASE-BX' to '1000BASE-LX, 1000BASE-LX10, 1000BASE-BX10'?

Proposed Response *Response Status* **O**

Cl **30** *SC* **Table 30-5** *P* **38** *L* **25** # **855**
Tom Mathey Independent

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

Clause 30 has no variable to match Clause 61 capable bits for port type indication of _R and _O. These bits need to be read by management. While these bits are in the Clause 45 PCS layer Table 45-72, they are expected to move the PMA layer as the bits have no usage in the PCS layer.

SuggestedRemedy

Add

Proposed Response *Response Status* **O**

Cl **30A** *SC* **30A.19.1** *P* **138** *L* **19** # **95**
John Messenger ADVA Optical Network

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

oamLoopbackControlTx has the value 256. This is the first example of an object with a field value > 255 which must fit into an 8-bit field (Variable Branch 57.6.1).

SuggestedRemedy

Either change the values of leaf and branch to all be in the range 0..255 or change the size of the branch (and perhaps leaf) fields in tables 57-13 and 57-14 to be larger (16 bit).

Proposed Response *Response Status* **O**

Cl **30B** *SC* **30B.2** *P* **145** *L* **18** # **310**
Dawe, Piers Agilent

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

Wasn't it in May that we decided to not use 'simu half duplex'?

SuggestedRemedy

Use a silver bullet this time.

Proposed Response *Response Status* **O**

Cl **31A** *SC* **Table 31A-1** *P* **150** *L* **18** # **568**
Brown, Benjamin Independent

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

Missing uderscore

SuggestedRemedy

Underscore the word "Annex" in the third column

Proposed Response *Response Status* **O**

Cl **31A** *SC* **Table 31A-3** *P* **151** *L* **24** # **569**
Brown, Benjamin Independent

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

Wrong & extra words

SuggestedRemedy

For "start" row, replace "Time where GATE" with "Time when GATE"

For "length" row, remove the word "where"

Proposed Response *Response Status* **O**

Cl **43B** *SC* **43B.4** *P* **156** *L* **44** # **757**

Booth, Brad — Intel

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

New text should be underlined.

SuggestedRemedy

Underline "Operations, Administration and Maintenance (OAM)".

Proposed Response *Response Status* **O**

Cl **45** *SC* **45** *P* **67** *L* **10** # **560**

Brown, Benjamin — Independent

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

Incorrect editing instructions

SuggestedRemedy

Replace with those at the head of Clause 30 or 22 to include the "REPLACE" instruction.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45** *P* **68** *L* # **393**

Dawe, Piers — Agilent

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

'EFM Cu' is an abbreviation which will not make much sense when EFM is folded into 802.3. Apparently it's used by clause 45 only.

SuggestedRemedy

Search and replace all 'EFM Cu' with '10P/2B' then remove from abbreviations list.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45** *P* **68** *L* **1** # **806**

Tom Mathey — Independent

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

Clause 45 has a number of misplace and/or missing register bits.
1. Register 3.44 for status and control of port type _R vs _O is in the PCS layer. There is no use of these bits in the PCS layer. Nor is there any signal crossing the alpha-beta for _R vs _O port type. These bits belong in the PMA layer.
2. When both ends of the link are configured to the same port type of _R to _R, or _O to _O, then the link will not come up but there is no way for the user to determine why.
3. Some of the clause 45 registers are generic, and apply to all of the places where used. Examples are reset, loopback, OUI or device identifiers, etc. For those persons who did not participate in the 10G development of Clause 45, this requirement is easily missed. For example, it is not obvious that the PMA layer requires a loopback capability, and there is no text in Clause 61, 62 or 63 to support loopback

SuggestedRemedy

1. Move register 3.44 for status and control of port type _R vs _O to the PMA layer
2. Add ability to transport local setting (_R, _O) of port type to link partner, and ability for local device to read or obtain the port type (_R, _O) of link partner.
3. Include table to show which registers are required.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45** *P* **68** *L* **1** # **805**

Tom Mathey — Independent

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

Clause 61 for 10P/2B requires the use of a "coding violation" register. This register is called out in multiple places:
P353 line 21, 24,24
P354 lind8, 53
P356 line 24

Clause 45 is missing this register; an invalid reference is provided on p354 line 54.
Clause 30 is missing this management variable.
The 30.5.1.1.12 aPCSCodingViolation variable listed on p47 is used only for 100/1000 devices per comment #431 D2.1 p17.

SuggestedRemedy

Add to Clause 45 a aPCSCodingViolation register.
Add to Clause 30 a aPCSCodingViolation variable which is specific to 10P/2B hierarchy.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45** *P* **68** *L* **1** # **807**

Tom Mathey Independent

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

While the port configuration is expected to be set via manual method (such as management variable, a fixed trace, or a jumper on a printed circuit board), if two ends of the link are both set to the same sub-type (both as _R, or both as _O) per 3.x.15 in table 45-72, then the handshake will fail but without any information back to the user as to why.

SuggestedRemedy

To NPAR and SPAR, add ability to report the _R and _O setting of the link partner. Provide to clause 45 register and to clause 30 management access.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.1** *P* **68** *L* **11** # **396**

Dawe, Piers Agilent

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

We've added FEC registers too.

SuggestedRemedy

Add third item to list
-- Implementations of 1000BASE-PX physical layer devices with FEC

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.1** *P* **68** *L* **6** # **561**

Brown, Benjamin Independent

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

Wrong editing instruction

SuggestedRemedy

Replace "ADD" with "INSERT"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.1** *P* **68** *L* **6** # **286**

Gerhardt, Floyd Cisco Systems, Inc.

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

Not sure if I understand the editing instructions, however the current editing instructions starting on line 6 say:
Add a new paragraph after the third 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.

The first part of this new paragraph is redundant with the already existing third paragraph text in 802.3ae-2002.

SuggestedRemedy

Change the editing instruction on line 6
from
Add a new paragraph after the third to read:
to
Change the third paragraph to read:

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.1** *P* **68** *L* **6** # **544**

Grow, Robert Intel

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

Invalid editing instruction.

SuggestedRemedy

From the redundant content, I think this is really a "Replace third paragraph with the following:".

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **65** *L* **14** # **46**

Scott Simon Cisco Systems, Inc.

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

The tone table and remote PMA/PMD MMDs are making poor use of the MMD space available. These MMDs can be collapsed into the original PMA/PMD MMD

SuggestedRemedy

Move the Remote PMA/PMD MMD registers into the "reserved" register spaces after their counterparts in the PMA/PMD MMD. Modify and move the descriptive text at the beginning of the Remote PMA/PMD MMD subclause into the appropriate place of the PMA/PMD MMD.

Move the tone table and it's descriptive text to 1.56 through 1.64

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **68** *L* **26** # **562**

Brown, Benjamin Independent

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

Fix wording and use proper MMD label

SuggestedRemedy

Replace "as the tone table MMD" with "through the 10PASS-TS tone table MMD"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **68** *L* **34** # **749**

Booth, Brad Intel

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

Avoid the use of italics and underlines in regular text.

SuggestedRemedy

Remove underlines under "o" in office and "r" in remote. Remove italics from "61.1".

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **68** *L* **34** # **563**

Brown, Benjamin Independent

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

A word and a question

SuggestedRemedy

Replace "(the central office)" with "(the central office side)"

Is it okay to have underscores in the middle of this text? I've seen it in tables before but I'm concerned that the IEEE editors will see this as part of their editing instructions and remove it.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **68** *L* **36** # **750**

Booth, Brad Intel

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

New paragraph required.

SuggestedRemedy

Start new paragraph with "Some register behavior may...".

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **68** *L* **38** # **751**

Booth, Brad Intel

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

Information in paratheses should be with the corresponding tables.

SuggestedRemedy

Move the "(denoted by ..." information to the register descriptions that use it.

Same applies to the "with the tag MW = Multi-word". Move the text to the registers descriptions that use it.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **68** *L* **44** # **545**

Grow, Robert Intel

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

Superflous editing information.

SuggestedRemedy

Remove the partnthetical comment reference from the instruction.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **68** *L* **44** # **906**

Schneiderheinze, Burkart Infineon

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

Insert a new paragraph after the third to read (comment #549/D1.732): Reason for change can be removed

SuggestedRemedy

remove "(comment #549/D1.732)"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **68** *L* **54** # **752**

Booth, Brad Intel

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

Keep text with the table.

SuggestedRemedy

Fix.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **70** *L* **3** # **753**

Booth, Brad Intel

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

MMD's 6, 7 and 29 should have registers 5 and 6, so that reading registers 5 and 6 from any MMD would return the same set of information.

SuggestedRemedy

Change to make registers 5 and 6 available across all MMDs. Move the starting point for the tone table registers to permit the use of registers 5 and 6.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **70** *L* **3** # **477**

Cravens, George Mindspeed

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

Vendor Specific MMD should not require implementation of registers 5 and 6 since MMDs 6, 7, and 29 are already given exceptions.

NOTE: Also delete the apostrophe in "MMD's" since it's neither a contraction nor possesive.

SuggestedRemedy

Change the first sentence to include MMDs 30 and 31 in the exception.

...(with the exception of MMDs #6, 7, 29, 30, and 31), ...

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **70** *L* **4** # **546**

Grow, Robert Intel

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

Ambiguous antecedent, "this register" is ambigous. Is it "these registers" or one of the two?

SuggestedRemedy

Fix ambiguity and remove the commas from the first sentence or the paragraph.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **70** *L* **48** # **863**

Schneiderheinze, Burkart Infineon

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

meaning of 'Clause 22 register present' not clear, if set to 0, clause 22 register not supported? 802.3-2002 and 802.3ah Clause 22.2.4 however require all devices with MII to provide basic register set

SuggestedRemedy

add a note which resolves the concern (i.e. all clause 22 register not supported, also basic register set)

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **70** *L* **6** # **862**
Schneiderheinze, Burkart Infineon

Comment Type **E** *Comment Status* **D**
register address 5.13 not correct

SuggestedRemedy
change 5.13 to 6.13

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2** *P* **70** *L* **7** # **808**
Tom Mathey Independent

Comment Type **E** *Comment Status* **D**
Typo in text "Bit 5.13"

SuggestedRemedy
Text should be "Bit 6.13"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1** *P* **71** *L* **24** # **754**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Extraneous use of "reserved" registers.

SuggestedRemedy
Condense the registers.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1** *P* **76** *L* **33** # **555**
Grow, Robert Intel

Comment Type **TR** *Comment Status* **D**
Mixing control and status in a register is a bad idea. We have avoided that in the past. This register (and other registers like 1.22) are named control, but have a least one status bit.

SuggestedRemedy
Separate the control and status bits into different registers for all new registers.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1** *P* **79** *L* **51** # **397**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Too many trivial tables from here on.

SuggestedRemedy
Group some of them up into fewer tables. e.g. tables 45-13,14,15 could be combined, and 16-22 and so on.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1** *P* **91** *L* **54** # **883**
Schneiderheinze, Burkart Infineon

Comment Type **T** *Comment Status* **D**
2B line attenuation register missing

SuggestedRemedy
add respective register or share register with 10PASS-TS (register 1.34

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.11** *P* **74** *L* **30** # **161**
Edward Beili Actelis Networks Inc.

Comment Type **TR** *Comment Status* **D**
When link is forced down there's no way of telling the partner to shut up completely for some predefined time or immediately start with the handshake tones.

SuggestedRemedy
Add a new value in PMA/PMD link control and link control status to allow to force complete silence for a period of time specified in yet another register.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.11** *P* **74** *L* **37** # **865**
Schneiderheinze, Burkart Infineon

Comment Type **T** *Comment Status* **D**
meaning of link control bit not clear, register 1.0 (PMA/PMD control 1 register) provides at bit position 15 a reset bit, what is the correlation between these 2 bits

SuggestedRemedy
clarify meaning

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.11** *P* **74** *L* **37** # **551**

Grow, Robert — Intel

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

Link status is determined by the state of the link, and link status can't be forced to "up" or "down". A control bit can enable/disable the link which in the absence of errors will result in the corresponding link status. Shouldn't use the same terms for a derived status and an indirect control of that status.

SuggestedRemedy

Change to 0=disabled, 1=enabled. Correct supporting paragraph. ("The STA may enable the . . .", and "The STA may disable the link by . . .".

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.11.2** *P* **75** *L* **14** # **809**

Tom Mathey — Independent

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

The convention in 802.3 for binary numbers is to show the LSB on the far left, and the MSB on the far right.

SuggestedRemedy

Show binary value in the normal 802.3 manner. Also line 19

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.12** *P* **75** *L* **39** # **866**

Schneiderheinze, Burkart — Infineon

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

relation between link status and PMA/PMD status 1 register receive link status not clear

SuggestedRemedy

as long as link is down or initializing receive link status of PMA/PMD status 1 register has to be set to PMA/PMD receive link down

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.13** *P* **71** *L* **31** # **811**

Tom Mathey — Independent

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

Figure 61-2 clearly shows the aggregation layer is clearly and wholly within the PCS, and the PMA/PMD are merely a transport mechanism to carry the PCS bits. Thus the following clauses properly belong in the PCS layer.

SuggestedRemedy

Move following to PCS layer.
45.2.1.13 10P/2B aggregation discovery control register
45.2.1.14 10P/2B aggregation discovery code
45.2.1.15 10P/2B link partner PMI aggregate control register
45.2.1.16 10P/2B remote aggregate data

If in doubt, notice that these registers are used only by the PCS layer to support the NPAR and SPAR registers, and have no use in the PMA layer. If left in the PMA layer, then the signals will have to cross the alpha beta interface in order to get to the PCS layer and be added to table 61-9 with a note that the signals have no use in the PMA layer.

Simply because these registers have been in this layer in previous drafts is no reason to continue the error.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.13.1** *P* **76** *L* **41** # **140**

Kimpe, Marc — Adtran

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

The subclause states that the remote discovery register is not a clause 45 object but a variable of the PMI aggregation PCS function. This is also referenced in 61.2.2.8.3 (p. 339 line 16) & 61.a.2 (p. 560 line 28). However, I could not find any definition of the remote discovery register. I assume that it must contain, at a minimum, the information contained in table 61-129 to 61-136.

SuggestedRemedy

Create and reference an exact definition of the remote discovery register (number of bits, name, description and R/W status) either in clause 45 or clause 61.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.13.1** *P* **76** *L* **50** # **812**

Tom Mathey Independent

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

Text "should" is not strong enough and is not proper within a standard.

SuggestedRemedy

Replace "should" with "shall".

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.14** *P* **77** *L* **35** # **907**

Schneiderheinze, Burkart Infineon

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

"10P/2B aggregation discovery code register" is available per PMA, not per PCS. The same applies to page 78, line 8 (10P/2B link partner PMI aggregate control) and page 79, line 21 (? aggregate data)

SuggestedRemedy

use wording from page 76, line 13 (10P/2B aggregatetion discovery control): "shall be implemented as a unique register for each PMA MMD in a package"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.15.1** *P* **78** *L* **34** # **163**

Edward Beili Actelis Networks Inc.

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

It says that Remote PMI_Aggregate_register is accessed via G.HS messages (which is good since it allows to add a new pair to an existing aggregated link via a G.HS message over that pair). However it also says that the operation "must be performed only when the link status is down (i.e., neither Initializing nor Up).". I read the "link" here as the aggregated link and not the pair, so this is bad, since it precludes dynamic aggregation modifications.

SuggestedRemedy

If my understanding of this paragraph is correct I would suggest the following change, to allow addition and removal of pairs to an already operating link:
"The write operation to the Remote PMI_Aggregate_register can be performed independently of the aggregated link status, provided that at least one PMA/PMD in aggregation group in -O is Ready for Handshake."

Note also that if a pair is already assigned to the aggregation group in both -O and -R PCS than it's addition/removal is done by PMA/PMD link control register (see Table 45-5) which can set the pair down or initiate it..

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.15.1** *P* **78** *L* **46** # **908**

Schneiderheinze, Burkart Infineon

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

Old register name. Changed from "10P/2B remote aggregate data" to "10P/2B link partner PMI aggregate data". The same applies to page 78 line 51 and page 79 lines 12, 14, 26, 29, 33, 35.

SuggestedRemedy

change register name

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.18** *P* **80** *L* **7** # **867**

Schneiderheinze, Burkart Infineon

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

wrong cross ref for 2BASE-TL

SuggestedRemedy

update cross ref to 63.2.2.3

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.19** *P* **80** *L* **26** # **478**

Cravens, George Mindspeed

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

Based on the definition of the "Multi-Word" registers, (45.2, pg. 68, line 49), all registers labeled "MW" are cleared to zero upon read of the most significant 16 bits.

The register description should note that the bits are reset to all zeroes upon read (as well as upon MMD reset).

SuggestedRemedy

Add "and upon read" after "execution of the MMD reset".

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2.1** *P* **73** *L* **33** # **547**

Grow, Robert Intel

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

It is not clear in what context the added sentence applies.

SuggestedRemedy

Change to read: "For 10PASS-TS or 2BASE-TL operations, when read as one, a fault has been detected and more detailed . . ."

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.20** *P* **80** *L* **44** # **479**

Cravens, George Mindspeed

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

Based on the definition of the "Multi-Word" registers, (45.2, pg. 68, line 49), all registers labeled "MW" are cleared to zero upon read of the most significant 16 bits.

The register description should note that the bits are reset to all zeroes upon read (as well as upon MMD reset).

SuggestedRemedy

Add "and upon read" after "execution of the MMD reset".

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.3** *P* **73** *L* **40** # **548**

Grow, Robert Intel

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

This paragraph in its current form is likely to generate interpretations requests. The section is about two registers yet it uses the phrase "this register", etc. If these registers are part of the Link Partner MMD, it can only have one value as well as bit definition and the paragraph is not needed, it can simply be referenced. If the Link Partner MMD can have a different value (e.g., the link partner's PMD/PMD device identifier), then it isn't the same registers but two different registers that have the same format.

SuggestedRemedy

Delete the added paragraph, and correct by adding a description of the registers in 45.7. Reference 1.2, 1.3 definitions for format rather than replicating.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.3** *P* **73** *L* **42** # **864**

Schneiderheinze, Burkart Infineon

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

"Therefore, this register is a member ?" One could think that register is member of LINK partner register only

SuggestedRemedy

modify the sentence in the following way: "Therefore, this register is also?"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.35** *P* **88** *L* # **458**

Squire, Matt Hatteras Networks

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

The register should allow a range of data values rather than just a fixed rate.

SuggestedRemedy

Replace the Data rate with 3 fields: min rate, max rate, step (reference handshake section for what the ranges can mean).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.35** *P* **88** *L* **14** # **158**

Edward Beili Actelis Networks Inc.

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

Currently defined 2B Data Rate register allows one to specify only fixed data rate administrative values. Current operating data rate of a particular PMD is unknown, especially if the Data Rate register is overwritten since last activation.
In addition no meanings are given if one desires to use line probing.

SuggestedRemedy

- Add 11 bit long "Data Rate" field in 45.2.1.11 "10P/2B PMA/PMD status register", showing current Data Rate of an operating (Up) PMA/PMD link (multiple of 64Kbps). When the link is down or initializing the value of this field shall be 0.

- Make aPmdProfileSelect variable in Clause 30 to be a list of integers, in order to allow a management station to choose a number of profiles

- Replace 45.2.1.35 with the following text:

45.2.1.35 2B PMD parameters register (Register 1.x, 1.x+1)
The 2B PMD parameters register sets the transmission parameters for an individual 2BaseTL PMA/PMD link. When the link is reset or initialized (using PMA/PMD link control register in -O side), these parameters are used by the peer PMA/PMDs in an attempt to achieve specified settings.

The register allows one to specify a single fixed Data Rate or up to two Data Rate Ranges at the -O PMA/PMD.

If at least one Data Range is specified with different Min and Max Data Rates, the peer PMA/PMDs perform line probing (PMMS), at the end of which the link is trained with the highest possible rate indicated by the line probing.
In the case of a single fixed Rate specified (Min Data Rate1 == Max Data Rate1, Data Rate Step1/2 = Min/Max Data Rate2 = 0), the line probing is not performed and link is trained at the specified Rate.

Since writing to this register does not have an immediate effect, reading this register returns the desired parameters, which are not necessarily the current operating parameters.

For more information on how these parameters are passed across the physical link using G.994.1 signaling, see 61.3.8.7.4 and 61.3.8.7.5.

The bit definitions for the 2B PMD parameters register are found in Table 45-29.

Table 45-29- 2B PMD parameters register bit definition

Bit(s) Name Description R/W
1.x.31:29 Reserved value always 0, writes ignored R/W
1.x.28:22 Min Data Rate1 Min Data Rate of the 1st Range
N=3..89: multiple of 64kbps
Data Rate =64xN kbps O: R/W
R: N/A
1.x.21:15 Max Data Rate1 Max Data Rate of the 1st Range
N=3..89: multiple of 64kbps
Data Rate =64xN kbps O: R/W
R: N/A
1.x.14:8 Data Rate Step1 Data Rate Step of the 1st Range
N=1..86: multiple of 64kbps O: R/W
R: N/A
1.x.7:2 Power1 Signal Power of the 1st Range
x:multiple of 0.5 dBm to add to 5 dBm offset
Power = (5 + 0.5x) dBm O: R/W
R: RO
1.x.1:0 Constellation1 Constellation for the 1st Range
00 = Automatic (16-TCPAM for rates below 48, 32-TCPAM for rate 48 and above)
01 = 32-TCPAM.
10 = 16-TCPAM
11 = reserved O: R/W
R: RO
1.x+1.31:29 Reserved value always 0, writes ignored R/W
1.x+1.28:22 Min Data Rate2 Min Data Rate of the 2nd Range
N=3..89: multiple of 64kbps
Data Rate =64xN kbps O: R/W
R: N/A
1.x+1.21:15 Max Data Rate2 Max Data Rate of the 2nd Range
N=3..89: multiple of 64kbps
Data Rate =64xN kbps O: R/W
R: N/A
1.x+1.14:8 Data Rate Step2 Data Rate Step of the 2nd Range
N=1..86: multiple of 64kbps O: R/W
R: N/A
1.x+1.7:2 Power2 Signal Power of the 1st Range
x:multiple of 0.5 dBm to add to 5 dBm offset
Power = (5 + 0.5x) dBm O: R/W
R: RO
1.x+1.1:0 Constellation2 Constellation for the 2nd Range
00 = Automatic (16-TCPAM for rates below 48, 32-TCPAM for rate 48 and above)
01 = 32-TCPAM.
10 = 16-TCPAM
11 = reserved O: R/W
R: RO

Examples:
1. To allow the PMD to pick the highest possible rate regardless of profile:
- MinRate1=3, MaxRate1=89, Step1=1, Power1=0,Constellation1=0
MinRate2=MaxRate2=Step2=Power2=Constellation1=0

2. To do a specific profile:
- e.g. profile1:
Region=AnnexA,
MinRate1=MaxRate1=48, Step1=0, Power1=17, Constelation1=32-TCPAM,
MinRate2=MaxRate2=Step2=Power2=Constelation2=0.

3. To do a number of profiles:
- e.g. profile1-5:

Region=AnnexA,
MinRate1=8, MaxRate1=11, Step1=3, Power1=17, Constellation1=0 # 512, 712 Kbps
MinRate2=16, MaxRate2=48, Step2=16, Power2=17, Constellation2=0 # 1024, 2048, 3072 Kbps
- profile6-8:
Region=AnnexB,
MinRate1=32, MaxRate1=48, Step1=16, Power1=19, Constellation1=0 # 2048, 3072Kbps
MinRate2=16, MaxRate2=16, Step2=0, Power2=17, Constellation2=0 # 1024Kbps

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.35** *P* **88** *L* **22** # **868**

Schneiderheinze, Burkart Infineon

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

g.991.2 does not provide a mechanism to set these parameter for the link partner device

SuggestedRemedy

the only way the desired behaviour can be achieved is limiting the capability list of the -O device, remove 2B PMD register out of the Link Partner MMD

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.35** *P* **88** *L* **33** # **139**

Kimpe, Marc Adtran

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

The current wording of 45.2.1.35 states that "The 2B PMD parameters registers set the transmission parameters for the PMD. When the link is initialized or reset, these parameters shall be used by the PHY transmitter". A 2-BASE-TL will rarely know a priori on which length and loop configuration it is operating, hence there is no way to know which data rate a given loop will support.
We propose to add extra bits to the PMD register that will allow a provider to select a priori one or more allowed profiles to run or to allow the PMD to pick the higher rate regardless of profile. If one or more profiles are selected, then the PHY is only allowed to come out in the profile with the highest data rate allowed by the loop otherwise the PHY will come out in the highest data rate that the loop will allow.

SuggestedRemedy

Extend the 2B PMD parameter register by 6 bits.
bit 1: a value of 1 means that the 2BASE-TL PHY picks the highest rate that the loop supports and overides any profiles specified in bits 2 to 6. A value of 0 means that the 2 BASE-TL PHY is only allowed to come in data mode under one of the profile selected by bits 2 to 6. If multiple profiles are allowed, the PHY will come up with the profile allowing the highest data rate over the loop the PHY is connected to.
bit 2: a value of 1 means that profile 1 (annex A) or 6 (annex B) is allowed
bit 3: a value of 1 means that profile 2 (annex A) or 7 (annex B) is allowed
bit 4: a value of 1 means that profile 3 (annex A) or 8 (annex B) is allowed
bit 5: a value of 1 means that profile 4 (annex A) or 9 (annex B) is allowed
bit 6: a value of 1 means that profile 5 (annex A) or 10 (annex B) is allowed

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.36** *P* **88** *L* **54** # **869**

Schneiderheinze, Burkart Infineon

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

wrong cross ref

SuggestedRemedy

update cross ref to 63.2.2.3

Proposed Response *Response Status* **O**

Cl **45** SC **45.2.1.36** P **89** L **8** # **870**
Schneiderheinze, Burkart Infineon

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

no reason that the 2B line quality threshold register does not exist on the -R side

SuggestedRemedy

2B Line quality threshold register is RO for the -R side

Proposed Response *Response Status* **O**

Cl **45** SC **45.2.1.37** P **89** L **25** # **480**
Cravens, George Mindspeed

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

Based on the definition of the "Multi-Word" registers, (45.2, pg. 68, line 49), all registers labeled "MW" are cleared to zero upon read of the most significant 16 bits.

The register description should note that the bits are reset to all zeroes upon read (as well as upon MMD reset).

SuggestedRemedy

Add "and upon read" after "execution of the MMD reset".

Proposed Response *Response Status* **O**

Cl **45** SC **45.2.1.37** P **89** L **25** # **871**
Schneiderheinze, Burkart Infineon

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

wrong cross ref

SuggestedRemedy

update cross ref to 63.2.2.3

Proposed Response *Response Status* **O**

Cl **45** SC **45.2.1.37** P **89** L **27** # **872**
Schneiderheinze, Burkart Infineon

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

code vialotions of the link partner device will be read using an EOC message, within this message only 2 bytes for code violations, reasons for doubling the size to 4 byte not clear

SuggestedRemedy

adjust the size of the 2B code violation register to 16 bit

Proposed Response *Response Status* **O**

Cl **45** SC **45.2.1.37** P **89** L **36** # **873**
Schneiderheinze, Burkart Infineon

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

Code violation counter is roll over counter, all other 2B performance counter (2B errored second, 2B SES, 2B LOSW, 2B AUS) are non roll over counter

SuggestedRemedy

change 2B code violation counter to non roll over

Proposed Response *Response Status* **O**

Cl **45** SC **45.2.1.38** P **89** L **46** # **874**
Schneiderheinze, Burkart Infineon

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

wrong cross ref

SuggestedRemedy

update cross ref to 63.2.2.3

Proposed Response *Response Status* **O**

Cl **45** SC **45.2.1.38** P **89** L **50** # **875**
Schneiderheinze, Burkart Infineon

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

errored second of the link partner device will be read using an EOC message, within this message only 1 bytes for errored seconds, reasons for doubling the size to 2 byte not clear

SuggestedRemedy

adjust the size of the 2B errored seconds register to 8 bit

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.39** *P* **90** *L* **12** # **878**
Schneiderheinze, Burkart Infineon

Comment Type **E** *Comment Status* **D**
wrong cross ref

SuggestedRemedy
update cross ref to 63.2.2.3

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.39** *P* **90** *L* **17** # **876**
Schneiderheinze, Burkart Infineon

Comment Type **T** *Comment Status* **D**
severely errored second of the link partner device will be read using an EOC message, within this message only 1 bytes for errored seconds, reasons for doubling the size to 2 byte not clear

SuggestedRemedy
adjust the size of the 2B severely errored seconds register to 8 bit

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.4** *P* **73** *L* **51** # **755**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Table 45-6 should be made to fit on one page.

SuggestedRemedy
Make the following tables fit on one page: 45-6, 45-22, 45-33, 45-81, 45-84, 45-102, and 45-103.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.40** *P* **90** *L* **36** # **879**
Schneiderheinze, Burkart Infineon

Comment Type **E** *Comment Status* **D**
wrong cross ref

SuggestedRemedy
update cross ref to 63.2.2.3

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.40** *P* **90** *L* **41** # **877**
Schneiderheinze, Burkart Infineon

Comment Type **T** *Comment Status* **D**
LOSW of the link partner device will be read using an EOC message, within this message only 1 bytes for LOSW, reasons for doubling the size to 2 byte not clear

SuggestedRemedy
adjust the size of the 2B LOSW register to 8 bit

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.41** *P* **91** *L* **3** # **880**
Schneiderheinze, Burkart Infineon

Comment Type **E** *Comment Status* **D**
wrong cross ref

SuggestedRemedy
update cross ref to 63.2.2.3

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.41** *P* **91** *L* **8** # **882**
Schneiderheinze, Burkart Infineon

Comment Type **T** *Comment Status* **D**
UAS of the link partner device will be read using an EOC message, within this message only 1 bytes for UAS reasons for doubling the size to 2 byte not clear

SuggestedRemedy
adjust the size of the 2B UAS register to 8 bit

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.42** *P* **91** *L* **28** # **881**
Schneiderheinze, Burkart Infineon

Comment Type **E** *Comment Status* **D**
wrong cross ref

SuggestedRemedy
update cross ref to 63.2.2.3

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.5** *P* **74** *L* **20** # **549**

Grow, Robert Intel

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

Bad grammar.

SuggestedRemedy

Return the text to that of the current standard first paragraph and correct the table reference.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.5** *P* **74** *L* **24** # **550**

Grow, Robert Intel

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

The editing instruction is incorrect. With the addition of a new Table 45-2, deletion of Table 45-6 leaves Tables 45-7 and higher of the approved standard correctly numbered.

SuggestedRemedy

Delete editing instruction. Increment the table numbers of the following inserted tables (Table 45-10 of the current standard is correctly numbered after the insertion and deletion.)

It would also be appropriate to change the editing instruction of page 70 line 10 to "Insert the following table after Table 45-1 and renumber subsequent tables as required:". With that change subsequent instructions (e.g., page 71, line 3) would be changed to read: "Replace the next to last row of Table 45-2 (renumbered to Table 45-3) with the following:", delete the instruction on page 73 line 31, etc.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3** *P* **92** *L* **42** # **909**

Schneiderheinze, Burkart Infineon

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

Register "coding violation" for counting TC_coding_errors (defined in 61.2.3.4) is gone.

SuggestedRemedy

Re-insert the register before register 3.44 and re-insert the corresponding paragraph (45.2.3.17 in D2.1). Adapt cross references accordingly (page 99 line 42, page 354 line 54, page 356 line 25).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.1** *P* **93** *L* **24** # **884**

Schneiderheinze, Burkart Infineon

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

description of reset not correct (PMA/PMD reset intead of PCS reset

SuggestedRemedy

modify PMA/PMD reset to PCS reset

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.1** *P* **93** *L* **24** # **885**

Schneiderheinze, Burkart Infineon

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

PCS control 1 register of 802.3ae has a PCS llopback bit on bit position 14 which is not shown in table 45-59

SuggestedRemedy

add loopback bit at bit position 14 or add a not that for 802.3ah PCS loopback will not be supported

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.17** *P* **95** *L* **1** # **73**

Beck, Michael Alcatel Bell n.v.

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

Subclauses 45.2.3.2.1, 45.2.3.26, 61.2.3.3.1, 61.2.3.3.8 and 61.2.3.4 all point to 45.2.3.17 for a definition and description of the "Coding violation counter register". This register is nowhere to be found.
(It was in fact removed in resolution of comment #451/D2.1, in the assumption that it wasn't being used by the Copper PCS.)

SuggestedRemedy

Create a new "TC encapsulation error counter register" (32-bit counter), similar in function to the "Coding violation counter register" in IEEE Draft P802.3ah/D2.1. In its description, specify that it counts 64/65-octet encapsulation errors in 2BASE-TL and 10PASS-TS PHYs. Update the references and register names in 45.2.3.2.1, 45.2.3.26, 61.2.3.3.1, 61.2.3.3.8 and 61.2.3.4 accordingly.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.17.4** *P* **95** *L* **48** # **911**

Schneiderheinze, Burkart — Infineon

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

wrong bit name, "PAF available" instead of "available".

SuggestedRemedy

change to "PAF available".

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.18** *P* **96** *L* **12** # **159**

Edward Beili — Actelis Networks Inc.

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

How do two -O ports, connected to each other resolve which one is going to be -R? Can they even exchange G.HS messages? Currently no mechanism defined.

SuggestedRemedy

Make sure G.HS supports -O vs. -O handshake exchange.
Add "Remote CO supported", "Remote CPE Supported" "Remote port sub-type select" registers in Table 45-204. Specify exact HS message format and exchange sequence (Both start with C-SILENCE tones? .). Should we do Auto-negotiation? This stuff should probably be done before Discovery, as discovery would try to set-if-clear on the link partner which is a CO etc.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.18.1** *P* **96** *L* **31** # **813**

Tom Mathey — Independent

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

Incomplete.

SuggestedRemedy

Add text that a write to a not supported mode is ignored.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.19** *P* **96** *L* **48** # **466**

Cravens, George — Mindspeed

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

A PMI is only marked unavailable if it is currently marked to be aggregrated to another PMD.

61.2.2.8.3 (pg. 338, line 42) states that "For a device that does not support aggregation of multiple PMIs, a single bit of this register shall be set and all other bits clear."

SuggestedRemedy

Change the sentence starting on line 48 to:

A PMI is marked as unavailable if the PMI is currently marked to be aggregated with another PMD.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.2.2** *P* **94** *L* **21** # **72**

Beck, Michael — Alcatel Bell n.v.

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

Some instances of the old names "10PASS-T" and "2BASE-T" remain.

SuggestedRemedy

Replace with "10PASS-TS" and "2BASE-TL" as appropriate. (Also in Table 45-61.)

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.2.2** *P* **94** *L* **21** # **910**

Schneiderheinze, Burkart — Infineon

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

PCS receive link status bit: This paragraph doesn?t reflect the situation of an aggregated link, as it maps only one TC_synchronized signal to this bit. In in aggregated link, there are several TC_synchronized signals.

SuggestedRemedy

Define the PCS receive link status bit as logical OR of all TC_synchronized signals.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.20** *P* **97** *L* **36** # **467**

Cravens, George — Mindspeed

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

If PAF is disabled (i.e. the PAF Avaliable bit is cleared), writes to set PMI Aggregate bits must be ignored. The second sentence of the sub-clause says that attempts to activate aggregation with an unavailable PMI are ignored, so delete the sentence that says that "No PMI Aggregate bits need be set if the PAF is disabled".

SuggestedRemedy

Delete the sentence in line 36.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.21** *P* **98** *L* **1** # **815**

Tom Mathey — Independent

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

Incomplete. In its present location and text, the receive error counter is specific to link aggregation.

SuggestedRemedy

Add text to state that the counter exists even when the PAF is not implemented, or implemented but not enabled.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.29** *P* **100** *L* **45** # **886**

Schneiderheinze, Burkart — Infineon

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

not clear whether counter counts TPS CRC errors of all aggregated links or just of 1 link

SuggestedRemedy

add a not that counter counts TPS-CRC errors of all aggregated links

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.30** *P* **101** *L* **8** # **887**

Schneiderheinze, Burkart — Infineon

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

for the complete picture TC state of all links belonging to a PMI aggregate group is necessary

SuggestedRemedy

modify register definition so that a local TC register with 32 bit exists and a remote TC register with 32 bit exist

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.8** *P* **110** *L* **15** # **567**

Brown, Benjamin — Independent

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

Missing word

SuggestedRemedy

Replace "or upon PHY" with "or upon PHY reset"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.6** *P* **103** *L* **1** # **816**

Tom Mathey — Independent

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

Refer to comment #454 D2.1.
The tone table size is excessive. The size can be reduced by use of indirect addresses. Assign a register to hold the index of the desired tone. Three registers can then hold the tone parameters. This reduces the table size from 12,290 to 4. With this reduced size, the tone table can then be moved into the 1.x PMA register set and a MMD address can be reclaimed

However, do not get clever with read inc in any attempt to reload a tone table with next index and set of values when the last tone register is read as this would special case the increment logic (and punish the general case logic for read increment for the one special and unique case of the tone table).

SuggestedRemedy

Reduce tone table size by use of indirect address. Then move tone table into 1.x PMA register set.
Do not get clever.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7** *P* **104** *L* **25** # **817**
Tom Mathey Independent

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

Move link partner registers into main body of pma

SuggestedRemedy

Move link partner registers into main body of pma. Make link partner address be a simple offset of local device addresses, such as by 32 to aid debug, implementations, etc.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7** *P* **105** *L* **36** # **912**
Schneiderheinze, Burkart Infineon

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

wrong register adress

SuggestedRemedy

Change from 71.67 to 7.67

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7** *P* **105** *L* **53** # **913**
Schneiderheinze, Burkart Infineon

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

wrong register adresses

SuggestedRemedy

change 7.28 to 7.29, change 1.27 to 1.28 twice

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.2** *P* **107** *L* **19** # **914**
Schneiderheinze, Burkart Infineon

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

wrong numbering of chapters

SuggestedRemedy

change 45.2.7.2 to 45.2.7.1.2., change 45.2.7.2.1. to 45.2.7.1.3., remove 45.2.7.3. at beginning of line 30, change 45.2.7.4. to 45.2.7.2.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.2** *P* **107** *L* **21** # **915**
Schneiderheinze, Burkart Infineon

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

According to Table 45-101, only two registers (2B PMD parameters, 2B line quality thresholds) can be written at all from -O side. Therefore a more concrete and less general description of send operation would be appropriate.

SuggestedRemedy

make paragraph more concrete, focussed on the two registers.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.7.2.1** *P* **107** *L* **28** # **888**
Schneiderheinze, Burkart Infineon

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

for 2BASE-TL there is no mechanism described in g.991.2 for the activate command

SuggestedRemedy

add a foot note that activate command is not supportd by 2BASE-TL and all settings will become valid with sending command, alternatively remove activate command because it is not needed by 10PASS-TS

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.8.1** *P* **109** *L* **36** # **441**
Law, David 3Com

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

The FEC counters defined in subclauses 45.2.8.1, 45.2.8.2 and 45.2.8.3 should be expanded to support the 10BASE-TS PHY FEC function as well. This is to provide support for related management counters.

SuggestedRemedy

Add text to subclauses 45.2.8.1, 45.2.8.2 and 45.2.8.3 to include support for the 10BASE-TS PHY FEC function.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.5** *P* **111** *L* **9** # **756**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Table headings are not used in PICS.

SuggestedRemedy
Remove table headings.

Proposed Response *Response Status* **O**

Cl **45** *SC* **Table 45-11** *P* **75** *L* **45** # **810**
Tom Mathey Independent

Comment Type **T** *Comment Status* **D**
Text at bottom of table has LH for Latches High, but there is no bit referenced.

SuggestedRemedy
Suspect that you want the link is UP to be a latching low.

Proposed Response *Response Status* **O**

Cl **45** *SC* **Table 45-2** *P* **70** *L* **14** # **564**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
If this table is "INSERT"ed, why are their underscores?

SuggestedRemedy
Determine if this is a new table (and remove the underscores) or if the editing instruction should actually be "CHANGE"

Proposed Response *Response Status* **O**

Cl **45** *SC* **Table 45-3** *P* **71** *L* **11** # **565**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
Incomplete table

SuggestedRemedy
The proper use of this "CHANGE" instruction is to duplicate the entire table that is being changed. Include the original 16 rows and show strikethroughs and underscores for changed/additional rows.

Proposed Response *Response Status* **O**

Cl **45** *SC* **Table 45-74** *P* **97** *L* **18** # **814**
Tom Mathey Independent

Comment Type **T** *Comment Status* **D**
The figures in Clause 61 all show the numbered indexes as 0..31, which also matches Clause 30. Clause 45 has 1..32.

SuggestedRemedy
Change index from 1..32 to 0..31
Also table 45-75

Proposed Response *Response Status* **O**

Cl **45** *SC* **Talble 45-4** *P* **73** *L* **22** # **566**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
Wrong footnote

SuggestedRemedy
Only the R/W description is necessary in this footnote.

Tables 45-10 & 45-11 have similar (but not identical) issues.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56** *P* **160** *L* **22** # **365**
Dawe, Piers Agilent

Comment Type **TR** *Comment Status* **D**
This draft proposes to modify 10G Ethernet but doesn't mention it in the introduction. I'm worried that this proposed change has not had adequate visibility, review or consensus in the 10G community.

SuggestedRemedy
Either: admit what we are doing, e.g. by inserting a new subclause:
'56.1.3 Unidirectional transmission
In contrast to previous editions of 802.3, in certain circumstances a DTE is allowed to transmit frames while not receiving a satisfactory signal. It is necessary for an 1000BASE-PX-D OLT to do this to bring a PON into operation (although it is highly inadvisable for a 1000BASE-PX-U to transmit without receiving). It is allowed as an option for 100BASE-X, 1000BASE-X and 10GBASE so that a partly operational DTE may report its status through OAM frames. See Clause 66.'. Add to table 56-2, a row for 10GBASE and a column for 66 10G RS, intersection cell 'O' (see another comment for how to fold this extremely helpful table up so that it still fits the page); or:
Don't modify 10G Ethernet, and delete 66.3.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56** *P* **160** *L* **22** # **366**

Dawe, Piers Agilent

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

This draft proposes to allow unidirectional transmission - a radical change from current 802.3 - but doesn't mention it in the introduction.

SuggestedRemedy

Either: admit what we are doing, e.g. by using my proposed remedy about modifying 10GE, with modifications as necessary,
or
Or: don't modify Ethernet to allow unidirectional transmission, except for 1000BASE-PX-D, delete 66.1 and 66.3, and simplify 66.2.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1** *P* **158** *L* **12** # **758**

Booth, Brad Intel

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

I really, really, really dislike the inference of a "standards gap". How can there be a standards gap when the standard was not previous written for the access market. 100BASE-FX was written for the LAN market.

SuggestedRemedy

Change the text to read: 100BASE-LX10 extends the reach of 100BASE-X to achieve 10 kms over conventional single mode two-fiber cabling.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1** *P* **158** *L* **16** # **761**

Booth, Brad Intel

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

Font size too large in Figure 56-1.

SuggestedRemedy

Reduce font size.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1** *P* **158** *L* **17** # **760**

Booth, Brad Intel

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

Figures 56-1 and 56-2 should be showing the relationship of the EFM layers to the LAN model and the OSI reference model.

SuggestedRemedy

2BASE-TL and 10PASS-TS can be merged in 56-1.

In 56-2, remove one stack and remove brackets showing OLT and ONU(s). That information belongs in the P2MP clause. The name of the medium should just be "MEDIUM". The MEDIUM should be shown as a shared medium, jagged edge on both ends. Port types should be listed under the MEDIUM.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.1** *P* **159** *L* **37** # **573**

Brown, Benjamin Independent

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

Wrong reference

SuggestedRemedy

Replace "Clause 24 and Clause 36" with "66.1 and 66.2"

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.1** *P* **159** *L* **41** # **340**

Dawe, Piers Agilent

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

I cannot discern from this clause, or 61, where the reconciliation sublayer comes from. In particular, the reader may be looking for a 2 Mb/s RS for 2BASE-TL but I couldn't find one anywhere.

SuggestedRemedy

At the end of this paragraph, add another sentence, something like:
'EFM electrical {links|connections} use the reconciliation sublayer of clause 22 operating at {10|100} Mb/s.' If 2BASE-TL and 10PASS-TS would use the RS configured for 10 and 100 Mb/s respectively, say so.
See another comment on placement of 56.1.2.2.

Proposed Response *Response Status* **O**

Cl **56** SC **56.1.2.2.1** P **160** L **15** # **572**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
Hanging sublayer

SuggestedRemedy
There shouldn't be a 56.1.2.2.1 without a 56.1.2.2.2. Remove this heading and make it part of 56.1.2.2

Proposed Response *Response Status* **O**

Cl **56** SC **56.1.2.2.1** P **160** L **15** # **507**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
Single subclause is not good structure.

SuggestedRemedy
Remove subclause heading, and make second sentence of 56.1.1.2 part of the paragraph of 56.1.2.2.1.

Proposed Response *Response Status* **O**

Cl **56** SC **56.1.3** P **160** L **25** # **574**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
Extra underscore

SuggestedRemedy
Remove the underscore between "100BASE-LX" and the open parenthesis

Proposed Response *Response Status* **O**

Cl **56** SC **56.1.3** P **160** L **30** # **762**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
1000BASE-LX10 should be on one line.

SuggestedRemedy
Change hyphen to non-breaking hyphen.

Proposed Response *Response Status* **O**

Cl **56** SC **56.1.3** P **160** L **34** # **763**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
multi-mode should be multimode.

SuggestedRemedy
fix

Proposed Response *Response Status* **O**

Cl **56** SC **56.1.3** P **160** L **35** # **764**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Missing period at the end of the second paragraph.

SuggestedRemedy
Fix.

Proposed Response *Response Status* **O**

Cl **56** SC **56.1.3** P **162** L **17** # **508**
Grow, Robert Intel

Comment Type **TR** *Comment Status* **D**
Table 56-2, the optional indications under clause 66 are wrong as the PCS is mandatory and as are the unidirectional changes of clause 66 (66.4.4.1, 66.4.4.2).

SuggestedRemedy
Change "100" column of Clause 66 to M for 100BASE-LX10 and 100BASE-BX10.
Change "1G column of Clause 66 to M for 1000BASE-LX10 and 1000BASE-BX10.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.3** *P* **162** *L* **2** # **342**

Dawe, Piers — Agilent

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

Nice table but I don't think there should be a 'shall' in an introduction clause with no PICS. Doesn't the implementer declare compliance clause by clause? Also, sentence might be better in the singular.

SuggestedRemedy

Change to:
A complete implementation conforming to one or more nomenclatures meets the requirements of the corresponding clauses.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.3** *P* **162** *L* **22** # **510**

Grow, Robert — Intel

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

Table 56-2. There is no specification of a mandatory PCS for P2MP in this table as there should be. There is significant inconsistency on specifications of the 1000BASE-X PCS in the document. Subclause 66.2.2 and its subclauses indicate what is mandatory for any subscriber access network using 1000BASE-X PCS (including unidirectional transmission). The 1000BASE-X PCS is mandatory for all 1000BASE-PX PMDs but unidirectional transmission is only for 1000BASE-PX-D PMDs.

SuggestedRemedy

The column either needs to be split (with appropriate M and O), or M needs to be defined as at least some mandatory capabilities (and the two PX rows labled M).

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.3** *P* **162** *L* **25** # **765**

Booth, Brad — Intel

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

One footnote is all that should be required. Footnote should be left justified.

SuggestedRemedy

Change footnote to read: O = Optional, M = Mandatory. Left justify the footnote.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.3** *P* **163** *L* **4** # **766**

Booth, Brad — Intel

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

Remove the word "Clause".

SuggestedRemedy

Change to read "(see 21.6)."

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.4** *P* **163** *L* **7** # **429**

Law, David — 3Com

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

While this standard is related to subscriber access networks is it really correct that none of the new PHYs support ISO/IEC 11801 media. If this is correct then fine, but if this is not correct as I believe suggested entries for Table G1 and G.5 of ISO/IEC 11801 should be provided in this subclause.

SuggestedRemedy

Provide entries for Tables G1 and G.5 of ISO/IEC 11801 for EFM PHYs as appropriate. I believe entries should be provided for 100BASE-LX10, 100BASE-BX, 1000BASE-LX10 and 1000BASE-BX.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.4** *P* **163** *L* **8** # **428**

Law, David — 3Com

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

I'm not too sure what the point of this text is. Normally this particular subclause is included to provide suggested additions to ISO/IEC 11801 - for examples of this see 21.7 and 34.4. In both these cases (100Mb/s and 1000MB/s) other standards were referenced to build PHYs but these were not included in 21.7 and 34.4 which only related to ISO/IEC 11801. In addition it would seem odd if subclause 61.1.2 (not Clause as the text currently states) was the only place in the whole of EFM where other standards are referenced.

SuggestedRemedy

Remove current text in subclause 56.4.

Proposed Response *Response Status* **O**

Cl **56** *SC* **Figure 56-1** *P* **158** *L* **21** # **570**
Brown, Benjamin Independent

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

Wrong sublayer label

SuggestedRemedy

Replace "LLC-LOGIC LINK CONTROL" with "LLC-LOGICAL LINK CONTROL OR OTHER MAC CLIENT"

The same thing applies to both stacks in Figure 56-2

Proposed Response *Response Status* **O**

Cl **56** *SC* **Figure 56-1** *P* **158** *L* **28** # **305**
Dawe, Piers Agilent

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

This diagram shows some sublayers common across port type and some separate. What does this mean? Although figures 64-2 and 43-1 needs to show single and multiple instantiations, other layer diagrams starting with fig. 1-1 seem to be showing same and different flavours of a layer. 802.3 (2002) figures 2-1, 4-1, 6-1, 22-1 and 35-1 show separate RSs separately.

SuggestedRemedy

Show horizontally separate reconciliation sublayers: as many as there are different RS clauses defining them. E.g. 100BASE-X (cl.22) and 1000BASE-X (cl.35) RSs are different.

Proposed Response *Response Status* **O**

Cl **56** *SC* **Figure 56-2** *P* **159** *L* **16** # **571**
Brown, Benjamin Independent

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

Extra sublayer

SuggestedRemedy

According to the description in Clause 65, the FEC function exists within the PCS, not as an additional sublayer. Perhaps the line between the PCS and the FEC could be dashed.

On this same page, in 56.1.2 line 48: Replace "FEC sublayer" with "FEC function"

Proposed Response *Response Status* **O**

Cl **56** *SC* **Figure 56-2** *P* **159** *L* **20** # **306**
Dawe, Piers Agilent

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

The medium can't have a stub to the left of the OLT's MDI. See e.g. fig 14-1 or 15-1 for styles that clearly avoid the implied stub.

SuggestedRemedy

Remove the apparent stub. Similarly in figure 60-1.

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-1** *P* **161** *L* **52** # **575**
Brown, Benjamin Independent

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

Wrong reference in footbote

SuggestedRemedy

In footbote d, replace "63B" with "62B"

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-1** *P* **161** *L* **53** # **341**
Dawe, Piers Agilent

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

Note d refers to wrong annex.

SuggestedRemedy

62B?

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-1** *P* **162** *L* **17** # **423**

Law, David 3Com

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

The Clause 66 '100 RS, PCS, PMA' column is marked as 'O' Optional for 100BASE-LX10 and 100BASE-BX10 PHYs however a PHY has to have a RS, PCS and PMA so this cannot be optional.

More importantly subclause 66.1.2 states 'The 100BASE-X PCS and PMA for subscriber access networks shall conform to the requirements of the 100BASE-X PCS specified in 24.2 and the 100BASE-X PMA specified in 24.3 with the following exception:' - the Clause 66 PCS and PMA specification is therefore mandatory for a 100BASE-LX10 and 100BASE-BX10 (subscriber access network) PHYs and marking the Clause 66 '100 RS, PCS, PMA' as Optional is in conflict with this shall statement.

In addition, as can also be seen from the subclause 66.1 title 'Modifications to the physical coding sublayer (PCS) and physical medium attachment (PMA) sublayer, type 100BASE-X' Clause 66 only specifies a PCS and PMA for the 100BASE-BX and 100BASE-LX PHYs, it does not specify a RS. This should also be corrected in the table column header.

SuggestedRemedy

Change the Clause 66 '100 RS, PCS, PMA' column entries for the 100BASE-LX10 and 100BASE-BX10 PHYs to be 'M'.

Change the text '100 RS, PCS, PMA' in the Clause 66 column to read 'Subscriber access 100BASE-X PCS & PMA'. Note that the header text in these columns should be rotated through 90 degrees to allow this additional text to be added.

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-2** *P* **162** *L* **10** # **426**

Law, David 3Com

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

Suggest the that the header text in each columns should be rotated through 90 degrees to allow additional text to be added. This additional space should be used t provide column headers that more closely match the actually titles of the Clauses referenced.

SuggestedRemedy

Rotate header text in each column.

Perform the following changes as there will be more space available.

In 2nd column change 'LX10 PMD' to read '100BASE-LX10 PMD'
In 3rd column change 'BX10 PMD' to read '100BASE-BX10 PMD'
In 4th column change 'LX10 PMD' to read '1000BASE-LX10 PMD'
In 5th column change 'BX10 PMD' to read '1000BASE-BX10 PMD'
In 6th column change 'PX10 PMD' to read '1000BASE-PX10 PMD'
In 7th column change 'PX20 PMD' to read '1000BASE-PX20 PMD'
In 8th column change 'Cu PCS' to read '10PASS-TS and 2BASE-TL PCS'
In 9th column change '10M PMA & PMD' to read '10PASS-TS PMA & PMD'
In 10th column change '2M PMA & PMD' to read '2BASE-TL PMA & PMD'
In 11th column change 'P2MP MC' to read 'Multi-point MAC Control'
In 12th column change '1G RS, PCS, PMA' to read '1000BASE-X RS, PCS & PMA extensions for P2MP' (Note this is duplication of a change suggested in a TR comment).
In 13th column change 'FEC' to read '1000BASE-X PCS extension for FEC'
In 14th column change '100 RS, PCS, PMA' to read 'Subscriber access 100BASE-X PCS & PMA'. (Note this is duplication of a change suggested in a TR comment).
In 15th column change '100 RS, PCS, PMA' to read 'Subscriber access 1000BASE-X PCS'. (Note this is duplication of a change suggested in a TR comment).

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-2** *P* **162** *L* **10** # **427**

Law, David 3Com

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

Clause 66 only specifies a PCS and PMA for the 100BASE-BX and 100BASE-LX PHYs as the title of subclause 66.1 states 'Modifications to the physical coding sublayer (PCS) and physical medium attachment (PMA) sublayer, type 100BASE-X'. It does not specify a RS.

SuggestedRemedy

Suggest the text '100 RS, PCS, PMA' in the Clause 66 column be changed to read 'Subscriber access 100BASE-X PCS & PMA'. Note that the header text in these columns should be rotated through 90 degrees to allow this additional text to be added.

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-2** *P* **162** *L* **11** # **425**

Law, David 3Com

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

It appears very odd to have the Clause 65 '1G RS, PCS, PMA' marked as 'M' Mandatory and then to also have the Clause 66 '1G RS, PCS, PMA' marked as 'O' Optional for the 1000BASE-PX PHYs. This implies that there can be two PCSs present if the optional (which actually has to be Mandatory - see other comment) Clause 66 '1G RS, PCS, PMA is included.

The explanation here is that Clause 65 does not actually specify a '1G RS, PCS, PMA' but instead, as the Clause 65 title states it specifies 'Extensions of the Reconciliation Sublayer (RS) and Physical Coding Sublayer (PCS) / Physical Media Attachment (PMA) for 1000BASE-X for Multi-Point Links and Forward Error Correction'.

SuggestedRemedy

Suggest the text '1G RS, PCS, PMA' in the Clause 65 column be changed to read '1000BASE-X RS, PCS & PMA extensions'. Note that the header text in these columns should be rotated through 90 degrees to allow this additional text to be added.

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-2** *P* **162** *L* **11** # **349**

Dawe, Piers Agilent

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

Clause 66 does not touch the 100M RS.

SuggestedRemedy

Delete 'RS' from under '100'.

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-2** *P* **162** *L* **11** # **364**

Dawe, Piers Agilent

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

Clause 66 does not touch the 1G RS or PMA.

SuggestedRemedy

Delete 'RS' and 'PMA' from right most column.

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-2** *P* **162** *L* **11** # **369**

Dawe, Piers Agilent

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

Clause 66 unidirectional transmission is not just an option for PON: as I understand it, it's necessary for the OLT and a very bad idea (we should consider forbidding it) for the OLT.

SuggestedRemedy

To avoid creating extra rows, change '1000BASE-PX10' to '1000BASE-PX-U' and '1000BASE-PX20' to '1000BASE-PX-D', change 'PX10 PMD' to 'PX-U PMD' and 'PX20 PMD' to 'PX-D PMD'. Change the intersection of 1000BASE-PX-U and '66 1G RS, PCS, PMA' (to become '66 1G PCS' per other comments) from 'O' to empty cell. Change the intersection of 1000BASE-PX-D and 66 1G PCS' from 'O' to 'M'.

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-2** *P* **162** *L* **20** # **424**

Law, David 3Com

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

The Clause 66 '1G RS, PCS, PMA' column is marked as 'O' Optional for 1000BASE-LX10, 1000BASE-BX10, 1000BASE-PX10 and 1000BASE-PX20 PHYs however a PHY has to have a RS, PCS and PMA so this cannot be optional.

More importantly subclause 66.2.2 states 'The 1000BASE-X PCS for subscriber access networks shall conform to the requirements of the 1000BASE-X PCS specified in 36.2 with the following exception:' - the Clause 66 PCS specification is therefore mandatory for these subscriber access network PHYs and marking the Clause 66 '1G RS, PCS, PMA' as Optional is in conflict with this shall statement.

In addition, as can also be seen from the subclause 66.2 title 'Modifications to the physical coding sublayer (PCS), type 1000BASE-X' Clause 66 only specifies a PCS for the subscriber access PHYs, it does not specify a RS or a PMA. This should also be corrected in the table column header.

SuggestedRemedy

Change the Clause 66 '1G RS, PCS, PMA' column entries for the 1000BASE-LX10, 1000BASE-BX10, 1000BASE-PX10 and 1000BASE-PX20 PHYs to be 'M'.

Change the text '1G RS, PCS, PMA' in the Clause 66 column to read 'Subscriber access 1000BASE-X PCS'. Note that the header text in these columns should be rotated through 90 degrees to allow this additional text to be added.

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-2** *P* **162** *L* **26** # **576**
Brown, Benjamin Independent

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

Footnotes shouldn't be centered

SuggestedRemedy

Left justify footnotes

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-2** *P* **162** *L* **27** # **818**
Tom Mathey Independent

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

SuggestedRemedy

Left justify the two notes

Proposed Response *Response Status* **O**

Cl **56** *SC* **Table 56-2** *P* **162** *L* **7** # **370**
Dawe, Piers Agilent

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

I just love this table; it's invaluable for understanding how EFM changes the 'legacy' 802.3, and understanding what sublayers may be mix-and-matched with what.

SuggestedRemedy

Please see attached file which makes some minor corrections, adds some information and folds up the resulting table to get more information into the same page width.
http://www.ieee802.org/3/efm/public/comments/d3_0/pdfs/dawe_1_0104.pdf ?

Proposed Response *Response Status* **O**

Cl **57** *SC* **57** *P* *L* # **115**
Braga, Aldobino UNH-IOL

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

Comments 56 and 57 were rejected during draft 2.1 review, but the proposed response indicated new text was to be created for this version of the draft.

I don't see said text.

SuggestedRemedy

Add promised text.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57** *P* **166** *L* **27** # **135**
Braga, Aldobino UNH-IOL

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

There are a large number of broken cross references in this clause

SuggestedRemedy

I've done my best to catalog them in braga_2_0104.pdf.
Please fix the broken cross-references.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.0** *P* **166** *L* **39** # **578**
Brown, Benjamin Independent

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

Double spaces - cut error

SuggestedRemedy

Before numerous references in this clause, there are 2 spaces. I did a little background work for you and found that everywhere you removed "CROSS REF" from D2.2 you left the spaces on either side resulting in 2 spaces. If you do a search for two spaces in FrameMaker, you should find the vast majority of these problems.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.1.2** *P* **166** *L* **27** # **130**

Braga, Aldobino UNH-IOL

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

Shouldn't the following be cross-references?
Line 27: Clause 58 and Clause 59
Line 29: Clause 60
Line 32: Clause 58, 59, and 60

SuggestedRemedy

Please make these cross-references pointing the the correct clauses

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.1.2** *P* **166** *L* **27** # **313**

Dawe, Piers Agilent

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

'Don't mess with the legacy Ethernet.'

Section a) is partly unworkable.

This ability, if present, lives in the PCS/PMA, not in the PMDs defined in clauses 58-60. The PCS doesn't know where it is. It doesn't know what wavelength or type of optics is connected to it.

Section a)2) appears to outlaw the legacy PCSs with clause 58, 59, 60 optics. For clause 58 and 59, 100BASE-LX10 and 1000BASE-LX10 like PHYs have been shipping for some time; it's too late to say their PCS/PMAs are not true Ethernet and very bad for the cost-effective, graceful evolution of Ethernet new markets such as subscriber access networks using 'legacy' components, principles and standards. 100BASE-LX10 and 1000BASE-LX10 are not just applicable mainly for subscriber access networks: they are equally at home in 'traditional' campus or telecom-core networks. Further, 1000BASE-LX10 and 1000BASE-LX are interoperable and are intended for attachment to the same PCSs - both old and new and for use in the same kinds of networks: campus and wider. And it doesn't make sense to try to associate the legality of such additional features to network type either: we don't have a watertight definition of a "subscriber access network" nor do we need one. There are just devices and cable plant engineering specs, no definition of who owns the network or anything like that.

Clause 66 RS, PCS and PMA are shown as optional in Table 56-2. That's as it should be (except for 1000BASE-PX-D, PON OLT).

For info, clause 22 has registers for Unidirectional enable and Unidirectional ability.

There is no strong reason to make the PCS unidirectional capability feature mandatory in any situation, as the OAM sublayer that uses it is optional, and the OAM sublayer can still be invoked without it (obviously without all its possible functionality).

57.1.2 needs to be changed to bring it in line with table 56-2 and common sense. These clarifications would still give the OAM supporters what they want: the unidirectional feature would appear in new silicon if it's found useful.

SuggestedRemedy

Change 57.1.2 a) 2) to:
'2) 100BASE-X, 1000BASE-X and 10 Gb/s physical layer devices may be capable of unidirectional operation thus allowing OAM remote fault indication during fault conditions.';
Change a)3) to:
'3) 1000BASE-PX-D physical layer devices, defined in Clause 60 and 66.2, support unidirectional operation in the direction from OLT to ONU that allows OAM remote fault indication from OLT during fault conditions. Unidirectional operation in the other direction is not recommended as it is likely to cause interference to the signals of other ONUs.';
and delete item a) 4).

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.1.2** *P* **166** *L* **35** # **577**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
Hanging bullet item

SuggestedRemedy
Item b) 1) shouldn't exist without a b) 2). Collapse this under b) or add a second list item

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.1.5.4** *P* **168** *L* **5** # **767**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Missing punctuation.

SuggestedRemedy
Add period to the end of the paragraph.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.10.1** *P* **176** *L* **10** # **770**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Inconsistent line weights in Table 57-2.

SuggestedRemedy
Increase line weights for the two lighter lines.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.11** *P* **177** *L* **28** # **771**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Use singular form of media in Figure 57-4.

SuggestedRemedy
Change "Media" to "Medium".

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.11.1** *P* **177** *L* **47** # **583**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
word in uppercase

SuggestedRemedy
Is additional emphasis really added just by using all uppercase on this word? The word "recommended" doesn't become stronger or weaker based on its case. Make this word lowercase.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.11.1** *P* **177** *L* **49** # **772**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Bullet points a) and b) have no punctuation at the end.

SuggestedRemedy
Put periods at the end of each bullet point.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.11.3** *P* **178** *L* **19** # **98**
Braga, Aldobino UNH-IOL

Comment Type **T** *Comment Status* **D**
"After receiving a Loopback Control OAMPDU with the Disable OAM Remote Loopback command, the remote OAM client first sends an Information OAMPDU with updated state information reflecting the local_par_action and local_mux_action parameters set to FWD and then sets the local_par_action and local_mux_action parameters to FWD via the OAM_CTL.request service primitive."

The order is incorrect.

SuggestedRemedy
Replace with:
"After receiving a Loopback Control OAMPDU with the Disable OAM 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* **O**

Cl **57** *SC* **57.2.11.5** *P* **178** *L* **52** # **584**
Brown, Benjamin Independent

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

Missing commas

SuggestedRemedy

Replace: "and if Clause 30 is present are" with "and, if Clause 30 is present, are"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.11.6** *P* **179** *L* **10** # **25**
Squire, Matt Hatteras Networks

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

Truncate the second step in both insets to be just "Send an Information OAMPDU" as the rest of the sentence ("with updated state information...") is redundant.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.11.6** *P* **179** *L* **11** # **283**
Gerhardt, Floyd Cisco Systems, Inc.

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

The text:
"b) Send an Information OAMPDU with updated state information reflecting its local_par_action set to LB and local_mux_action set to DISCARD." is redundant with the action taken in a)

SuggestedRemedy

Truncate the text to read:
b) Send an Information OAMPDU with the updated state information.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.11.6** *P* **179** *L* **14** # **21**
Squire, Matt Hatteras Networks

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

The steps ((c) and (d)) indicate set parm then transmit PDU, while the text (lines 21-28) seem to indicate transmit then set parms. I think we changed the order of the steps last time, but havent changed the text.

SuggestedRemedy

Make text conform to the order of the steps.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.11.6** *P* **179** *L* **16** # **585**
Brown, Benjamin Independent

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

Bullets out of order

SuggestedRemedy

I believe bullets c) and d) are still in the old order of setting the parameters before sending the OAMPDU. I think these should be swapped.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.11.6** *P* **179** *L* **18** # **284**
Gerhardt, Floyd Cisco Systems, Inc.

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

The text:
"b) Send an Information OAMPDU with updated state information reflecting its local_par_action and local_mux_action parameters." is redundant with the action taken in c)

SuggestedRemedy

Truncate the text to read:
d) Send an Information OAMPDU with the updated state information.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.11.6** *P* **179** *L* **20** # **99**

Braga, Aldobino UNH-IOL

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

The paragraph starting on line 20, references the old way of operation.

SuggestedRemedy

Remove the paragraph starting on line 20.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.11.6** *P* **179** *L* **25** # **100**

Braga, Aldobino UNH-IOL

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

"If state information is changed followed by the sending of an Information OAMPDU reflecting this change, it is possible for the MAC client to send frames that are discarded by the remote DTE before the local OAM client can send the Information OAMPDU instructing the remote DTE to change its local_par_action variable."

The sentence has two issues:
a) Everything up to and including the first comma no longer makes sense. As this is now the proposed way to operate.
b) The concern described in the sentence is incorrect (its backwards), the remote MAC client could send frames that are discarded by the local DTE.

SuggestedRemedy

Change the sentence to read:
"It is possible for the remote MAC client to send frames that are discarded by the local DTE before the remote OAM client can send the Information OAMPDU instructing the local DTE to change its local_par_action variable."

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.12** *P* **179** *L* **34** # **22**

Squire, Matt Hatteras Networks

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

I think its time we kill the footnote to the balloters!

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.2** *P* **169** *L* **3** # **14**

Squire, Matt Hatteras Networks

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

In addition to the exception while in loopback mode, there is also an exception for when you've put the partner in loopback mode and you discard non-OAMPDUs.

SuggestedRemedy

Change "When not in OAM remote loopback mode, .." to "In general, .."

Add sentence "When the peer OAM entity is in OAM remote loopback mode, non-OAMPDUs are discarded by the OAM sublayer so that higher layer functions (e.g. bridging) do not process the looped back frames. "

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.2** *P* **169** *L* **8** # **96**

Braga, Aldobino UNH-IOL

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

TLV is used for the first time here. Should the acronym be spelled out?

SuggestedRemedy

Spell the TLV acronym out such as:"…Organization Specific Information Type Length Value (TLV), and…"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.4** *P* **166** *L* **26** # **165**

Glenn Parsons — Nortel Networks

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

Given the work by the ITU-T in creating Y.1730 that describes Ethernet OAM requirements, it would make sense that the section that describes the OAM client mentions it. That is, the ITU-T requirements for a much larger scope client indicates several required OAM functions (e.g., loopback, discovery, performance monitoring & continuous connectivity check) that are satisfied by clause 57. This addition will show the relationship with the ITU-T work.

SuggestedRemedy

Add a new subsection:

57.2.4.1 Relationship to ITU-T Y.1730

Recommendation ITU-T Y.1730 "Requirements for OAM functions in Ethernet based networks" provides the motivations and requirements for user-plane OAM (Operation, Administration and Maintenance) functionality for Ethernet based networks. The scope includes the requirements for OAM functions for the point-to-point and multipoint-to-multipoint Ethernet connections including both dedicated and shared access.

The OAM client described in this clause performs a subset of the requirements outlined by configuring and enabling the OAM sublayer entity. These required OAM functions are:
- loopback
- discovery
- performance monitoring
- continuous connectivity check

Note that additional OAM functions described in Y.1730 are out of scope for this clause.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.4** *P* **169** *L* **32** # **15**

Squire, Matt — Hatteras Networks

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

The sentence "Upon receiving...will be learned" seems out of place. It talks about some very detailed behavior in a place where we're doing very general discussion.

SuggestedRemedy

Delete sentence.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.4** *P* **169** *L* **33** # **579**

Brown, Benjamin — Independent

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

Change wording

SuggestedRemedy

Replace "previous Information TLV," with "previously received Information TLV (indicating nothing in it has changed),"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.4** *P* **169** *L* **37** # **16**

Squire, Matt — Hatteras Networks

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

The sentence "The OAM client...Passive DTEs" is an example and it should be phrased as such.

SuggestedRemedy

Add "For example, " before the sentence.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.4** *P* **169** *L* **42** # **97**

Braga, Aldobino — UNH-IOL

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

"The OAM client transfers events by sending and receiving OAMPDUs. To increase the likelihood that a particular event is received by the remote DTE, the OAM client may send the event multiple times."

I don't know if you're trying to hold off on introducing the different OAMPDUs this early in the clause, but in the previous paragraph you explain that "particular OAMPDUs" control OAM remote loopback.

Could you do the same here?

SuggestedRemedy

Change the sentence to read:
"The OAM client transfers events by sending and receiving particular OAMPDUs."

Since the sentence following has the word "particular" in it perhaps changing it to "specific" would improve readability:
"To increase the likelihood that a specific event is received by the remote DTE, the OAM client may send the event multiple times."

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.4** *P* **169** *L* **44** # **17**

Squire, Matt — Hatteras Networks

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

The "identical sequence numbers" part of the sentence is probably too much info for this general overview given sequence numbers have not even been discussed.

SuggestedRemedy

Delete "identical sequence numbers, which have".

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.5.1.2** *P* **170** *L* **23** # **18**

Squire, Matt — Hatteras Networks

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

Not sure what the 15:3 are doing there, given that we use bits 0:6 according to table 57-3.

SuggestedRemedy

Can make that 0:6, or just eliminate that sentence altogether and have the entire flags field passed down.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.5.1.4** *P* **170** *L* **37** # **580**

Brown, Benjamin — Independent

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

Add some words

SuggestedRemedy

To the end of this last sentence, add the following:
" according to the transmit rules as decsribed in 57.3.2.2"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.5.3.2** *P* **171** *L* **26** # **19**

Squire, Matt — Hatteras Networks

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

This whole section seems disorganized. I think it starts with the function prototype in that the flags, state info, and config info are all thrown in together in random order. It might be more readable if we re-organized the parameters based on the fields they correspond to.

SuggestedRemedy

Change prototype:

OAM_CTL.request (
local_unidirectional,
local_link_status,
local_dying_gasp,
local_critical_event,
local_satisfied,
remote_state_valid,
remote_stable,
local_mux_action,
local_par_action,
information_data
)

When set, the local_undirectional parameter is used to indicate the sending station supports transmission of OAMPDUs on undirectional links as supported by some physical coding layers.

The local_link_status, local_dying_gasp, and local_critical_event parameters are used to indicate immediate event situations that must be transmitted to the peer OAM entity. The local_link_status parameter is used to convey the status of the link as determined by the underlying physical layer. When set, the local_link_status parameter will cause the OAM sublayer to transmit an Information OAMPDU with the Link Fault bit of the Flags field set and no Information TLVs. The local dying gasp parameter is used to signal a local unrecoverable failure condition. When set, the local_dying_gasp paramter will cause the OAM sublayer to transmit an Information OAMPDU with the Dying Gasp bit of the Flags field set. The local_critical_event paramter is used to signal an unspecified critical link event condition. When set, the local_critical_event paramteer will cause the OAM sublayer to transmit an Information OAMPDU with the Critical Event bit of the Flags field set.

The local_satisfied, remote_state_valid, and remote_stable parameters are used in the discovery process. The local_satisifed 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. See 57.3.2.1.

The local_mux_action and local_par_action parameters are used to control the state of the Multiplexer and Parser functions of the OAM sublayer (see 57.3.3).

The information_data parameter contains the Local Information TLV fields, and, if available, the Remote Information and Organization Specific Information TLV fields, to be included in Information OAMPDUs generated by the Multiplexer function (see 57.3.3).

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.5.3.2** *P* **171** *L* **28** # **581**

Brown, Benjamin Independent

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

polarity conflict

SuggestedRemedy

The name of "local_link_status" seems to conflict with its polarity. It seems funny to me that the status = 1 when the link is in fault. To me, it seems that it should be 1 when the link is good.

I recommend flipping the polarity or changing the name to "local_link_fault"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.5.4.2** *P* **172** *L* **31** # **20**

Squire, Matt Hatteras Networks

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

local_pdu and local_stable can be combined into one sentence.

SuggestedRemedy

Change sentence to "The local_pdu and local_stable parameters are used by the OAM sublayer to indicate to the OAM Client state information in the Discovery process. See 57.3.2.1.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.6** *P* **172** *L* **49** # **768**

Booth, Brad Intel

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

Figure number should be all on one line.

SuggestedRemedy

Change to a non-breaking hyphen.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.8.1.2** *P* **173** *L* **47** # **769**

Booth, Brad Intel

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

Start subclause on a new page as the semantics of the primitive are spread across two pages.

SuggestedRemedy

Fix as per comment.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.8.2.2** *P* **174** *L* **48** # **582**

Brown, Benjamin Independent

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

Missing values for reception_status

SuggestedRemedy

Add a sentence to this paragraph that reads: "Values for the reception_status parameter can be found in 4.3.2."

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.2.9** *P* **175** *L* **8** # **121**

Braga, Aldobino UNH-IOL

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

When OAM is enabled, a DTE capable of both Active and Passive mode shall select either Active or Passive."

My spelling and grammar aren't that great but is this a typo. Should "mode" be "modes".

SuggestedRemedy

Change mode to modes.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.1.2** *P* **180** *L* **45** # **586**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
Missing word

SuggestedRemedy
Replace "Indicates the" with "This indicates the"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.1.2** *P* **181** *L* **23** # **588**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
wrong word

SuggestedRemedy
Replace "non-OAMPDUs within the" with "non-OAMPDUs through the"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.1.2** *P* **181** *L* **4** # **587**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
wrong word

SuggestedRemedy
Replace "client to the Multiplexer" with "client through the Multiplexer"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.1** *P* **184** *L* **1** # **773**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Figure 57-5 is in the middle of a paragraph.

SuggestedRemedy
Change the frame anchor properties.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.1** *P* **184** *L* **1** # **215**
Lynskey, Eric UNH-IOL

Comment Type **TR** *Comment Status* **D**
In figure 57-5, the discovery process restarts whenever local_link_status = FAIL. The definition of this variable is that it indicates the status of the established link, as determined by the PHY. In an EPON, each ONU will turn on its laser to begin transmission and turn it off when it is done. The receiver of the OLT will re-synchronize to each ONU's transmission, and between transmissions there will potentially be no signal on the fiber, at least in the upstream direction. During this lenghty time, the PCS will reset to the LOSS_OF_SYNC state.

It would seem that this action in the PCS, a part of the PHY, would cause local_link_status = FAIL, thus restarting the OAM discovery process. If this were to be allowed to happen, then the discovery process would continually reset and would never complete for any ONU. This is obviously not what was intended, and can hopefully be fixed by a better definition of local_link_status. Specifically, when dealing with an EPON, you would want to have the local_link_status variable tied to the registrations status of an ONU. As long as an ONU is registered, the logical link is alive. Since there is only a single PHY, and it doesn't know anything about whether or not an ONU is registered, this information cannot come from the PHY. The only layer that knows this is the Multi-point MAC Control layer.

SuggestedRemedy
Modify the definition of local_link_status to: A parameter of the OAM_CTL.request service primitive, as defined in 57.2.5.3. When a multi-popint MAC control sublayer is not present, this indicates the status of the established link, as determined by the PHY. When a multi-point MAC control sublayer is present, this indicates the status of the established logical link, as determined by the multi-point MAC control sublayer.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.1** *P* **184** *L* **2** # **102**

Braga, Aldobino UNH-IOL

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

When local_lost_link_timer_done=TRUE the OAM Discovery process returns to the Link_Fault state. This results in the generation of Information OAMPDUs with the Link Fault critical link event flag set high.

This means that the local OAM device will tell the remote OAM device that there is a link fault (which is perceive as a PHY issue) even though MAC client frames could still be reliably transmitted and received in both directions.

SuggestedRemedy

How about two different flag to help the OAM client better figure out what happened?
PHY Link Fault could be triggered by link_link_status
OAM Link Fault could be triggered by local_lost_link_timer_done

Each flags could be set with an "If" statement in the LINK_FAULT state:
IF (local_link_timer_done=TRUE)
THEN oam_link_fault=TRUE
IF (local_link_status=FAIL)THEN phy_link_fault=TRUE

(This would require changes to:
line 53 on page 183
the first full paragraph on page 184
the second paragraph on page 184)

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.1** *P* **184** *L* **30** # **101**

Braga, Aldobino UNH-IOL

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

"The unidirectional transmission of OAMPDUs is supported…"

The sentence doesn't specify that unidirectional transmission is strictly done with Information OAMPDUs only

SuggestedRemedy

Change sentence to read:"The unidirectional transmission of Information OAMPDUs is supported…"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.1** *P* **184** *L* **31** # **24**

Squire, Matt Hatteras Networks

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

Might be useful to indicate local_pdu=ANY is the expected normal state.

SuggestedRemedy

Add sentence at end: "This is the expected normal operating state for OAM on fully operational links."

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.1** *P* **185** *L* **6** # **103**

Braga, Aldobino UNH-IOL

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

"If at any time the settings on either the local or remote change resulting in management becoming unsatisfied with the settings, the Discovery process returns to the SEND_LOCAL_REMOTE_1 state."

The referred management is really the local OAM client.

SuggestedRemedy

Change the line to read:
"If at any time the settings on either the local or remote change resulting in the local OAM client becoming unsatisfied with the setting, the Discovery process returns to the SEND_LOCAL_REMOTE_1 state."

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.1.1** *P* **185** *L* **15** # **589**

Brown, Benjamin Independent

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

Hanging subclause

SuggestedRemedy

57.3.2.1.1 shouldn't exist without a 57.3.2.1.2. Collapse this subclause into 57.3.2.1.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.1.1** *P* **185** *L* **18** # **105**
Braga, Aldobino UNH-IOL

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

Not to be too picky but references to Discovery in the paragraph are ambiguous.

SuggestedRemedy

Change references to "Discovery" in the paragraph to "OAM Discovery".

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.1.1** *P* **185** *L* **18** # **104**
Braga, Aldobino UNH-IOL

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

References to "management" throughout this paragraph are confusing.

SuggestedRemedy

Change "management" to "local OAM client".

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.1.1** *P* **185** *L* **21** # **106**
Braga, Aldobino UNH-IOL

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

"If, after learning of the remote OAM settings, management determines it is unsatisfied, the local DTE sets the Local Stable and Local Discovering bits to 0x0 indicating Discovering can not successfully complete due to management being unsatisfied.This sentence is difficult to read. Unsatisfied is mentioned twice."

This sentence is difficult to read. Unsatisfied is mentioned twice adding to the difficulty.

SuggestedRemedy

Please change the sentence to read:
"If the local OAM client is unsatisfied with the remote OAM settings, the local DTE sets the Local Stable and Local Discovering bits to 0x0."

Or

"If the local OAM client is unsatisfied with the remote OAM settings, the local DTE sets the Local Stable and Local Discovering bits to 0x0 indicating OAM Discovery cannot successfully complete."

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.2** *P* **185** *L* **38** # **590**
Brown, Benjamin Independent

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

an should be a

SuggestedRemedy

Replace "shall generate an CTL:OAMIR" with "shall generate a CTL:OAMIR"

Also, do the same thing on line 40

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.2.3** *P* **185** *L* **46** # **131**
Braga, Aldobino UNH-IOL

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

I don't think it is made clear that from this point on, the OAM Client does all parsing of the OAMPDUs. And that all parsing rules throughout the rest of the document are RECOMENDATIONS as defining the OAM client is out of scope for 802.3

Clause 57.4.3 Page 190 Line 40 would also benefit from a similar statement.

SuggestedRemedy

Please add a sentence or two stating that the OAM Client does the remaining parsing of all OAMPDUs (including TLVs, Variable Descriptors, and Variable Container) and that all rules about processing are RECOMENDATIONS.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.3** *P* **186** *L* **4** # **216**

Lynskey, Eric UNH-IOL

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

In figure 57-6, the OAM multiplexer will not allow MAC client frames to be transmitted when local_link_status = FAIL. The OAM process will only allow OAMPDUs to be transmitted when a unidirectional link exists. Subclause 66.2.2, along with Clauses 64 and 65, states that unidirectional traffic is necessary for an EPON to operate. It would seem that although MAC Control traffic could be passed by the OLT, that MAC Client traffic would not make it through the OAM sublayer, thus causing problems on the EPON. A modification to the local_link_status variable is necessary to allow traffic to flow on an EPON when a logical link exists, even though the PHY may not have a physical link. I highly recommend discussion with the P2MP sub task force to make sure this is the only part of OAM that needs to be changed.

SuggestedRemedy

Modify the definition of local_link_status to: A parameter of the OAM_CTL.request service primitive, as defined in 57.2.5.3. When a multi-popint MAC control sublayer is not present, this indicates the status of the established link, as determined by the PHY. When a multi-point MAC control sublayer is present, this indicates the status of the established logical link, as determined by the multi-point MAC control sublayer.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.3** *P* **186** *L* **5** # **127**

Braga, Aldobino UNH-IOL

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

Issue with Figure 57-6.

What happens when the OAM client tries to send an OAMPDU when it has already sent 10 and the pdu_timer expires?

Since pdu_cnt=0, it isn't a valid_pdu_req. Also since there was a request pdu_req=NORMAL.

Don't you get stuck in the WAIT_FOR_TX state?

SuggestedRemedy

Recommend changing the pdu_timer_done * pdu_req=NONE transition to:
pdu_timer_done * (pdu_req=NONE + pdu_req=NORMAL)

Since pdu_cnt!=10 the transition will go back to the RESET state

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.3** *P* **186** *L* **5** # **128**

Braga, Aldobino UNH-IOL

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

Issue with Figure 57-6.

What happens when the OAM client tries to send an OAMPDU when in the LINK FAULT state of the OAM Discovery process and the pdu_timer expires?

Since local_pdu=LF_INFO and pdu_req=CRITICAL, this isn't a valid_pdu_req.

Don't you get stuck in the WAIT_FOR_TX state?

SuggestedRemedy

Recommend changing the pdu_timer_done * pdu_req=NONE transistion to:
pdu_timer_done * (pdu_req=NONE + pdu_req=CRITICAL)

Now if a OAMPDU has already been sent that second it will go back to the RESET state. If an OAMPUD hasn't already been sent then it will send an Info OAMPDU with the Critical flag (because local_pdu=LF_INFO).

If this is accepted along with the previous comment then the transition would look like the following:
pdu_timer_done * (pdu_req=NONE + pdu_req=NORMAL + pdu_req=CRITICAL)

this reduces to:
pdu_timer_done

(coincidently there is no longer a use for pdu_req=NONE)

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.3** *P* **186** *L* **5** # **133**
Braga, Aldobino UNH-IOL

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

Figure 57-6

It isn't clear to me how the multiplexer guarantees that the OAM Discovery process is kept alive.

I don't see how the TX_FRAME state generates and OAMPDU out. I believe its only function is to simply sends the frame down to the MAC (MAC:MADR). Nothing implies it is in charge of creating an OAMPDU.

I see no generation of an OAMI.request(...) in the leftmost transitions.

SuggestedRemedy

Within Figure 57-6 add the generation of the OAMI.request(DA, SA, oam_service_data_unit, frame_check_sequence)

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.3** *P* **186** *L* **5** # **134**
Braga, Aldobino UNH-IOL

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

Why is the multiplexer in charge of keeping the OAM Discovery link alive?

OAM Discovery is done in the control block.
Why isn't the mechanism for keeping it alive within the same subsystem?

The control block is also in charge of interfacing with the OAM Client. The OAM Client is where the majority of OAMPDUs originate, so when an OAMPDU needs to be generated automatically, why isn't it the responsability of the system that interacts with the OAM client to generate this OAMPDU? >From a design perspective it doesn't make sense for the multiplexer to do it.

The multiplexer should do what Figure 57-3 alludes to; take three request signals and multiplex them.

SuggestedRemedy

Split Figure 57-6 into two Figures. One for the multiplexer and one for the control block.

Please consider braga_1_0104.pdf as a possible solution

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.3.1.2** *P* **187** *L* **18** # **592**
Brown, Benjamin Independent

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

Missing value

SuggestedRemedy

Replace "INFO or ANY" with "LF_INFO, INFO or ANY" to match the definition of "valid_pdu_req" from page 182. If this isn't correct then the definition of "valid_pdu_req" needs to change from "local_pdu!=RX_INFO"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.3.2** *P* **188** *L* **15** # **118**
Braga, Aldobino UNH-IOL

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

"The transmission of an OAMPDU shall not affect the transmission a frame that has been submitted to the subordinate sublayer"

Missing the word "of" after the second transmission.

SuggestedRemedy

Change to read:
"…affect the transmission of a frame …"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.3.3.2** *P* **188** *L* **16** # **593**
Brown, Benjamin Independent

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

missing word

SuggestedRemedy

Replace "transmission a frame" with "transmission of a frame"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3** *P* **191** *L* **1** # **774**

Booth, Brad Intel

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

Table 57-3 is in the middle of the paragraph.

SuggestedRemedy

Change table anchor properties.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3** *P* **191** *L* **1** # **137**

Braga, Aldobino UNH-IOL

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

Since the OAM client parses OAMPDUs, I am confused as to whether this document is allowed to define the operation of certain fields within the OAMPDUs? If this document is allowed to define these fields, why do they seem to be inconsistent?

Table 57-3 - Flags field
Shall on transmission of reserved, should on reception of reserved
Discovering bits get shall statements in both directions

Table 57-4 - OAMPDU codes
No shalls just a recommendation to pass to OAM client, no mention of transmission

Table 57-5 - OAM Remote Loopback commands
Table 57-6 - Information TLV Types
No shalls just a recommendation to ignore on reception, no mention of transmission

Table 57-7 - State field
Shall on transmission of reserved, should on reception of reserved
Parser Action bits get shall statements in both directions

Table 57-8 - OAM Configuration
Table 57-9 - OAMPDU Configuration
Shall on transmission of reserved, should on reception of reserved

Table 57-12
Table 57-15
No shalls just a recommendation to ignore on reception, no mention of transmission

SuggestedRemedy

If this document cannot define the operation of these fields:
Fix the text such that there are no "shall statements" in either direction (TX and RX)

If this document can define the operations of these fields:
Fix the text such that the transmission is governed (shall/shall not) and the reception is recommended (should/should not). I think this is consistent with other TX/RX rules within the document.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3** *P* **191** *L* **12** # **775**

Booth, Brad — Intel

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

In Table 57-3, bits 6:5 and 4:3 descriptions don't follow a logical order.

SuggestedRemedy

Change order to be 0x0, 0x1, 0x2 & 0x3.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3** *P* **192** *L* **14** # **107**

Braga, Aldobino — UNH-IOL

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

Table 57-4: Two instances
"Reserved for future use - passed to OAM client"

Text on pages 185 and 191 already states this. If it is felt that reiteration of this is important please add statement indicating it shall not be transmitted.

SuggestedRemedy

Change both instances of "Reserved for future use - passed to OAM client" to either:

a) Reserved
b) Reserved - shall be passed to OAM client on reception and shall not be transmitted

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3.1** *P* **192** *L* **1** # **735**

James, David — JGG

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

The need for uniqueness of an OUI based identifier is best met by utilizing the EUI-48 or EUI-64 definitions, so that each organization doesn't have to understand the context when assigning such numbers to the requesting division.

SuggestedRemedy

Revise the OUI and Vendor Specific Information field to be either 48-bit or 64-bit fields, defined to be an EUI-48 or EUI-64.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3.1** *P* **192** *L* **1** # **736**

James, David — JGG

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

In many cases (often 802 related), the ordering of bits in the OUI is rather ambiguous. As such, the IEEE/RAC requires that standards clearly define the mappings of an example hex field, as is done in the online tutorials.

SuggestedRemedy

Show a clear example of how the OUI is mapped, using an hex example.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3.1** *P* **192** *L* **37** # **110**

Braga, Aldobino — UNH-IOL

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

OUI is used here for the first time. Should it be spelled out first? It is also seen in Clause 57.4.3.1 196 Line 14 before its spelled out.

SuggestedRemedy

Replace OUI with Organizationally Unique Identifier (OUI)

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3.1** *P* **192** *L* **39** # **776**

Booth, Brad — Intel

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

In Figure 57-9, figure and header are crowded.

SuggestedRemedy

Put more space between figure and figure header.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3.1** *P* **192** *L* **46** # **594**

Brown, Benjamin Independent

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

Other information TLVs

SuggestedRemedy

My interpretation of reading this last paragraph is that the "other" Information TLVs can only exist when the Information OAMPDU data field also contains the "Remote" Information TLV. Is this true? If not, please reword

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3.1** *P* **196** *L* **16** # **737**

James, David JGG

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

The need for uniqueness of an OUI based identifier is best met by utilizing the EUI-48 or EUI-64 definitions, so that each organization doesn't have to understand the context when assigning such numbers to the requesting division.

SuggestedRemedy

Revise the OUI and following data, so that this starts with an EUI-48 or EUI-64 value. Otherwise, multi-division organizations will have to define their own subparsing conventions, which is prone to error (some have already happened with Japanese vendors and parts of 1394/AVC that do this type of thing).

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3.1** *P* **196** *L* **24** # **738**

James, David JGG

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

The IEEE/RAC defines OUIs as HEX values. Given the confusion between leftmost being first, or the first transmitted bit being first, any descriptions in terms of bits and/or bit ordering should be removed.

SuggestedRemedy

Eliminate the binary text: the hex values are sufficient.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3.1** *P* **197** *L* **40** # **739**

James, David JGG

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

Given the inconsistencies/ambiguities of the OUI definitions within 802.3, any definition should be self-contained, not cross referencing something else.

SuggestedRemedy

Eliminate the OUI cross reference to:

found in IEEE Std 802-2001 Clause 9.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3.1** *P* **199** *L* **23** # **740**

James, David JGG

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

In many cases (often 802 related), the ordering of bits in the OUI is rather ambiguous. As such, the IEEE/RAC requires that standards clearly define the mappings of an example hex field, as is done in the online tutorials.

SuggestedRemedy

Show a figure with the classical HEX-value example.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3.1** *P* **200** *L* **9** # **741**

James, David JGG

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

In many cases (often 802 related), the ordering of bits in the OUI is rather ambiguous. As such, the IEEE/RAC requires that standards clearly define the mappings of an example hex field, as is done in the online tutorials.

SuggestedRemedy

Show a figure with the classical HEX-value example.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.4.3.5** *P* **195** *L* **31** # **136**
Braga, Aldobino UNH-IOL

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

Table 57-5: Two instances
Table 57-6: Two instances
Table 57-12: Two instances
Table 57-15: Two instances
"Reserved for future use - ignored on reception"

Since we define the OAM sublayer and not the OAM client, shouldn't these say, "Reserved - passed to the OAM client"?

SuggestedRemedy

Change both instances of "Reserved for future use - ignored on reception" to either:

Reserved
Reserved - passed to the OAM client

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.1** *P* **196** *L* **36** # **132**
Braga, Aldobino UNH-IOL

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

I don't think it is clear that the OAM Client does the parsing of the TLVs.

SuggestedRemedy

Please make it clear that the OAM Client does the parsing of all TLVs.

and

Change "recommendations" to "RECOMMENDATIONS" as it is seen in 57.5.2.11.1 page 177 line 47

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.2** *P* **196** *L* **51** # **596**
Brown, Benjamin Independent

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

Table 57-6 does not contain the defined TLVs. It contains the defined TLV types.

SuggestedRemedy

Replace "Information TLVs" with "Information TLV type values"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.2** *P* **197** *L* **18** # **597**
Brown, Benjamin Independent

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

wrong word

SuggestedRemedy

Replace "contain" with "describe"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.2.2** *P* **197** *L* **47** # **119**
Braga, Aldobino UNH-IOL

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

Wouldn't it be more concise to just say the Remote Information TLV is an exact copy of the remote DTE's Local Information TLV, rather than going through what each of the fields represent for a second time and then saying, "The value of this field shall be copied from the value of the field in the last received Local Information TLV received from this peer?"

SuggestedRemedy

Change 57.5.2.2 to say something similar to the following:

The Remote Information TLV shall be a copy of the last received Local Information TLV from the remote OAM peer.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.2.2** *P* **197** *L* **53** # **598**
Brown, Benjamin Independent

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

too many "received"s

SuggestedRemedy

Replace "received Local Information TLV received" with "Local Information TLV received"

The same comment applies to:
page 198, line 51
page 199, line 41
page 199, line 44
page 199, line 47
page 199, line 50
page 199, line 53

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.2.2** *P* **198** *L* **1** # **777**

Booth, Brad — Intel

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

Tables 57-7, 57-8, 57-9, 57-10 and 57-11 are in the middle of list.

SuggestedRemedy

Change table properties or move anchors to put after list.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.2.2** *P* **198** *L* **20** # **108**

Braga, Aldobino — UNH-IOL

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

Why are there two reserved fields for the following tables:
57-4,57-5, 57-6, 57-7, 57-12, 57-15?

and only on reserved field for the following tables:
57-3, 57-8, 57-9

SuggestedRemedy

Combine the two reserved fields in all tables into one and assume future editors of the standard will be intelligent enough to leave an expansion placeholder.

Or

Explicitly call out which of the two reserved fields in each table is to be used for the expansion placeholder and add an expansion placeholder for Tables 57-3, 57-8 and 57-9.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.2.2** *P* **198** *L* **6** # **109**

Braga, Aldobino — UNH-IOL

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

Are reserved bits in the Remote Information TLV to be ignored and not transmitted?

It seems that if a remote OAM device sends an Information TLV making use of the reserved bits in the State, OAM, and OAMPDU configuration fields the local device's Remote Information TLV should accurately reflect what its partner sent, and therefore transmit values in the reserved bits.

SuggestedRemedy

Change the Reserved Descriptions in the State, OAM Configuration, and OAMPDU Configuration fields as follows:

In Local Information TLVs, reserved bits shall be set to zero when sending an OAMPDU, and should be ignored on reception for compatibility with future use of reserved bits.

And in the State field for parser action:
11 = Reserved. In Local Information TLVs this value shall not be sent. If the value 11 is received, it shall be ignored and not change the last received value.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.2.3** *P* **200** *L* **5** # **600**

Brown, Benjamin — Independent

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

wrong reference

SuggestedRemedy

Replace "Table 57-12" with "Table 57-6"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.2.3** *P* **200** *L* **5** # **129**

Braga, Aldobino — UNH-IOL

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

Table 57-12 cross reference should be Table 57-6.

SuggestedRemedy

Replacec Table 57-12 with Table 57-6 and make the cross reference point to the correct location.

Proposed Response *Response Status* **O**

Cl **57** SC **57.5.3** P **200** L **18** # **601**
Brown, Benjamin Independent

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

Table 57-12 does not contain the defined TLVs. It contains the defined TLV types.

SuggestedRemedy

Replace "Link Event TLVs" with "Link Event TLV type values"

Proposed Response *Response Status* **O**

Cl **57** SC **57.5.3** P **200** L **41** # **602**
Brown, Benjamin Independent

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

wrong word

SuggestedRemedy

Replace "contain" with "describe"

Proposed Response *Response Status* **O**

Cl **57** SC **57.5.3.1** P **201** L **11** # **603**
Brown, Benjamin Independent

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

change wording

SuggestedRemedy

Replace "indicates the number of errored symbols in the period that is required" with "indicates a limit that the number of errored symbols in the period is required"

Proposed Response *Response Status* **O**

Cl **57** SC **57.5.3.1** P **201** L **22** # **28**
Squire, Matt Hatteras Networks

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

This comment is against the general "error running total" field. For all of these fields, we have the sentence "This field does not include X errors during periods in which the number of X errors did not exceed the threshold." That seems to be a pain. Now, we have to keep (a) interval totals, (b) running totals (for MIBs), and (c) running totals that caused event indications. I'd like to see us kill the latter.

SuggestedRemedy

Make the running totals include intervals where the threshold wasnt exceeded.

Proposed Response *Response Status* **O**

Cl **57** SC **57.5.3.1** P **201** L **23** # **604**
Brown, Benjamin Independent

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

wrong word

SuggestedRemedy

replace "errors during periods" with "errors in periods"

Proposed Response *Response Status* **O**

Cl **57** SC **57.5.3.2** P **201** L **37** # **605**
Brown, Benjamin Independent

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

wrong word

SuggestedRemedy

Replace "sublayer and communicated" with "sublayer as communicated"

Proposed Response *Response Status* **O**

Cl **57** SC **57.5.3.2** P **201** L **49** # **606**
Brown, Benjamin Independent

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

missing word

SuggestedRemedy

replace "duration of period" with "duration of the period"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.3.2** *P* **202** *L* **10** # **608**
Brown, Benjamin Independent

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

SuggestedRemedy
replace "frame in the" with "frames in the"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.3.2** *P* **202** *L* **14** # **609**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
wrong word

SuggestedRemedy
Replace "frames during periods" with "frames in periods"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.3.2** *P* **202** *L* **2** # **607**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
change wording

SuggestedRemedy
Replace "indicates the number of detected errored frames in the period that is required" with "indicates a limit that the number of detected errored frames in the period is required"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.3.3** *P* **202** *L* **24** # **610**
Brown, Benjamin Independent

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

SuggestedRemedy
replace "frame detected" with "frames detected"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.3.3** *P* **202** *L* **25** # **27**
Squire, Matt Hatteras Networks

Comment Type **T** *Comment Status* **D**
The second sentence ("The period is specified by the number of minFrameSize frames that can be received in a time interval on the underlying physical layer") doesn't seem right. I thought this was a measurement of the number of fraction of errored frames, period, regardless of link rate or frame size. So, for example, a value of 1,000,000 here and 10 in the threshold would generate an event if >=10 of 1,000,000 frames were in error.

SuggestedRemedy
Change 2nd sentence to "The period is specified by a number of received frames. This event is generated if the errored frame count is greater or equal to the specified threshold for that period, for example if greater than or equal to 10 of 1,000,000 frames resulted in errored frames."

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.3.3** *P* **202** *L* **28** # **611**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
wrong word

SuggestedRemedy
replace "sublayer and communicated" with "sublayer as communicated"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.3.3** *P* **202** *L* **50** # **612**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
change wording

SuggestedRemedy
Replace "indicates the number of errored frames in the period that is required" with "indicates a limit that the number of errored frames in the period is required"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.3.3** *P* **203** *L* **54** # **616**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
wrong word

SuggestedRemedy
Replace "seconds during periods" with "seconds in periods"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.3.3** *P* **203** *L* **8** # **613**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
wrong word

SuggestedRemedy
Replace "errors during periods" with "errors in periods"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.3.4** *P* **203** *L* **23** # **614**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
wrong word

SuggestedRemedy
Replace "sublayer and commumicated" with "sublayer as communicated"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.5.3.4** *P* **203** *L* **42** # **615**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
change wording

SuggestedRemedy
Replace "indicates the number of errored frame seconds in the period that is required" with "indicates a limit that the number of errored frame seconds in the period is required"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.6** *P* **204** *L* **32** # **111**
Braga, Aldobino UNH-IOL

Comment Type **T** *Comment Status* **D**
"In returning requested variables, an OAM client generates at least one and perhaps additional Variable Response OAMPDUs per received Variable Request OAMPDU."

HOW?
Is it that a single Variable Container can be split up between one or more Variable Response OAMPDUs (assuming the Variable be retrieved is a package or an object)
Ex.
VarReq1{A, B, C}
VarRes1{A, B}, VarRes2{B, C}

Or
Is it that the set of Variable Containers can be split up between one or more Variable Response OAMPDUs.
Ex.
VarReq1{A, B, C}
VarRes1{A, B}, VarRes2{C}

SuggestedRemedy
I believe a Variable Container regardless of whether it is a package or an object, cannot be split up between Variable Response OAMPDUs. (Hense the "Length of requested Variable Container(s) exceeded OAMPDU data field." error)

Clarify how this single Request to multiple Responses mechanism works.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.6** *P* **204** *L* **32** # **617**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
"perhaps additional Variable Response OAMPDUs"

SuggestedRemedy
Is there any detail on this? I don't see it discussed anywhere else in the clause. Also, error 0x04 from Table 57-15 suggests that this isn't done.

Replace "at least one and perhaps additional .. OAMPDUs" with "one .. OAMPDU"

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.6.2** *P* **205** *L* **3** # **116**

Braga, Aldobino UNH-IOL

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

Please provide a better description of how Variable Containers work.

Its not clear to me how they work from simply reading the text. I had to go back to draft version 1.3 to understand how these things are formated and even then I still don't fully understand how they work.

Table 57-14 doesn't convey the operation of packages or objects well. When operating with a package, there is one Branch, one Leaf, but then for each attribute a width & value pair (unless there is an error). This is still considered a single Variable Container. I don't think that's intuitive from the table.

I don't really know how objects work; I haven't seen an example of one. Are they similar to packages?

SuggestedRemedy

Please
a) Clear this up with a paragraph or two
b) Create an informative annex with examples of attributes, packages, objects, and the previous three each with errors.

I'd settle for just the annex but both would be better.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.6.2** *P* **205** *L* **30** # **285**

Gerhardt, Floyd Cisco Systems, Inc.

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

Table 57-15 Variable Error Indications seems to need some introductory text before the table itself (after Table 57-14).

SuggestedRemedy

I will leave it to our esteemed editor for final text, but perhaps something along the lines of:

If a DTE is unable to retrieve one or more variables the Variable Container is used to return the appropriate Variable Error for the particular attribute(s). The Variable Error Indications are defined in Table 57–15.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.6.2** *P* **205** *L* **38** # **113**

Braga, Aldobino UNH-IOL

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

0x02 | Requested attribute was unable to be returned as the requested variable is not supported by the local DTE.

This particular error is confusing. When "requested variable" is mentioned, is the subject still the attribute or perhaps a package that contains said attribute?

SuggestedRemedy

Please change error to read:

0x02 | Requested attribute was unable to be returned because it is not supported by the local DTE.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.6.2** *P* **205** *L* **42** # **112**

Braga, Aldobino UNH-IOL

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

0x04 | Length of requested Variable Container(s) exceeded OAMPDU data field.

This particular error seems generic, as it is equally appropriate for attributes, packages, and objects. It should be removed from the center of error codes dealing specifically with attributes.

SuggestedRemedy

Move:

0x04 | Length of requested Variable Container(s) exceeded OAMPDU data field. Such that it is error code 0x00 or 0x01 or 0xFF

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.6.2** *P* **205** *L* **48** # **114**
Braga, Aldobino UNH-IOL

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

0x07 | Requested object was unable to be returned due to an undetermined error.
0x08 | Requested package was unable to be returned due to an undetermined error.

These don't seem to be enough errors codes to fully understand what might be happening at the remote device. All error codes that an attribute may report that makes sense for a package or object should also be reported.

SuggestedRemedy

Please change Table 57-15 to read:
...
0x07 | Requested object was unable to be returned due to an undetermined error.
0x08| Requested object was unable to be returned because it is not supported by the local DTE.
0x09 | Requested object may have been corrupted due to reset.
0x0A | Requested object unable to be returned due to a hardware failure.
0x0B | Requested package was unable to be returned due to an undetermined error.
0x0C | Requested package was unable to be returned because it is not supported by the local DTE.
0x0D | Requested package may have been corrupted due to reset.
0x0E | Requested package unable to be returned due to a hardware failure.
0x0F-7F | Reserved

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.6.4** *P* **206** *L* **23** # **117**
Braga, Aldobino UNH-IOL

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

Is a variable branch/leaf example table necessary?

This table alone doesn't help me understand how Variable Descriptors/Containers work. Examples of the OAMPDUs with multiple Variable Descriptors/Containers in addition to this table would be better.

SuggestedRemedy

Please either:

a) remove table 57-16
b) Add examples of OAMPDUs with Variable Descriptors/Containers to help clarify. Possibly in an Annex? The ones in draft 1.3 are a good start but more examples would be nice. Examples of objects would also be beneficial.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.7.3.1** *P* **208** *L* **42** # **120**
Braga, Aldobino UNH-IOL

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

In clause 57.2.9 this is the following shall statement:
"When OAM is enabled, a DTE capable of both Active and Passive mode shall select either Active or Passive."

There is no PICS entry for this shall statement

SuggestedRemedy

Add PICS entry for the mentioned statement.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.7.3.3** *P* **210** *L* **28** # **123**
Braga, Aldobino UNH-IOL

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

PICS entry PDU9 doesn't accurately reflect the shall statement in the document located ate 57.4.3.2

The value/comment should state that the sequence number is the first two bytes.

SuggestedRemedy

Change the value/comments section to read:The first two bytes of the Data field contain a Sequence Number encoded as an unsigned 16-bit integer

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.7.3.3** *P* **210** *L* **53** # **124**
Braga, Aldobino UNH-IOL

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

Missing PICS: referencing 57.4.3.6

The statement, "The first three octets of the Organization Specific OAMPDU Data field shall contain the Organizationally Unique Identifier (OUI)," does not have a PICS entry

SuggestedRemedy

Add PICS entry PDU18 that describes the mentioned statement.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.7.3.5** *P* **212** *L* **13** # **126**
Braga, Aldobino UNH-IOL

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

The value/comment section mentions a "Version" field. I believe its called the "OAM Version" field.

SuggestedRemedy

Please change Version to "OAM Version" field.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.7.3.6** *P* **213** *L* **1** # **778**
Booth, Brad Intel

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

Table will fit on page 212.

SuggestedRemedy

Change heading properties to permit heading and table to fit on page 212.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.7.4** *P* **214** *L* **38** # **125**
Braga, Aldobino UNH-IOL

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

Missing PICS: referencing 57.5.3.5

The statement, "This three-octet field shall contain a 24-bit Organizationally Unique Identifier," does not have a PICS entry.

SuggestedRemedy

Add PICS entry ET6 that describes the mentioned statement.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.7.6** *P* **215** *L* **35** # **122**
Braga, Aldobino UNH-IOL

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

Missing PICS
Table 57-3 also has another "reserved" related shall statement.

"Reserved. This value shall not be sent if the value 0x3 is received, it shall be ignored and not change the last received value."

SuggestedRemedy

Add PICS entry for the mentioned statement.

Proposed Response *Response Status* **O**

Cl **57** *SC* **57-11** *P* **199** *L* **35** # **26**
Squire, Matt Hatteras Networks

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

I received 2 emails asking if the vendor specific info should be different for different software images. Should probably clarify this in the text.

SuggestedRemedy

Change "models/versions" to "product models and hardware revisions".

Proposed Response *Response Status* **O**

Cl **57** *SC* **Figure 57-14** *P* **196** *L* **12** # **595**
Brown, Benjamin Independent

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

Bit ordering is wrong

SuggestedRemedy

You're example appears to come from Figure 8 in Clause 9 of 802-2001. However, this example clearly shows that the LSB/MSB labels in the upper half of their figure then a table representation in the lower half. There is a clear mapping from LSB to bit ordering: the LSB is on the right.

In Ethernet, LSB maps to bit 0. In 57.4.1 b), "Within an octet, bits are shown with bit 0 to the left and bit 7 to the right." Therefore, your representation, though it maps to 802-2001's Figure 9, doesn't follow your own description of bit 0 on the left. Your figure shows bit 0 on the right. Swap the bit order of these octets of change the description in 57.4.1 b).

Proposed Response *Response Status* **O**

Cl **57** *SC* **Figure 57-5** *P* **184** *L* **7** # **23**
Squire, Matt Hatteras Networks

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

The state diagram does not reflect the fact that the local_link_status must be OK for the transitions to active_send_local and PASSIVE_WAIT.

SuggestedRemedy

Change the transitions from LINK_FAULT to be and AND with local_link_status=OK

Proposed Response *Response Status* **O**

Cl **57** *SC* **Figure 57-6** *P* **186** *L* **15** # **591**
Brown, Benjamin Independent

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

Unnecessary transition

SuggestedRemedy

The transition from WAIT_FOR_TX back to the same state is unnecessary. It isn't like there's some event that occurs upon entry that needs to keep happening. Remove this transition.

In addition, remove 57.3.3.1.4, which describes this unnecessary transition

Proposed Response *Response Status* **O**

Cl **57** *SC* **Figure 57-6** *P* **186** *L* **26** # **819**
Tom Mathey Independent

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

The OAM layer is optional in EPONs. When implemented in an EPON, then the uni-dir bit is set to TRUE, which then forces the OAM layer to discard all MAC frames and only pass OAM frames. See exit from state CHECK_PHY+LINK with terms local_unidirectional=TRUE.

SuggestedRemedy

Discuss how to add another bit which specifically passes MAC frames.

Proposed Response *Response Status* **O**

Cl **57** *SC* **table 57-9** *P* **199** *L* **12** # **12**
Squire, Matt Hatteras Networks

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

We should make it clear that (a) stations use the minimum of the local/remote max OAMPDU sizes, and (b) they don't have to change their configuration value in PDUs after its negotiated.

SuggestedRemedy

Add: "The OAMPDUs transmitted by a DTE are limited by both the local DTE Maximum OAMPDU size and the remote DTE's Maximum OAMPDU size as indicated in received Information OAMPDUs. A DTE is not required to change the value transmitted in this field after negotiation to an agreed size as each end will dynamically determine the correct maximum OAMPDU size to use. "

Proposed Response *Response Status* **O**

Cl **57** *SC* **Table 57-9** *P* **199** *L* **16** # **599**
Brown, Benjamin Independent

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

missing comma

SuggestedRemedy

Replace "maxUntaggedFrameSize which is" with "maxUntaggedFrameSize, which is"

Proposed Response *Response Status* **O**

Cl **58** *SC* **56.1.2.2** *P* **160** *L* **15** # **336**
Dawe, Piers Agilent

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

56.1.2.2 is out of place: it's about 100BASE-X/1000BASE-X RS (mainly p2p) but it falls inside '56.1.2 Summary of P2MP sublayers'. See another comment about missing equivalent information for 2BASE-TL and 10PASS-TS.

SuggestedRemedy

Move it to become a paragraph at/near the end of 56.1.1. Could extend the first sentence: something like:
'The Clause 22 RS and MII, and Clause 35 RS and GMII, are both employed for the same purpose in EFM, that being the interconnection between the MAC sublayer and the 100BASE-X PHY sublayers, and the MAC and the 1000BASE-X PHY, respectively.'
Promote the present 56.1.2.2.1 to 56.1.2.2.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.1** *P* **218** *L* **4** # **779**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Reach doesn't have to be long.

SuggestedRemedy
Remove the word "long".

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.1** *P* **218** *L* **40** # **781**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
The word "may" implies "may not".

SuggestedRemedy
Change last sentence to read:
Implementations may be declared as compliant over one or both complete temperature ranges.

Also applies to 59.1, page 256, line 44; and 60.1, page 286, line 24.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.1** *P* **218** *L* **9** # **780**
Booth, Brad Intel

Comment Type **TR** *Comment Status* **D**
Sentence is very disjointed and needs better clarification.

SuggestedRemedy
Change second sentence of paragraph to read:
A 100BASE-LX10 and 100BASE-BX10 PHY (physical layer) device is a combination of a 100BASE-X PCS and PMA with the respective PMD. If the optional OAM is being used, the 100BASE-X PCS and PMA in Clause 66 shall be integrated; otherwise, the Clause 24 100BASE-X PCS and PMA shall be integrated. The management functions may be accessible through the optional Management Interface.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.1.3** *P* **219** *L* **33** # **782**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Do not use the term "Subclause".

SuggestedRemedy
Remove the word "Subclause" in this subclause.

Also applies to 59.1.3 and 60.1.3.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.1.4** *P* **219** *L* **54** # **783**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
Keep the line with the corresponding list.

SuggestedRemedy
As per comment.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.10** *P* **248** *L* **53** # **316**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
I think 'ITU' should be 'ITU-T' to distinguish it from ITU-R.

SuggestedRemedy
Change 'ITU' to 'ITU-T' here and in second line of 58.10.2.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.11** *P* **251** *L* # **1**
Murphy, Tom Infineon

Comment Type **T** *Comment Status* **D**
There are deviations in the PICS of all three optics clauses.

SuggestedRemedy
Fix the PICS based on suggestion in a file which will be provided by the commenter

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.11.3.4** *P* **253** *L* **39** # **357**
Dawe, Piers Agilent

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

LX10 should be

SuggestedRemedy

BX10

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.11.3.5** *P* **254** *L* **12** # **400**
Dawe, Piers Agilent

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

We can simplify this value/comment in line with the others.

SuggestedRemedy

Change 'Performed in accordance with the requirements of' to 'According to'.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.2** *P* **220** *L* **47** # **325**
Dawe, Piers Agilent

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

These clause 45 registers are for 10G or EFM electrical PMA/PMDs, and do not apply to 100M PMDs. We haven't heard a demand that the 100M register set needs enhancement for 100BASE-LX10 or 100BASE-BX10. Some registers for the PHY as a whole (reset, remote fault, link status) already exist in clause 22. If we wanted a register to distinguish U from D, we could use 10.14, MASTER-SLAVE configuration resolution, but would it be useful?

SuggestedRemedy

Unless these 10G registers become applicable to 100M, delete subclause 58.2.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.2** *P* **220** *L* **49** # **442**
Law, David 3Com

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

The 100BASE-LX10 and 100BASE-BX10 PHYs are not supported by the Clause 45 register set, only the Clause 22 register set, so the Clause 45 register bits specified here will not be present.

If the functions described here are required they will need to be moved the Clause 22 extension register specified in subclause 45.2.8. One function that will need special consideration however is the Reset function (PMD_reset) and its interaction with the existing Clause 22 Reset bit (0.15).

SuggestedRemedy

Move the specified functions to registers bits within the Clause 22 extension register. Update subclause 45.2.8 as required.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.2** *P* **220** *L* **54** # **784**
Booth, Brad Intel

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

Missing period at end of note.

SuggestedRemedy

Add period.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.2.1.1** *P* **229** *L* **18** # **288**
Paul Fitzgerald Circadiant Systems

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

Use of the Optical frame based test pattern of 58.8.1.1 will lead to a broadcast storm and take down the Ethernet network. This pattern is too dangerous to imbed into low-cost test equipment that could be used in the field. It is a recipe for malicious hacking.

SuggestedRemedy

Use valid 100BASE-X signal.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.3.4** *P* **222** *L* **48** # **785**

Booth, Brad — Intel

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

Keep Table 58-4 on one page.

SuggestedRemedy

Change table properties.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.7** *P* **228** *L* **13** # **346**

Dawe, Piers — Agilent

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

The jitter sections need to be tied together and have their terminology aligned.

SuggestedRemedy

In table 58-10, insert '(W)' after 'High probability jitter'. W in italics. Make the table full width.
Change 'DJ' to 'W' twice.
Add extra words 'NOTE - As an example, TJ10....'.
Add sentence saying that 'W is similar but not necessarily identical to deterministic jitter (DJ)'.
Refer to 58.8.12, note that there are other jitter measurement methods.
Add sentence 'Jitter at TP2 or TP3 is defined with a receiver of the same bandwidth as specified for the transmitted eye.'

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.8.1** *P* **230** *L* **28** # **320**

Dawe, Piers — Agilent

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

The test patterns have at least two flaws:
The example patterns do not make valid frames; the length/type is 05FF hex or 1535, while the maximum allowed length (and the length in these tables) is 1500; and:
It is very hard to understand how many idles there are at the start of table 58-13. I think the intention is that the table should contain as many octets as table 58-12, and each frame should be separated from its neighbour by 14 octets, two more than the minimum 12.
Thanks to Tom Dineen for pointing out these issues.

SuggestedRemedy

Make necessary changes to length/type. Change octet immediately following length/type as necessary to make the polarity flipping work with recalculated FCSs. Explain and/or change third row of table 58-13. Change all eight FCSs and make any other consequent changes. Delete the following note at p229 line 37: 'NOTE - Not all field values constitute valid values for correct network operation.'

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.8.11.3** *P* **245** *L* **51** # **290**

Paul Fitzgerald — Circadiant Systems

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

A false BER value can be obtained if the user does not wait long enough. There could be one or more frequency steps that has a problem.

SuggestedRemedy

Add words that say to first locate the jitter point that contributes to the worst BER, then make measurements there.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.8.12** *P* **246** *L* **47** # **399**

Dawe, Piers — Agilent

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

It will help the reader to be reminded (told) that the receiver has a controlled bandwidth.

SuggestedRemedy

Before last sentence on page, insert: 'Note that the receiver includes a defined filter function.'

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.8.2** *P* **232** *L* **3** # **347**
Dawe, Piers Agilent

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

Now we have some good boilerplate we should use it throughout the test procedures. We can let TIA decide what the instrument is called.

SuggestedRemedy

'The wavelength and spectral width (RMS) shall meet specifications according to ANSI/EIA/TIA-455-127, under ...'
Similarly in clauses 59 and 60.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.8.4** *P* **232** *L* **17** # **439**
Law, David 3Com

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

Please clarify under what conditions the Extinction ratio has to be measured by including the conditions with the scope of the shall statement.

I have submitted a similar comment for 59.9.4 and 60.8.4.

SuggestedRemedy

Suggest this subclause be changed to read:

Extinction ratio shall be measured using the methods specified in ANSI/TIA/EIA-526-4A with the port transmitting the 4B/5B NRZI encoded idle (1010....) pattern that may be interspersed with a maximum of 10 OAM packets a second and with minimal back reflections into the transmitter, lower than -20 dB. The extinction ratio is expected to be similar for other valid balanced NRZI encoded 4B/5B bit streams.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.8.7.3** *P* **235** *L* **13** # **333**
Dawe, Piers Agilent

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

Should specify the base of the logarithm here as elsewhere.

SuggestedRemedy

Insert subscript 10 after 'log'. Also in equation 58-13.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.8.8** *P* **236** *L* **53** # **330**
Dawe, Piers Agilent

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

Need to make the text more general to allow for use in other clauses.

SuggestedRemedy

Insert new material at beginning of sentence:
'For 100BASE-LX10 and 100BASE-BX10, the eye is measured ...'.
Add a new sentence and change 'this' to 'the':
'... there specified. Receiver responses for other PMD types are specified in the appropriate clause. The Bessel-Thomson receiver is not intended ...'.

Proposed Response *Response Status* **O**

Cl **58** *SC* **58.8.9.3** *P* **239** *L* **49** # **339**
Dawe, Piers Agilent

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

Here we need to explain that for 100BASE-xX10, S may have to be measured with a more benign pattern.

SuggestedRemedy

Add sentences:
For 100BASE-LX10 and 100BASE-BX10, TDP includes a pattern dependent penalty. As it may be inconvenient or impossible to obtain reference transmitters and receivers which are immune to this penalty, for these cases S may be measured with a benign pattern e.g. PRBS7.

Proposed Response *Response Status* **O**

Cl **58** *SC* **Figure 58-9** *P* **245** *L* **22** # **398**
Dawe, Piers Agilent

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

Figure is somewhat misleading.

SuggestedRemedy

A0 should go between the inner inflections of the next to lightest grey. What is now labelled A0 should be labelled 'OMA'. Other 'OMA' should stay.
Footnote them:
'The measure of OMA on the eye of the conformance test signal differs between 100BASE-X, 1000BASE-X and 10GBASE-R/W'.
Add another footnote, to AN, 'This is also OMA for 10GBASE-R/W.'

Proposed Response *Response Status* **O**

Cl **58** *SC* **Table 58-11** *P* **229** *L* **10** # **820**
Tom Mathey Independent

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

Text is
Idle (1010Š for 4B/5B NRZI)
Which implies that the idle pattern is a repeating "1010". However, the idle pattern is "10101" which would repeat as "10101_10101_10101".

SuggestedRemedy

Change text to 10101.

Proposed Response *Response Status* **O**

Cl **58** *SC* **Table 58-11** *P* **229** *L* **12** # **287**
Paul Fitzgerald Circadiant Systems

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

Use of the Optical frame based test pattern of 58.8.1.1 will lead to a broadcast storm and take down the Ethernet network. This pattern is too dangerous to imbed into low-cost test equipment that could be used in the field. It is a recipe for malicious hacking.

SuggestedRemedy

Substitute with Valid 100BASE-X signal.

Proposed Response *Response Status* **O**

Cl **58** *SC* **Table 58-5** *P* **224** *L* **16** # **289**
Paul Fitzgerald Circadiant Systems

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

The TDP test is not achieving widespread support.

SuggestedRemedy

Change to a Path Penalty Test with a minimum specified amount of dispersion in the test fiber.

Proposed Response *Response Status* **O**

Cl **58A** *SC* **58A** *P* **555** *L* **41** # **409**
Dawe, Piers Agilent

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

I would like to remove two 'conventional's because what's conventional is what each reader is used to, and may vary.

SuggestedRemedy

Delete 'conventional' here and on line 54

Proposed Response *Response Status* **O**

Cl **58A** *SC* **58A** *P* **556** *L* **14** # **410**
Dawe, Piers Agilent

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

Missing a comma

SuggestedRemedy

'When testing transmitter outputs, frames'

Proposed Response *Response Status* **O**

Cl **58A** *SC* **58A** *P* **556** *L* **19** # **411**
Dawe, Piers Agilent

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

A wrinkle

SuggestedRemedy

Add another sentence: In the case of 100BASE-X, the output bit stream may be inverted.

Proposed Response *Response Status* **O**

Cl **58A** *SC* **58A** *P* **556** *L* **19** # **436**
Law, David 3Com

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

The term BERT is defined as a Bit Error Ratio Tester (not Rate) in subclause 1.5 of IEEE Std 802.3ae-2003 upon which IEEE P802.3ah is built.

SuggestedRemedy

Either change the text 'Bit Error Rate Tester (BERT)' to read 'Bit Error Ratio Tester (BERT)' or alternatively just change the text to read '.. BERT ..' as definition for the term is already provided in subclause 1.5.

Proposed Response *Response Status* **O**

Cl **59** SC **59** P **255** L **1** # **236**
Lynskey, Eric UNH-IOL

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

Adjust tables in clause so they don't break across page boundaries.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **O**

Cl **59** SC **59.1** P **256** L **7** # **786**
Booth, Brad Intel

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

Second sentence of second paragraph is very disjointed.

SuggestedRemedy

Change second sentence of paragraph to read:
A 1000BASE-LX10 and 1000BASE-BX10 PHY (physical layer) device is a combination of a 1000BASE-X PCS and PMA with the respective PMD. If the optional OAM is being used, the 1000BASE-X PCS and PMA in Clause 66 shall be integrated; otherwise, the Clause 36 1000BASE-X PCS and PMA shall be integrated. The management functions may be accessible through the optional Management Interface.

Proposed Response *Response Status* **O**

Cl **59** SC **59.1** P **256** L **8** # **220**
Lynskey, Eric UNH-IOL

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

Need to add cross references to the clauses and subclauses listed here.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** SC **59.1.3** P **257** L **43** # **221**
Lynskey, Eric UNH-IOL

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

Need to add cross references to subclause 59.1.3.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** SC **59.11** P **276** L **34** # **243**
Lynskey, Eric UNH-IOL

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

References to table 59-18 and table 59-1 not linked. Also need reference to table 59-1 on line 47 of same page.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** SC **59.11** P **276** L **34** # **350**
Dawe, Piers Agilent

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

I think 'ITU' should be 'ITU-T' to distinguish it from ITU-R.

SuggestedRemedy

Change 'ITU' to 'ITU-T' here and in second line of 59.11.2.

Proposed Response *Response Status* **O**

Cl **59** SC **59.11.3** P **277** L **41** # **244**
Lynskey, Eric UNH-IOL

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

Two references to table 59-1 not linked.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.11.5** *P* **278** *L* **17** # **353**

Dawe, Piers — Agilent

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

The reference to IEC 61754-1 seems to apply to ferrule tolerances only when there are other tolerances and mechanical features that must be controlled. In particular, it is not widely enough known that a patchcord allowing SMF grade tolerances (which this is close to) allows the two ferrules in a connector to move relative to each other, at least at the equipment connector - this may be different from pure MMF connector practice. As I understand it, the reference addresses this.

SuggestedRemedy

Change the sentence to 'Patch cord connectors for the single-mode-to-multimode offset launch shall have single-mode tolerances, float and other mechanical requirements according to IEC 61754-1.'
Add:
'NOTE - It is important that connectors with the appropriate tolerances have some float or compliance, generally achieved by a yoke with two separate connector barrels, to allow both the ferrules to come properly into alignment with the two bores of the receptacle. IEC 61754-1 defines a connector interface standard that includes the dimensional requirements of the ferrules, plugs, receptacles, and active device receptacles. It includes both the simplex and duplex cases. Positional tolerances, maximum force limits, or requirements for float are given to ensure that the ferrule can be mated to another connector or an active device receptacle without damage to either.'

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.11.5** *P* **278** *L* **53** # **245**

Lynskey, Eric — UNH-IOL

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

Reference to table 59-19 not linked.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.12** *P* **280** *L* # **2**

Murphy, Tom — Infineon

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

Differences in PICS between optics clauses

SuggestedRemedy

Fix the PICS based on file which is to be provided by the commenter

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.12.3** *P* **281** *L* **15** # **255**

Lynskey, Eric — UNH-IOL

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

Items *BX-D and *BX-U should be changed to *BXD and *BXU to match up with the rest of the PICS.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.12.3** *P* **281** *L* **15** # **246**

Lynskey, Eric — UNH-IOL

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

Two references to table 59-7 are not linked.

SuggestedRemedy

Add cross references and adjust column size so that table name is not split across two lines.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.12.3.1** *P* **282** *L* **18** # **247**

Lynskey, Eric — UNH-IOL

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

Reference to table 59-4 not linked.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.12.3.2** *P* **282** *L* **25** # **248**

Lynskey, Eric — UNH-IOL

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

Reference to table 59-5 and two references to table 59-7 are not linked.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** SC **59.12.3.3** P **282** L **42** # **249**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Reference to table 59-8 and two references to table 59-9 not linked.

SuggestedRemedy
Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** SC **59.12.3.3** P **282** L **45** # **360**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Stressed sensitivity isn't mandatory here.

SuggestedRemedy
Delete 'mandatory' in Value/Comment column here (BDX3) and next page (BUX3).

Proposed Response *Response Status* **O**

Cl **59** SC **59.12.3.4** P **283** L **5** # **254**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Missing subclause in BXU1.

SuggestedRemedy
Add and link 59.5.1.

Proposed Response *Response Status* **O**

Cl **59** SC **59.12.3.4** P **283** L **5** # **250**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Reference to table 59-8 and two references to table 59-9 not linked.

SuggestedRemedy
Add cross references.

Proposed Response *Response Status* **O**

Cl **59** SC **59.12.3.5** P **283** L **14** # **251**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Reference to table 59-13, figure 59-4, and subclause 60.8.9 not linked.

SuggestedRemedy
Add cross references.

Proposed Response *Response Status* **O**

Cl **59** SC **59.12.3.5** P **283** L **14** # **253**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Missing subclauses in OM1, OM4, OM6, and OM7.

SuggestedRemedy
Add and link the following subclauses:
OM1 - 59.9
OM4 - 59.9.3
OM6 - 59.9.8
OM7 - 59.9.9

Proposed Response *Response Status* **O**

Cl **59** SC **59.12.3.5** P **283** L **26** # **328**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Duplication, spelling, material not in clause. I assume the TIA document mentions the filtering receiver?
Change 'Per ANSI/TIA/EIA-526-4A using patch cable per 59.9.8 using forth-order Bessel-Thomson filter and patch cable per 59.9' to:

SuggestedRemedy
Per ANSI/TIA/EIA-526-4A using patch cable per 59.9, minimal back reflections and fourth-order Bessel-Thomson receiver

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.12.3.5** *P* **283** *L* **30** # **329**
Dawe, Piers Agilent

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

Blank column s/b 59.9.8. Hanging 'per'. I assume the TIA document mentions the filtering receiver?
Change 'Using fourth-order Bessel-Thomson filter per , using patch cable per 59.9' to:

SuggestedRemedy

Per 58.8.8 and ANSI/TIA/EIA-526-4A using patch cable per 59.9 and fourth-order Bessel-Thomson receiver

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.12.3.7** *P* **284** *L* **24** # **252**
Lynskey, Eric UNH-IOL

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

Reference to table 59-1 not linked.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.12.3.8** *P* **284** *L* **42** # **383**
Dawe, Piers Agilent

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

Right reference?

SuggestedRemedy

Change 61754-4 [B25] to 61754-1 as in text.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.2** *P* **259** *L* **6** # **326**
Dawe, Piers Agilent

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

These clause 45 registers are for 10G or EFM electrical PMA/PMDs, and do not apply to 1G PMDs. We haven't heard a specific demand that the 1G register set needs enhancement for 1000BASE-LX10 or 1000BASE-BX10. Some registers for the PHY as a whole (reset, remote fault, link status) already exist in clause 22. If we wanted a register to distinguish U from D, we could use 10.14, MASTER-SLAVE configuration resolution, but would it be useful?

SuggestedRemedy

Unless these 10G registers become applicable to 1G, delete subclause 59.2.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.2** *P* **259** *L* **8** # **443**
Law, David 3Com

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

The 1000BASE-LX10 and 1000BASE-BX10 PHYs are not supported by the Clause 45 register set, only the Clause 22 register set, so the Clause 45 register bits specified here will not be present.

If the functions described here are required they will need to be moved the Clause 22 extension register specified in subclause 45.2.8. One function that will need special consideration however is the Reset function (PMD_reset) and its interaction with the existing Clause 22 Reset bit (0.15).

SuggestedRemedy

Move the specified functions to registers bits within the Clause 22 extension register. Update subclause 45.2.8 as required.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.3.4** *P* **260** *L* **49** # **222**
Lynskey, Eric UNH-IOL

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

Need to add cross reference to table 59-4.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.4** *P* **261** *L* **26** # **223**
Lynskey, Eric UNH-IOL

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

Within subclause 59.4, there are two references to table 59-1 and one reference to table 59-7 that are not linked.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.4.1** *P* **261** *L* **35** # **224**
Lynskey, Eric UNH-IOL

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

Within subclause 59.4.1 there are three references to table 59-5 and one to table 59-6 that are not linked.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.4.1** *P* **262** *L* **10** # **5**
Murphy, Tom Infineon

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

change e to epsilon

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.4.1** *P* **263** *L* **17** # **8**
Murphy, Tom Infineon

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

The transmitter reflectance specification is superfluous for EFM PMDs (Note that 100M PMDs do not have this specification.) This restraint can have yield impacts for non-angle-polished design optics with corresponding cost impact. Link budget calculations show a worst case power penalty difference of 0.1 dB between Refl Tx = -12 dB and Refl Tx = -10 dB, and 1 dB between Refl Tx = -12 dB and REfl Tx = 0 dB(ORL =-10 dB ~ 30% laser front face reflectivity, 30% couple efficiency. ORL 0 dB = 100% reflectivity, 100% couple efficiency)

SuggestedRemedy

Remove the Transmitter reflectance line from Tables 59-5 and 59-8

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.4.2** *P* **261** *L* **50** # **359**
Dawe, Piers Agilent

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

Wrong font for first 'T'.

SuggestedRemedy

Reapply style.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.4.2** *P* **261** *L* **51** # **358**
Dawe, Piers Agilent

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

Footnote b is in error; stressed sensitivity is not optional for 1000BASE-LX10.

SuggestedRemedy

Remove footnote b.

Proposed Response *Response Status* **O**

Cl **59** SC **59.4.2** P **261** L **52** # **225**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Reference to table 59-7 is not linked.

SuggestedRemedy
Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** SC **59.5** P **265** L **25** # **226**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Two references to table 59-1 that are not linked.

SuggestedRemedy
Add cross references.

Proposed Response *Response Status* **O**

Cl **59** SC **59.5.1** P **265** L **35** # **227**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Two references to table 59-8 that are not linked.

SuggestedRemedy
Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** SC **59.5.2** P **265** L **47** # **229**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Reference to table 59-9 not linked.

SuggestedRemedy
Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** SC **59.6** P **265** L **53** # **228**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Reference to table 59-10 not linked.

SuggestedRemedy
Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** SC **59.7** P **266** L **38** # **230**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Reference to table 59-11 not linked.

SuggestedRemedy
Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** SC **59.7** P **266** L **54** # **348**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D**
The jitter sections need to be tied together and have their terminology aligned. The proposed remedy harmonizes with C58, Table 58-10.

SuggestedRemedy
Consider if DJ should be replaced by W here and in 59.8.
Add sentence saying that 'W is similar but not necessarily identical to deterministic jitter (DJ)'.
Refer to 59.9.12 and 59.9.13, note that there are other jitter measurement methods.
Add sentence 'Jitter at TP2 or TP3 is defined with a receiver of the same bandwidth as specified for the transmitted eye.'
Maybe 59.9.13 is a good place to elaborate on DJ and W.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.7** *P* **267** *L* **36** # **385**

Dawe, Piers Agilent

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

It would be nice to have a single jitter subclause here, 59.7, with two sub-subclauses, for MMF and SMF.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.7** *P* **267** *L* **40** # **354**

Dawe, Piers Agilent

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

This sub-clause does not specify use of a receiver filter when measuring optical jitter of an optical signal (at TP2 and TP3). If the reader is aware of the jitter measurement section elsewhere, and persistently drills into the cross-references there, he may get there in the end, but otherwise could be misinformed.

SuggestedRemedy

In 59.7 and 59.8, refer to jitter measurement sections 59.9.12 and 58.8.12. In 58.8.12 and 59.9.12, mention the filter.
Check 58 and 60 for similar issue, fix if necessary.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.8** *P* **266** *L* **43** # **344**

Dawe, Piers Agilent

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

Uneven font size in title.

SuggestedRemedy

Reapply style to title.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.8** *P* **266** *L* **46** # **231**

Lynskey, Eric UNH-IOL

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

Reference to table 59-12 not linked.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.8** *P* **268** *L* **26** # **322**

Dawe, Piers Agilent

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

I have not calculated the jitter delta numbers in table 59-12 in the same way as table 59-11.

SuggestedRemedy

I think the TJ entries, to 3 significant figures, should be
TP1 to TP2 0.334 UI 267 ps
TP2 to TP3 0.119 UI 95 ps

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9** *P* **269** *L* **22** # **219**

Lynskey, Eric UNH-IOL

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

There should be some statement about the amount of allowable minimum interpacket gap sent between each test frame. For the tests to provide accurate measurements, this gap should be kept as small as possible.

SuggestedRemedy

Add a statement or note near Table 59-14 that states that the packets should be sent with as small an interpacket gap as possible.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9** *P* **270** *L* **1** # **218**
Lynskey, Eric UNH-IOL

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

It will be much easier to create the test frames if you do not have to worry about the running disparity at the end of the first portion of the MAC client data. Recommend that the test patterns are repeated within each frame so that within each frame you will see the proper test pattern once.

SuggestedRemedy

In Table 59-14, change the number of bytes in the second portion of MAC Client Data to 456. Remove footnote a. Change tables 59-15 and 59-16 according to the document previously submitted by Jerry Radcliffe. This basically takes each test pattern, sends it once, flips the disparity, and sends it again.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.1** *P* **268** *L* **52** # **232**
Lynskey, Eric UNH-IOL

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

Two references to clause 59, one to table 59-13, and one to table 59-14 are not linked.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.1** *P* **269** *L* **36** # **234**
Lynskey, Eric UNH-IOL

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

In table 59-14, two references to table 59-15 are not linked.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.1** *P* **269** *L* **43** # **235**
Lynskey, Eric UNH-IOL

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

Word is split on two lines with a figure between two halves or word.

SuggestedRemedy

Adjust figure position so it doesn't come between to parts of the word minimal, as split on lines 19 and 43.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.1** *P* **269** *L* **44** # **233**
Lynskey, Eric UNH-IOL

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

Reference to table 59-15 not linked.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.1** *P* **270** *L* **27** # **356**
Dawe, Piers Agilent

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

From Eric Lynskey:
Table 59-16 does not have 228 octets of data, as is shown in Table 59-14 and 59-15.

SuggestedRemedy

Add extra octets or change text so that the jitter test frame doesn't need all of them.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.10** *P* **273** *L* **24** # **238**
Lynskey, Eric UNH-IOL

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

Reference to 58.8.9 not linked.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.11** *P* **273** *L* **27** # **239**
Lynskey, Eric UNH-IOL

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

References to table 59-7, table 59-9, and 58.8.10 are not linked.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.12** *P* **273** *L* **36** # **401**
Dawe, Piers Agilent

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

Trying to reconcile two competing jitter procedure specs.

SuggestedRemedy

Change 'All total jitter measurements should' to 'Total jitter measurements may'.' Change 'A.4.2. See also' to A.4.2 or according to'.
In 59.8.13, change title to 'Deterministic or high probability jitter measurement (informative)'. Change 'Deterministic jitter should' to 'Deterministic jitter may'. Extend the first sentence thus: '18
A.4.3, DJ Measurement, or high probability jitter may be measured according to 58.8.12.'.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.12** *P* **273** *L* **42** # **240**
Lynskey, Eric UNH-IOL

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

References to table 59-7 and table 59-9 not linked.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.12** *P* **273** *L* **45** # **402**
Dawe, Piers Agilent

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

Sentence could be made more meaningful by changing the order of words.

SuggestedRemedy

Change 'Measurements should be taken directly at TP4 without additional Bessel-Thomson filters.' to 'Measurements at TP4 should be taken directly without additional Bessel-Thomson filters.'.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.14** *P* **274** *L* **33** # **241**
Lynskey, Eric UNH-IOL

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

References to table 59-7 and table 59-9 not linked.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.15** *P* **275** *L* **15** # **242**
Lynskey, Eric UNH-IOL

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

References to table 59-7 and table 59-9 not linked.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.2** *P* **269** *L* **50** # **319**

Dawe, Piers — Agilent

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

Now we have some good boilerplate we should use it throughout the test procedures. We can let TIA decide what the instrument is called.

SuggestedRemedy

'The wavelength and spectral width (RMS) shall meet specifications according to ANSI/EIA/TIA-455-127 ...'
(Similarly in clauses 58 and 60).

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.2** *P* **270** *L* **30** # **217**

Lynskey, Eric — UNH-IOL

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

Table 59-16 does not have 228 octets of data as is shown in Table 59-14 and 59-15.

SuggestedRemedy

Change the low transition density pattern from 148 octets to 164 octets.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.2** *P* **271** *L* **30** # **440**

Law, David — 3Com

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

I do not believe there is any definition of the term SLM in relation to laser in the base standards not is one added by EFM, although SLM does happen to be spelt out in annex 67A (see 67A.3, page 604, line 45).

SuggestedRemedy

Add to subclause 1.5 changes:

SLM single longitudinal mode.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.2** *P* **271** *L* **39** # **237**

Lynskey, Eric — UNH-IOL

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

Two references to table 59-5, one reference to table 59-8 are not linked.

SuggestedRemedy

Add cross references.

Proposed Response *Response Status* **O**

Cl **59** *SC* **59.9.4** *P* **271** *L* **50** # **438**

Law, David — 3Com

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

The shall statement in this subclause states that the 'Extinction ratio shall meet specifications according to methods specified in ANSI/TIA/EIA-526-4A with the node transmitting a repeating idle pattern /I2/ ordered_set (see 36.2.4.12) ...'. Since the shall statement is against only the text 'a repeating idle pattern /I2/ ordered_set' and the text 'The idle pattern may be interspersed with a low proportion of OAM packets.' could be read as a statement of fact - is it warning the tested that idle can be interspersed with OAM packets therefore these OAM packets should be disabled before the test is performed - this text may need to be clarified if what in fact it is saying is that it is acceptable to perform the test with a low number of OAM packets present.

It is also not clear what a 'low proportion of OAM packets' means. What is this a low proportion of, it can be of the total number of packets since there are no other packets present during idle. Suggest that a fixed limit of 10 OAM packets a second should be used as this is the limit from Annex 43B.2.

I have submitted a similar comment for 58.8.4 and 60.8.4.

SuggestedRemedy

Suggest this subclause be changed to read:

Extinction ratio shall be measured using the methods specified in ANSI/TIA/EIA-526-4A with the node transmitting a repeating idle pattern /I2/ ordered_set (see 36.2.4.12) that may be interspersed with a maximum of 10 OAM packets as second and with minimal back reflections into the transmitter, lower than -20 dB. The /I2/ ordered_set is defined in Clause 36, and is coded as /K28.5/ D16.2/ which is binary 001111 1010 100100 0101 within idles.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Figure 59-3** *P* **262** *L* **12** # **449**

Law, David 3Com

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

Typo. In the text 'RMS spectral width to achieve e = 0.115' shouldn't the 'e' actually be the epsilon character.

SuggestedRemedy

Replace the character 'e' with the epsilon character.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 58-7** *P* **265** *L* **19** # **345**

Dawe, Piers Agilent

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

Untidy cross reference.

SuggestedRemedy

Delete '.n' in footnote a.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-10** *P* **267** *L* **45** # **332**

Dawe, Piers Agilent

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

Wrong entries for 100BASE-LX10 MMF budget.

SuggestedRemedy

In Table 59-10, the LX10 value for the available power budget should be changed from 9.0 to 8.5 dB and the allocation for penalties should be changed from 6.6 to 6.1 dB.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-13** *P* **269** *L* **12** # **295**

Paul Fitzgerald Circadiant Systems

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

Use of the Random pattern test frame Optical frame based test pattern of 58.8.1.1 will lead to a broadcast storm and take down the Ethernet network when broadcast mode is entered. This pattern is too dangerous to imbed into low-cost test equipment that could be used in the field. It is a recipe for malicious hacking.

SuggestedRemedy

Substitute with Valid 1000BASE-X signal.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-14** *P* **269** *L* **22** # **363**

Dawe, Piers Agilent

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

Another of Eric's comments just in case:
In previous clauses, such as 36 and 48, the test patterns were defined as being separated by a minimum IPG. Should we say something about the amount of idle between these frames?

SuggestedRemedy

Add a row to Table 59-14 that has a minimum IPG to be transmitted after the Frame Check Sequence. Also, possibly add a sentence near line 42 on page 268 that says that when performing a test, the frames should be sent with a minimum IPG (or possibly we say as close to minimum as you can).

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-14** *P* **269** *L* **40** # **362**

Dawe, Piers Agilent

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

Another of Eric's comments just in case:
It will make it much easier to create the jitter test frames if you do not have to worry about the running disparity at the end of the first portion of MAC Client Data. For the random pattern test frame, it currently begins with a positive running disparity and ends with a positive running disparity (the original pattern defined in clause 36 started with a negative RD). If a code that flips disparity was then placed at the end and the second portion of MAC Client data repeated, it would begin negative and end negative. The opposite would be the case should the test pattern begin with a negative running disparity. Also, is there a reason the frame is so small?

SuggestedRemedy

Remove the requirement for running disparity to be positive following the first portion of the MAC client data by either defining frames that will transmit both disparities of the test patterns, or defining test patterns for which the disparity doesn't have an impact. For the first solution, you would add a character that flips disparity at the end of the pattern, such as 0x06. Possibly extend the frame so that more repetitions of the pattern can be transmitted.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-16** *P* **270** *L* **26** # **361**

Dawe, Piers Agilent

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

Copying Eric's comment just in case:
The random pattern test frame has very similar content to the frames defined in Clauses 36 and 48. The jitter test frame in Table 59-16 differs significantly from a previously defined jitter test frame for clause 48. Was this intentional? I recommend modifying test frame to be more similar to 48A.5. Also, is there a reason the size of the frame is 278 bytes? This could be increased. Also, by repeating the test pattern within the frame, such as is done in 48A.5, it allows you to ignore what the beginning running disparity of the pattern is, since both patterns will be present in the frame. This could make it somewhat easier when constructing these frames, so you don't have to worry about the disparity coming out of the first portion of the MAC Client data. The data listed here is effectively what CJPAT would be on a single lane.

SuggestedRemedy

Payload for jitter test frame:
7E for 132 octets
F4, EB, F4, EB, F4, FE, F4, AB
B5 for 40 octets
EB, F4, EB, F4, EB, F4, EB, F4
7E for 132 octets
F4, EB, F4, EB, F4, FE, F4, AB
B5 for 40 octets
EB, F4, EB, F4, EB, F4, EB, F4

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-5** *P* **263** *L* **15** # **308**

Dawe, Piers — Agilent

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

Need to reconcile the decision point offset numbers.
If common silicon behind TP4 is to be used for 1000BASE-LX10 and 1000BASE-BX10, the decision timing offsets need to be the same. At present they are +/-65 ps and +/-0.1 UI = 80 ps. I think we have a consensus that +/-72 ps would be OK. However, if we are to be consistent with poor legacy SERDES and TP1/4 jitter tables, we may have to go further than that. Experience with offsets at 10G tells us to be careful and not to push the offsets as far as the jitter bathtub would imply - we thought that real-world test equipment needed to be taken into account. So I would be reluctant to go as far as the +/-100 ps implied by the jitter tables, but maybe 72 isn't enough. For comparison 1000BASE-PX-D (the continuously running direction) has 0.1 UI which is 80 ps.

SuggestedRemedy

Change decision timing requirements in Table 59-5 and Table 59-8 to either 72 or 80 ps.
Add to e.g. 59.7:
NOTE - A margin between the total jitter at TP4 and the eye opening imposed by the decision point offsets for TDP is intended to allow for the performance of test equipment used for TDP measurement, to avoid very involved jitter calibrations.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-5** *P* **263** *L* **17** # **335**

Dawe, Piers — Agilent

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

The transmitter reflectance limit was inherited from a DFB oriented specification and may be too strict here.
Reasons to keep a limit:
To control reflection noise caused by echoes beating with the signal. This could cause a problem on very low loss (short) SMF links or, worse but out of spec, if there is an out-of-spec bad connector near the transmitter on a long link,
Reflection noise combined with RIN could make the problem much worse.
Reasons to relax the limit:
Our minimum extinction ratio reduces the effect as compared with 10GBASE-L;
FP lasers have several modes so there are several beat noises and some benefit of diversity (but most of the power can be in one mode);
Reflection from the laser facet, in the absence of an isolator, could exceed -12 dB. Laser front facet reflectance is a good thing in an FP, keeping light from the network out of the laser, and should not be discouraged;
In principle, the TDP spec should catch these reflection problems (but it's good if we can give guidance on individual elements which can be tested separately).

SuggestedRemedy

This subject deserves more investigation - is the answer in the learned literature somewhere?
If we don't have any further input:
Change -12 to -6 here and for 1000BASE-BX10-U;
Change -12 to -10 for 1000BASE-BX10-D (1490 nm);
For 1000BASE-PX, we can't just do as for 10GBASE-E (rely in the minimum channel insertion loss) because here, all that lass can be due to splitting - several receiver reflections are brought back together at the transmitter. Use -6 for 1000BASE-PX10-U (1310 nm) and -10 for the other PXs?
If the subject remains controversial by the March meeting, downgrade the transmitter reflectance specs from 'shall' to 'should'.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-5** *P* **263** *L* **19** # **291**

Paul Fitzgerald — Circadiant Systems

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

The TDP test is not achieving widespread support.

SuggestedRemedy

Change to a Path Penalty Test with a minimum specified amount of dispersion in the test fiber.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-5** *P* **263** *L* **19** # **334**

Dawe, Piers — Agilent

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

Because we have declared 400 MHz.km at 1300 nm a merely 'historical bandwidth requirement', we have the same differential delay for TDP for both MMF types. The significant difference between the two fibre types is the allocation for modal noise, which is not tested in TDP. So, the TDP limit for 50 um MMF should be the same as for 62.5 um MMF. 3.5 dB is an appropriate limit but if we increase the decision timing offsets this value should be revisited.
If we are sure the two columns won't differ in future, they could be combined into one.

SuggestedRemedy

Change '4' to '3.5' or slightly higher value following choice of decision timing offsets. Consider using one MMF column instead of two, as in table 59-10; if so, make the 'Description' column wider.

Proposed Response *Response Status* **O**

Cl **59** *SC* **table 59-6** *P* **263** *L* **35** # **6**

Murphy, Tom — Infineon

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

change table heading to be the same as corresponding table in Cl 60

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-7** *P* **264** *L* **36** # **355**

Dawe, Piers — Agilent

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

Hunting Down those Capitals.

SuggestedRemedy

Lower case Sensitivity (twice), Reflectance, Receive. Also in table 59-9.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-7** *P* **265** *L* **6** # **292**

Paul Fitzgerald — Circadiant Systems

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

802.3 currently requires 1 Gigabit Ethernet to be tested with stressed receiver conformance test. For consistency, 1GE in 802.3ah should too.

SuggestedRemedy

Eliminate footnote b

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-8** *P* **266** *L* **27** # **293**

Paul Fitzgerald — Circadiant Systems

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

The TDP test is not achieving widespread support.

SuggestedRemedy

Change to a Path Penalty Test with a minimum specified amount of dispersion in the test fiber.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-9** *P* **267** *L* **11** # **331**

Dawe, Piers — Agilent

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

We seem to have ended up with the same transmit powers for 1000BASE-LX10 and 1000BASE-BX10, same cable plant yet different sensitivities. Not sure if this makes sense.

SuggestedRemedy

Raise 1000BASE-BX10 sensitivities by 0.5 dB:
Change receive sensitivity for BX10 in Table 59-9 to -19.5 dB, increase receiver OMA, stressed mean and OMA by 0.5 dB, and change the available power budget in Table 59-10 for BX10 to 10.5 dB and the allocation for penalties to 5.0 dB for 1550nm and 4.5 dB for 1310 nm.

Proposed Response *Response Status* **O**

Cl **59** *SC* **Table 59-9** *P* **267** *L* **16** # **294**

Paul Fitzgerald — Circadiant Systems

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

802.3 currently requires 1 Gigabit Ethernet to be tested with stressed receiver conformance test. For consistency, 1GE in 802.3ah should too.

SuggestedRemedy

Eliminate footnote a

Proposed Response *Response Status* **O**

Cl **60** *SC* **59.2** *P* **289** *L* **18** # **327**

Dawe, Piers — Agilent

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

These clause 45 registers are for 10G or EFM electrical PMA/PMDs, and do not apply to 1G PMDs. We haven't heard a specific demand that the 1G register set needs enhancement for 1000BASE-PX PMDs. Some registers for the PHY as a whole (reset, remote fault, link status) already exist in clause 22. If we wanted a register to distinguish U from D, we could use 10.14, MASTER-SLAVE configuration resolution, but would it be useful?

SuggestedRemedy

Unless these 10G registers become applicable to 1G, delete subclause 60.2.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.1** *P* **286** *L* **22** # **374**

Dawe, Piers — Agilent

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

There is an interoperability possibility between 1000BASE-PX20-U and 1000BASE- PX10-D.

SuggestedRemedy

Add a sentence or two describing it.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.1** *P* **286** *L* **9** # **787**

Booth, Brad — Intel

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

Last sentence of first paragraph seems disjointed.

SuggestedRemedy

Change second sentence of paragraph to read:
A 1000BASE-PX10-D and 1000BASE-PX10-U PHY (physical layer) device is a combination of a 1000BASE-X PCS and PMA with the respective PMD. If the optional OAM is being used, the 1000BASE-X PCS and PMA in Clause 66 shall be integrated; otherwise, the Clause 36 1000BASE-X PCS and PMA as modified by 65.3 shall be integrated. The management functions may be accessible through the optional Management Interface.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.10** *P* **309** *L* **4** # **351**

Dawe, Piers — Agilent

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

I think 'ITU' should be 'ITU-T' to distinguish it from ITU-R.

SuggestedRemedy

Change 'ITU' to 'ITU-T'.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.10.2** *P* **309** *L* **45** # **352**

Dawe, Piers — Agilent

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

Consistency with other clauses. Delete date of reference, add mention of ITU-T G.652. Resulting in ...

SuggestedRemedy

... IEC 60793-2 Type B1.1 (dispersion un-shifted single-mode fiber) and Type B1.3 (low water peak single-mode fiber) and ITU G.652 as noted in Table 60-16.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.10.4** *P* **310** *L* **52** # **384**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Gratuitous line feed?

SuggestedRemedy
remove

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.11** *P* **331** *L* # **3**
Murphy, Tom Infineon

Comment Type **T** *Comment Status* **D**
Differences in the PICS of the optics clauses

SuggestedRemedy
Fix the PICS based on file from the commenter

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.11.4.5** *P* **315** *L* # **317**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D**
Missing PICS? IEC 61753-1 if rematable?

SuggestedRemedy
Copy from 58 or 89.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.2** *P* **289** *L* **18** # **444**
Law, David 3Com

Comment Type **TR** *Comment Status* **D**
The 1000BASE-PX10 and 10o0BASE-PX20 PHYs are not supported by the Clause 45 register set, only the Clause 22 register set, so the Clause 45 register bits specified here will not be present.

If the functions described here are required they will need to be moved the Clause 22 extension register specified in subclause 45.2.8. One function that will need special consideration however is the Reset function (PMD_reset) and its interaction with the existing Clause 22 Reset bit (0.15).

SuggestedRemedy
Move the specified functions to registers bits within the Clause 22 extension register. Update subclause 45.2.8 as required.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.3.4.2** *P* **291** *L* **30** # **10**
Murphy, Tom Infineon

Comment Type **T** *Comment Status* **D**
The signal detect in the upstream is optional, however, the second paragraph generates a mandatory PICS entry

SuggestedRemedy
Change the text so that the PICS entry is removed

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.4.1** *P* **292** *L* **40 to 54** # **47**
Pi-Cheng Law Chunghwa Telecom L

Comment Type **E** *Comment Status* **D**
Does Table 60-5 have other characteristics?

SuggestedRemedy
If not, it should be a complete table without a blank.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.4.1** *P* **293** *L* **17** # **9**

Murphy, Tom Infineon

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

The transmitter reflectance specification is superfluous for EFM PMDs (Note that 100M PMDs do not have this specification.) This restraint can have yield impacts for non-angle-polished design optics with corresponding cost impact. Link budget calculations show a worst case power penalty difference of 0.1 dB between Refl Tx = -12 dB and Refl Tx = -10 dB, and 1 dB between Refl Tx = -12 dB and REfl Tx = 0 dB(ORL =-10 dB ~ 30% laser front face reflectivity, 30% couple efficiency. ORL 0 dB = 100% reflectivity, 100% couple efficiency)

SuggestedRemedy

Remove the Transmitter reflectance line from Table 60-5 and 60-8

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.4.1** *P* **293** *L* **27** # **446**

Law, David 3Com

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

The text 'RMS spectral width vs. wavelength for 1000BASE-PX10 is shown in .. and Figure 60–3.' is not correct as Figure 60-3 only shows the RMS spectral width vs. wavelength for the 1000BASE-PX10-U PMD.

SuggestedRemedy

Suggest the text 'RMS spectral width vs. wavelength for 1000BASE-PX10 is shown in Table 60–6 and Figure 60–3.' should read 'The maximum RMS spectral width vs. wavelength for 1000BASE-PX10 is shown in Table 60–6 and for 1000BASE-PX10-U in Figure 60–3.'

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.4.1** *P* **293** *L* **44** # **4**

Murphy, Tom Infineon

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

Change e to epsilon, here and p297

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.5.1** *P* **295** *L* **47** # **447**

Law, David 3Com

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

The text 'The maximum RMS spectral width vs. wavelength for 1000BASE-PX20 is shown in Table 60–9 and Figure 60–4.' is not correct as Figure 60-4 only shows the RMS spectral width vs. wavelength for the 1000BASE-PX20-U PMD.

SuggestedRemedy

Suggest the text 'The maximum RMS spectral width vs. wavelength for 1000BASE-PX20 is shown in Table 60–9 and Figure 60–4.' should read 'The maximum RMS spectral width vs. wavelength for 1000BASE-PX20 is shown in Table 60–9 and for 1000BASE-PX20-U in Figure 60–4.'

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.6** *P* **297** *L* **41 to 54** # **48**

Pi-Cheng Law Chunghwa Telecom L

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

Does Table 60-9 have other information in the blank?

The blank could let readers think that it has something else.

SuggestedRemedy

If not, it should be a complete table without a blank.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.6** *P* **298** *L* **41 to 54** # **49**

Pi-Cheng Law Chunghwa Telecom L

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

Does Table 60-10 have other information in the blank?

The blank could let readers think that it has something else.

SuggestedRemedy

If not, it should be a complete table without the blank.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.7** *P* **300** *L* **14 to 54** # **50**
Pi-Cheng Law Chunghwa Telecom L

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

I think you should separate jitter generation(no jitter input to ONU) from jitter transfer(jitter input to ONU).

There are different definitions and testing conditions between them.

SuggestedRemedy

The "No Jitter input to ONU" can be definited as the formal name " Jitter generation".

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.7** *P* **300** *L* **8** # **318**
Dawe, Piers Agilent

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

The jitter sections need to be tied together and have their terminology aligned.

SuggestedRemedy

Consider if DJ should be replaced by W here.
Add sentence saying that 'W is similar but not necessarily identical to deterministic jitter (DJ)'.
Refer to 60.8.12 and maybe 59.9.12, note that there are other jitter measurement methods.
Add sentence 'Jitter at TP2 or TP3 is defined with a receiver of the same bandwidth as specified for the transmitted eye.'
Consider if 60.8.12 should refer to 59.9.12 and/or 59.9.13.
Correlate with clause 59 and 58.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.8** *P* **301** *L* **13 to 14** # **51**
Pi-Cheng Law Chunghwa Telecom L

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

The position of the title" 60.8 optical measurement requirements" is not proper for the context.beause the Figure 60-5 and table 60-14 belong to Clause 60.7.

SuggestedRemedy

You should shift the title to the position of line 36.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.8.11** *P* **304** *L* **8** # **300**
Paul Fitzgerald Circadiant Systems

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

Requires a test pattern rather than live traffic.

SuggestedRemedy

Use valid or live 1000BASE-X traffic for all stressed receiver conformance tests in

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.8.2** *P* **302** *L* **13** # **321**
Dawe, Piers Agilent

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

It seems odd to say that two different epsilon values both give "below 2 dB" chromatic dispersion penalty.

SuggestedRemedy

I guess it's safe to reduce the second one to 'less than 1.5 dB' to show we have thought about it.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.8.4** *P* **302** *L* **26** # **437**
Law, David 3Com

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

The shall statement in this subclause states that the 'Extinction ratio shall meet specifications according to methods specified in ANSI/TIA/EIA-526-4A with the node transmitting a repeating idle pattern /I2/ ordered_set (see 36.2.4.12) ...'. Since the shall statement is against only the text 'a repeating idle pattern /I2/ ordered_set' and the text 'The idle pattern may be interspersed with a low proportion of OAM packets.' could be read as a statement of fact - is it warning the tested that idle can be interspersed with OAM packets therefore these OAM packets should be disabled before the test is performed - this text may need to be clarified if what in fact it is saying is that it is acceptable to perform the test with a low number of OAM packets present.

It is also not clear what a 'low proportion of OAM packets' means. What is this a low proportion of, it can be of the total number of packets since there are no other packets present during idle. Suggest that a fixed limit of 10 OAM packets a second should be used as this is the limit from Annex 43B.2.

I have submitted a similar comment for 58.8.4 and 59.9.4.

SuggestedRemedy

Suggest this subclause be changed to read:

Extinction ratio shall be measured using the methods specified in ANSI/TIA/EIA-526-4A with the node transmitting a repeating idle pattern /I2/ ordered_set (see 36.2.4.12) that may be interspersed with a maximum of 10 OAM packets as second and with minimal back reflections into the transmitter, lower than -20 dB. The /I2/ ordered_set is defined in Clause 36, and is coded as /K28.5/ D16.2/ which is binary 001111 1010 100100 0101 within idles.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.8.8** *P* *L* # **144**
Barrow, Bruce SCC14

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

In Eq. 60-5 write "GHz" in upright font. And, as a truly picky point, "j" should be upright.

SuggestedRemedy

Unit symbols and mathematical constants (like p, e, and j) should be upright.

Proposed Response *Response Status* **O**

Cl **60** *SC* **60.8.8** *P* **302** *L* **46** # **7**
Murphy, Tom Infineon

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

Different text between Cl 59 and Cl 60

SuggestedRemedy

Change 60.8.8 to have the same text (where appropriate) as 59.9.8

Proposed Response *Response Status* **O**

Cl **60** *SC* **Figure 60-1** *P* **287** *L* **25** # **373**
Dawe, Piers Agilent

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

Implementing resolution to D.0 comment #89.

SuggestedRemedy

Show optional FEC; keep synchronised with Fig 56-2.

Proposed Response *Response Status* **O**

Cl **60** *SC* **Figure 60-1** *P* **287** *L* **26** # **445**
Law, David 3Com

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

The drawing of the 'Passive Optical Network Medium' as a bar with a broken end at the right implies a bus structure with other ONU(s) added onto the same bus.

SuggestedRemedy

Change the bar to be a bar with a box in the middle which is marked as Optical splitter. Change the broken right end bar to be a straight end. Another bar with a broken end that doesn't connect to anything.

Proposed Response *Response Status* **O**

Cl **60** *SC* **Figure 60-1** *P* **287** *L* **28** # **372**
Dawe, Piers Agilent

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

The medium can't have a stub to the left of the OLT's MDI. See e.g. Fig 14-1 or 15-1 for styles that clearly avoid the implied stub.

SuggestedRemedy

Remove the apparent stub.

Proposed Response *Response Status* **O**

Cl **60** *SC* **Figure 60-3** *P* **293** *L* **44** # **450**
Law, David 3Com

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

Typo. In the text 'RMS spectral width to achieve e = 0.115' shouldn't the 'e' actually be the epsilon character.

SuggestedRemedy

Replace the character 'e' with the epsilon character.

Proposed Response *Response Status* **O**

Cl **60** *SC* **Figure 60-4** *P* **297** *L* **12** # **448**
Law, David 3Com

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

Typo. In the text 'RMS spectral width to achieve e = 0.10' shouldn't the 'e' actually be the epsilon character.

SuggestedRemedy

Replace the character 'e' with the epsilon character.

Proposed Response *Response Status* **O**

Cl **60** *SC* **Figure 60-4** *P* **297** *L* **5** # **338**
Dawe, Piers Agilent

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

Although I don't think it's actually an error, the narrow peak on this graph is not useable in practice: manufacturing tolerances combined with operating temperature ranges mean that a region narrower than say 20 nm is not much use in practice. We could go further than the suggestion below, which does not change the practical effect of the draft.

SuggestedRemedy

Truncate the "maximum" curve at 2.5 nm. Adjust table 60-9 accordingly: two rows would disappear, entries for 1305 and 1320 would get rounded down to 2.5 nm. If wished, remove the top 1 nm of the graph.

Proposed Response *Response Status* **O**

Cl **60** *SC* **Table 60-10** *P* **299** *L* **10** # **299**
Paul Fitzgerald Circadiant Systems

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

802.3 currently requires 1 Gigabit Ethernet to be tested with stressed receiver conformance test. For consistency, 1GE in 802.3ah should too.

SuggestedRemedy

Eliminate footnote a

Proposed Response *Response Status* **O**

Cl **60** *SC* **Table 60-5** *P* **293** *L* **19** # **296**
Paul Fitzgerald Circadiant Systems

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

The TDP test is not achieving widespread support.

SuggestedRemedy

Change to a Path Penalty Test with a minimum specified amount of dispersion in the test fiber.

Proposed Response *Response Status* **O**

Cl **60** *SC* **Table 60-7** *P* **295** *L* **20** # **297**
Paul Fitzgerald Circadiant Systems

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

802.3 currently requires 1 Gigabit Ethernet to be tested with stressed receiver conformance test. For consistency, 1GE in 802.3ah should too.

SuggestedRemedy

Eliminate footnote a

Proposed Response *Response Status* **O**

Cl **60** *SC* **Table 60-8** *P* **296** *L* **31** # **298**
Paul Fitzgerald Circadiant Systems

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

The TDP test is not achieving widespread support.

SuggestedRemedy

Change to a Path Penalty Test with a minimum specified amount of dispersion in the test fiber.

Proposed Response *Response Status* **O**

Cl **60** *SC* **Table 60-9** *P* **297** *L* **40** # **337**

Dawe, Piers Agilent

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

There seems to be a mistake in this table: numbers in third column must be less than numbers in second column.

SuggestedRemedy

Check table entries from 1304 to 1321 nm and correct if necessary.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61** *P* **318** *L* **1** # **823**

Tom Mathey Independent

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

Clause 61 has a number of misplace and/or missing register bits.
When both ends of the link are configured to the same port type of _R to _R, or _O to _O, then the link will not come up but there is no way for the user to determine why.
Some of the clause 45 registers are generic, and apply to all of the places where used. Examples are reset, loopback, OUI or device identifiers, etc. For those persons who did not participate in the 10G development of Clause 45, this requirement is easily missed.
For example, it is not obvious that the PMA layer requires a loopback capability, and there is no text in Clause 61, 62 or 63 to support loopback

SuggestedRemedy

Using the NPAR and SPAR registers, add ability to transport local setting (_R, _O) of port type to link partner, and ability for local device to read or obtain the port type (_R, _O) of link partner.
Include table to show which registers are required.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61** *P* **318** *L* **1** # **821**

Tom Mathey Independent

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

Clause 45 PCS register 3.0 is generic and applies to this clause. However, there is no indication in clause 61 as which of the general purpose registers from Clause 45 apply to Clause 45. Only those persons who participated in the 10Gig development will understand which registers apply to Clause 61.

SuggestedRemedy

Add text to state which registers from Clause 45 are to apply.
Specifically:
Add text to state that bit 3.0.14 for loopback applies to clause 61
A few words about reset, bit 3.0.15 and any other generics (such as fault) and the device identifier would be nice.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1** *P* **318** *L* **10** # **619**

Brown, Benjamin Independent

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

missing comma

SuggestedRemedy

add a comma after "ETSI"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1** *P* **318** *L* **19** # **620**

Brown, Benjamin Independent

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

The MAC is specified in Clause 4

SuggestedRemedy

Replace "Clauses 1 through 4" with "Clause 4"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1** *P* **318** *L* **35** # **822**

Tom Mathey Independent

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

Typo: word "of" s/b "or", and signaling is now via the PCS (at least for PCS errors), not the PMA as previously.

SuggestedRemedy

Change sentence
From: If a particular anomaly or failure occurs in either downstream of upstream, PMA/PMD specific signaling will alert the remote end of this condition.

To : If a particular anomaly or failure occurs in either downstream or upstream, PCS specific signaling will alert the remote end of this condition.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1** *P* **318** *L* **9** # **618**

Brown, Benjamin Independent

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

DSL?

SuggestedRemedy

Spell out first usage of DSL

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.2** *P* **318** *L* **50** # **621**

Brown, Benjamin Independent

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

misleading objective

SuggestedRemedy

Replace "full duplex operation" with "full duplex operation over the medium"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.3** *P* **319** *L* **23** # **155**

Edward Beili Actelis Networks Inc.

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

In Figures 61-1, 61-2 PMI Aggregation function is depicted yet no PMI layer/object is shown. In Figures 61-3 61-4-2 and 61-5-4 it looks like PMI is an entity below PMA/PMD. Also PMI is defined as Physical Medium Independent in Abbreviations and Figure 61-1 and as PMA/PMD Instance in 61.1.5.3 (page 322 line 42). The Instance is probably a better term than Independent, besides I couldn't find any use of PMI in the original 802.3-2002, except for listing it in abbreviations.

SuggestedRemedy

Define PMI as PMA/PMD Instance in Abbreviations and Figure 61-1. Draw PMI container around PMA/PMD in Figures 61-1 and 61-2. Replace PMI-x with Pair-x (or Copper Pair-x or Voice Grade Copper Pair or whatever) in Figures 61-3, 61-4-2 and 61-5-4.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.4.1** *P* **319** *L* **47** # **623**

Brown, Benjamin Independent

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

There's only 1 PCS

SuggestedRemedy

Replace "Sublayer (PCS) ... contain" with "Sublayers (PCS) ... contains"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.4.1** *P* **320** *L* **35** # **83**

Beck, Michael Alcatel Bell n.v.

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

"MII interface" is redundant.

SuggestedRemedy

Replace all occurrences of "MII interface" with "MII" throughout clauses 61, 62 and 63 and annexes.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.4.1** *P* **320** *L* **47** # **624**

Brown, Benjamin Independent

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

Remove "A" and comma

SuggestedRemedy

Replace "A preamble and SFD ... data frame, prior" with "Preamble and SFD ... data frame prior"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.4.1.1** *P* **321** *L* **30** # **454**

Squire, Matt Hatteras Networks

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

We say that excessive deferrals will be counted in C30, but C30 says the attribute is undefined when using rate matching.

SuggestedRemedy

Eliminate this sentence.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.4.1.1** *P* **321** *L* **35** # **626**

Brown, Benjamin Independent

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

The MAC can't stretch

SuggestedRemedy

The MAC is incapable of performing the kind of stretching you are referring to. The MAC responds directly to the MAC Client. If the MAC's IPG has timed out and the MAC Client wants to send a packet, the MAC must do so. Only the MAC Client can perform the kind of stretching you are referring to here and the MAC Client is not under our control.

Remove this note.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.4.1.1** *P* **321** *L* **7** # **625**

Brown, Benjamin Independent

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

missing comma

SuggestedRemedy

Replace "operate the MAC" with "operate, the MAC"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.4.1.2** *P* **321** *L* **40** # **627**

Brown, Benjamin Independent

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

PMI aggregator can't be a function within the PCS

SuggestedRemedy

This function aggregates multiple physical layers below a single PCS. As shown in Figure 61-2, this can't be a single function that is shared between multiple PCSs. This must be a sublayer unto itself. As such, it must be part of Figure 61-1.

However, it is possible that the TPS-TC can be a function but within the PMA and no longer within the PCS.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.4.1.4** *P* **322** *L* **6** # **628**

Brown, Benjamin Independent

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

eoc?

SuggestedRemedy

Should this be uppercase? Also, spell out the first uses of EOC, VOC and IB.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.4.1.4** *P* **322** *L* **7** # **455**
Squire, Matt Hatteras Networks

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

We use EoC, VOC, IB, and EOC without ever saying what they are.

SuggestedRemedy

Eliminate the acronyms (the whole parenthesized part).

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.5.3.1** *P* **323** *L* **37** # **824**
Tom Mathey Independent

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

Figure 61-3 clearly shows the Flexible cross-connect as applying to a (set of) single MAC connected to a single PCS connected to a single PMA/PMD. This occurs in the absence of loop aggregation. This single MAC to any possible one of many PMA/PMD is the single most useful feature of the cross-connect. However, this feature does not exist independent of loop agg. There is no way to make such a connection without going thru the entire loop agg discovery and assignment process.

SuggestedRemedy

When loop agg is not available, or not desired to be enabled, provide a register and a means via text description to connect a single MAC to any possible one of many PMA/PMD's.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.1.5.3.2** *P* **323** *L* **50** # **629**
Brown, Benjamin Independent

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

wrong words

SuggestedRemedy

Replace "which" with "that" on lines 50 & 51

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.1.1** *P* **327** *L* **33** # **916**
Schneiderheinze, Burkart Infineon

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

Signal TC_synchronized is not available here. Change to PCS_link_state.

SuggestedRemedy

change TC_synchronized to PCS_link_state 4 times in this paragraph and the following note.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.1.2.1** *P* **327** *L* **47** # **304**
Stephen Haddock Extreme Networks

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

MII signals are defined in clause 22.

SuggestedRemedy

Change "Table 23-1 in 23.2.2.1" to "Table 22-1 in 22.2.2.1"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.1.3.2** *P* **328** *L* **26** # **825**
Tom Mathey Independent

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

While the text for tx_rx_simultaneously that was added in d2.2 is not strictly incorrect, it is certainly inadequate. Text is:
"True if the MAC is capable of transmitting and receiving simultaneously in half duplex mode, or if the MAC is configured in the full duplex mode."

If the mac is placed in the full duplex mode, then there needs to be additional text in Clause 4 to inform the user of how much delay between packets the mac must add as the phy speed is most likely well below 100 mbps. Thus the mac will need to know the speed of the phy (obtained in some manner from clause 62 and 63) for single links , and the effective speed when agg'd. This will the change the parameters in unnumbered table in 4.4.2, and have other possible unanticipated consequences.

SuggestedRemedy

Remove text ", or if the MAC is configured in the full duplex mode". Else open up Clause 4, modify tables in 4.4, provide formula for speed vs idle delays, add an annex to provide examples for how to convert a clause 45 speed register to number of idles (for the unwashed masses who are ignorant of Clause 62 and 63).

Also applies to p321, line 37, clause 61.1.4.1.1

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.1.3.2** *P* **328** *L* **27** # **456**
Squire, Matt Hatteras Networks

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

We include a statement about the MAC in full duplex, but in several places (including 61.1.4.1.1) we say the MAC must be in half-duplex mode.

SuggestedRemedy

Eliminate configured in full-duplex option.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.1.3.2** *P* **328** *L* **28** # **889**
Schneiderheinze, Burkart Infineon

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

if the MAC is configured in the full duplex mode

SuggestedRemedy

accdg. To 802.3 CRS is not defined in full duplex mode, therefore rate adaption won't work -> remove that part of the sentence

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.1.3.2** *P* **328** *L* **35** # **631**
Brown, Benjamin Independent

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

What's the difference between "power_on" and "Reset"

SuggestedRemedy

Replace both of these with "BEGIN", using the definition from 57.3.1.2

Add a "BEGIN" global entry to the "CARRIER_SENSE_OFF" state
Replace the "power_on" and "Reset" global entries with a "BEGIN" global entry

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.1.3.2** *P* **328** *L* **9** # **630**
Brown, Benjamin Independent

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

Variables out of order

SuggestedRemedy

Alphabetize the variable list

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.1.3.3** *P* **328** *L* **53** # **635**
Brown, Benjamin Independent

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

Why is the rate_matching_timer longer than 960 ns? Is it to allow time for CRS to be synchronized across the MII (4 additional MII clock periods)?

SuggestedRemedy

I think I understand why you're doing this but it would be useful to describe this to the casual observer.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.1.3.4** *P* **329** *L* **29** # **633**
Brown, Benjamin Independent

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

Note means nothing

SuggestedRemedy

Remove the note since it doesn't tell the user anything

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.1** *P* **329** *L* **54** # **471**
Cravens, George Mindspeed

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

PAF_enable is not used to indicate that aggregation is not permitted, only if it is active. PAF_available is used to indicate if aggregation is permitted.

SuggestedRemedy

Change "permitted" in line 54 to "active".

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.3** *P* **332** *L* **38** # **472**
Cravens, George Mindspeed

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

Insert cross reference to PCS_link_state since this is the first time it is mentioned, and it is not explained until later in the clause.

SuggestedRemedy

Insert cross reference to 61.2.3.1 after PCS_link_state the first time it is used.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.3** *P* **332** *L* **48** # **636**
Brown, Benjamin Independent

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

There is no description of putting fragments back together

SuggestedRemedy

While it can be assumed that fragments are put back in order based on the sequence number, it would be useful to spell this out. It isn't even mentioned anywhere that there is only 1 sequence for all the PMIs, not 1 per PMI. After several readings, I think I figured that must be the way it is done but making it a little clearer would be very helpful to the first time reader.

Consider adding the following sentence to bullet c): "There is a single sequence number stream for each aggregation, not one per PMI. It is this sequence number stream that the receiver uses for fragment reassembly."

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.4.3** *P* **333** *L* **30** # **917**
Schneiderheinze, Burkart Infineon

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

change variable name from "allActiveQueuesNonEmpty" to "allQueuesNonEmpty". anyQueueNonEmpty and oneQueueNonEmpty do also only refer to active queues and do not have an "active" in their variable name.

SuggestedRemedy

Change variable name here and twice in the state diagram.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.4.3** *P* **333** *L* **45** # **918**
Schneiderheinze, Burkart Infineon

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

definition of noFragmentProcessed is not specific enough.

SuggestedRemedy

Add after "bit times": "at the bit rate of the PMD associated with that queue. Each fragment processed restarts all per-queue timers"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.4.3** *P* **333** *L* **51** # **473**
Cravens, George Mindspeed

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

Lonely quote at the end of the sentence.

SuggestedRemedy

Delete quote after processed.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.4.3** *P* **333** *L* **52** # **637**
Brown, Benjamin Independent

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

Unused variable

SuggestedRemedy

Remove maxDifferentialDelay variable as it is not used in the state diagrams.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.4.3** *P* **333** *L* **54** # **919**
Schneiderheinze, Burkart Infineon

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

"expressed in bit times of fastest link" conflicts with page 333 line 13 " ... has been non-empty for maxDifferentialDelay bit times at the bit rate of the PMD associated with that queue.

SuggestedRemedy

remove "expressed in bit times of fastest link"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.4.3** *P* **334** *L* **30** # **920**
Schneiderheinze, Burkart Infineon

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

State "ERROR_HANDLING". Add cross reference to 61.2.2.7.2.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.4.3** *P* **334** *L* **37** # **922**
Schneiderheinze, Burkart Infineon

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

"Buffer Overflow" can easily be misunderstood.

SuggestedRemedy

Change to "Frame length overflow". The same applies to the text page 335 line 8: change "overflow" to "frame length overflow".

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.4.3** *P* **334** *L* **38** # **921**
Schneiderheinze, Burkart Infineon

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

State "FRAGMENT_ERROR". Add cross reference to 61.2.2.7.3.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.5** *P* **335** *L* **44** # **923**
Schneiderheinze, Burkart Infineon

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

"Note that a speed ratio of 4 may only be used if the latency is controlled to meet the restriction (a)." is misleading, as the definition of maxDifferentialDelay to 15000 bit times precludes a maxSpeedRatio of 4.
Following the definition of differential latency on page 335 line 24ff it can be calculated exactly:
Slow link: Speed X, maxFragmentSize 512 octetts = 4096 bits.
Fast link: Speed 4 times X, allows in the same time transmission of 16384 bits. This contradicts to restriction a) (line 42).
No other variables contribute to this result.
With this definition, maxSpeedRatio has to be set to 3.66

SuggestedRemedy

set maxSpeedRatio to 3.66, or
set maxDifferentialDelay to 16384, or
use a different definition of maxDifferentialDelay.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.5** *P* **335** *L* **44** # **890**
Schneiderheinze, Burkart Infineon

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

there exists a variable for maxspeedratio

SuggestedRemedy

replace 4 with maxspeedratio

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.6** *P* **336** *L* **22** # **924**
Schneiderheinze, Burkart Infineon

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

using 14 bit, maxSequenceNumber is not 2^^14, but 2^^14 - 1.

SuggestedRemedy

Change accordingly. This change requires adding an "+1" in the split-horizon-calculations (page 333 line 4, page 337 line 16).

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.7** *P* **336** *L* **40** # **891**
Schneiderheinze, Burkart Infineon

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

sending of garbage frame: contradiction to chapter 61.2.2.7.2 where 2 rules in case of errors are specified

SuggestedRemedy

add that also part of the frame with assertion of error signal can be sent

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.8.3** *P* **338** *L* **27** # **468**
Cravens, George Mindspeed

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

The PAF Enable bit is Write/Read only on the CO-subtype device.

SuggestedRemedy

Add the following to the sentence ending on line 28:

"on the CO-subtype device, but still read-only on the CPE-subtype device."

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.8.3** *P* **338** *L* **34** # **639**
Brown, Benjamin Independent

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

missing word

SuggestedRemedy

Replace "The PAF_enable" with "Additionally, the PAF_enable"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.8.3** *P* **339** *L* **12** # **470**
Cravens, George Mindspeed

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

remote_read_data_bus is missing the underscore before bus in six places.

SuggestedRemedy

Change "remote_read_data bus" to "remote_read_data_bus" in lines 12, 22, 28, 31, 38, and 41 to match the name defined in Table 61-9 (pg. 341, line 33).

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.8.3** *P* **339** *L* **15** # **925**
Schneiderheinze, Burkart Infineon

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

Wrong cross reference.

SuggestedRemedy

change to 45.2.1.13.1.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.8.3** *P* **339** *L* **16** # **141**
Kimpe, Marc Adtran

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

This comment should be read in conjunction with the example operation shown in 61.A.2 (p559/ line 28). It is assumed that the -O end writes the PMI_Discovery_register of an -R port. If the -R device is multi-port, it propagates the content of that register to any other ports that can be aggregated. The -O end then reads the other -R ports and checks whether its address was propagated. If it finds its address on other ports, those ports can be aggregated. This is fine and will work but is time consuming. Assuming that we have a 32-port -O device talking to 32 separate -R devices, there will be 32 write operations from the -O device and 31! read operations. Most of the read operations can be done in parallel, the write operations must be done sequentially. This means that 32 PHYs would require 32 sequential G.hs exchanges. G.hs Rather than have the -O end write its address, how about having each -R PCS entity write a unique address in the -R discovery register. The -O end would do 32 read in parallel. Any addresses that are similar can be aggregated together. The total time for 32 separate PHYs would be a single G.hs handshake.

SuggestedRemedy

Change the discovery operation to allow the -R end to write a unique discovery PMI register address for each -R port that can be aggregated. Update the examples in 61-A.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.8.3** *P* **339** *L* **21** # **640**
Brown, Benjamin Independent

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

Can't restart a list within a single subclause - too difficult to refer to which bullet list item...

SuggestedRemedy

Rather than restarting this list, continue counting with d), e), f) & g)

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.2.8.3** *P* **339** *L* **4** # **469**

Cravens, George — Mindspeed

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

insert missing "and".

SuggestedRemedy

Change sentence to read: (the "and" is inserted after "Clause 45,")

For CPE-subtype devices the register may be read locally through Clause 45, and reads and writes shall be allowed from remote devices via the remote access signals passed across the ã-interface from the PMA (see 61.2.3.1).

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3** *P* **340** *L* **17** # **641**

Brown, Benjamin — Independent

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

Add wording

SuggestedRemedy

Replace "function of the PAF." with "existence of the PAF. Also, the term PAF is used to represent the superior sublayer to the TC, regardless of whether the PAF actually exists."

Substitute the word function for the word sublayer in the sentence above if my comment to call the PAF a sublayer is rejected.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.1** *P* **340** *L* **52** # **926**

Schneiderheinze, Burkart — Infineon

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

wrong signal name: not Tx_Avble, but Tx_Avbl.

SuggestedRemedy

Change 3 times in this paragraph and 4 times on page 351 and 352.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.1** *P* **340** *L* **52** # **642**

Brown, Benjamin — Independent

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

change wording

SuggestedRemedy

Replace the first sentence with the following: "The PAF shall assert Tx_Avble when an entire data fragment is available for transmission, and deasserted when there are no data fragments to transmit.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.1** *P* **341** *L* **13** # **826**

Tom Mathey — Independent

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

The definition of signal PCS_link_state is incorrect. ALL other clauses for ALL other speeds have PCS_link_state defined as the receiver is synchronized with no mention of receipt of fault signal from link partner.

SuggestedRemedy

Remove text referring to remote_TC_out_of_sync.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.1** *P* **341** *L* **18** # **827**

Tom Mathey Independent

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

The definition of "TC" is very specific as given in 61.2.3, and applies ONLY to fragments or data frames for 64/65-octet encapsulation. While one end of the loop agg signals does exist in the PAF, the other end certainly does not exist in the TC. The other end seems to exist in the NPAR / SPAR register layer.

In addition, why are the loop agg signals given a description on how to transport from PAF to NPAR / SPAR, but NO OTHER signals are given such description. As the NPAR / SPAR are described in octets, why are the PAF signals described as a 48 bit bus.

The description of loop agg signals is unclear. If signals remain in table, then a timing diagram is necessary.

SuggestedRemedy

In column Direction, change from TC to NPAR / SPAR.
Remove all of the loop agg signals from table, else:
Provide timing diagram,
Provide description on how to transport ALL of the OTHER signals,
Provide table to map signals between Clause 46, Clause 61 signal name, NPAR / SPAR register/bit to ensure that all signals are included.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.2.2** *P* **342** *L* **41** # **643**

Brown, Benjamin Independent

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

wording usage

SuggestedRemedy

Replace "is comprised of" with "comprises"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3** *P* **343** *L* **24** # **892**

Schneiderheinze, Burkart Infineon

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

CRC checking is also part of the TC function

SuggestedRemedy

add the CRC check to the TC functions

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.1** *P* **344** *L* **27** # **644**

Brown, Benjamin Independent

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

According to the description in 61.2.3, the description here is unnecessary

SuggestedRemedy

Replace "a data frame (either a MAC Frame or a PMI aggregation fragment)," with "a fragment,"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **1** # **927**

Schneiderheinze, Burkart Infineon

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

Change TC_synchronized to PCS_link_state.

SuggestedRemedy

Apply change 5 times in this paragraph.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **2** # **893**

Schneiderheinze, Burkart Infineon

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

wrong cross ref

SuggestedRemedy

update cross ref to 61.2.3.3.6

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **36** # **928**

Schneiderheinze, Burkart Infineon

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

"The end of a TC fragment is always marked with an End of Frame codeword": there is a second possibility: a "start of frame while transmitting" codeword.

SuggestedRemedy

add: "or start of frame while transmitting".

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **38** # **92**

Beck, Michael — Alcatel Bell n.v.

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

Typo.

SuggestedRemedy

Replace "singal" with "signal".

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **40** # **929**

Schneiderheinze, Burkart — Infineon

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

enumeration b) has to be subdivided:
when inside a fragment only Ck is allowed, when outside a fragment only Y, Z, S are allowed.

SuggestedRemedy

change accordingly

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **43** # **930**

Schneiderheinze, Burkart — Infineon

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

Define exactly, when RxErr has to be set in correspondance to TC_coding_error signal. According to page 336 line 50, every TC_coding_error would cause an RxErr. But in case of a wrong sync octett during "all idle" codewords it makes no sense to setthe RxErr signal on the Gamma-Interface.

SuggestedRemedy

Add exact definition. If necessary, adapt wording in page 336 line 50.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.1** *P* **345** *L* **44** # **931**

Schneiderheinze, Burkart — Infineon

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

Remote_TC_out_of_sync: This signal may stuck at 0 even if remote TC is out of sync, namely when local TC is out of sync and the local TC receive statemachine has no chance to detect the Y symbol. This does not seem to be a problem, as PCS_link_state is a logical OR of both signals. But a note with a hint to this possibility seems to be appropriate.

SuggestedRemedy

Add a note as described.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.2** *P* **347** *L* **10** # **645**

Brown, Benjamin — Independent

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

spelling

SuggestedRemedy

Replace "Initiatizing" with "Initializing"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.3** *P* **347** *L* **40** # **646**

Brown, Benjamin — Independent

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

List entry b0 is very confusing

SuggestedRemedy

The opening paragraph to this subclause gives good description of where the TC-CRC is used. This bullet is confusing because a fragment doesn't necessarily end with an ethernet FCS. The parenthetical example is completely unnecessary given the description above. Remove it.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.3** *P* **347** *L* **52** # **74**
Beck, Michael Alcatel Bell n.v.

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

The word "NOTE" is redundant, as this is obviously a footnote.

SuggestedRemedy

Delete the word "NOTE" and the m-dash.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.4** *P* **349** *L* **3** # **474**
Cravens, George Mindspeed

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

Figure 61-16. The diagram might cause some confusion since if it is assumed to be showing transmit (implied by the comment that a1 and b8 are transmitted first), then the bytes are in reverse order.

Byte order should show: Sync, Ck, Data, FCS1-4, then TC-CRC1-2, Sync, Ck, ...

If the diagram is showing receive, with time flowing down the page (i.e. the oldest/first received byte is at the top of the figure), then everything's fine.

If a note is added that the example shows a receive stream, then everything's clear.

SuggestedRemedy

Add a note saying that the byte stream is shown on the receive end of a link.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.5** *P* **348** *L* **29** # **647**
Brown, Benjamin Independent

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

missing comma

SuggestedRemedy

Replace "Firstly the" with "Firstly, the"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.5** *P* **348** *L* **36** # **648**
Brown, Benjamin Independent

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

The description of 4 Unequivocal Syncs is a little vague

SuggestedRemedy

I don't understand what it means to have 4 consecutive syncs without an alternative sequence of more than 2 syncs during the same period. Clause 49 made it very explicit that you selected an alignment then followed it long enough to find out if the sync bits kept coming. If not, you searched for another alignment. While implementations could be efficient by running these in parallel, the description was very clear and straightforward. I highly recommend that you choose a similar approach.

This shouldn't require a lot of work. Make it clear that a single octet in a 65 octet barrel shifter is chosen as the sync octet. If 4 syncs are found in a row then you have sync. If not, increment the barrel shifter to the next octet then check it for alignment. Anytime you lose sync, increment the barrel shifter to the next octet.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.5** *P* **348** *L* **44** # **475**
Cravens, George Mindspeed

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

Unneeded commans

SuggestedRemedy

Remove commas after FreeWheelSyncTrue and FreeWheelSyncFalse.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.5** *P* **350** *L* **1** # **77**
Beck, Michael Alcatel Bell n.v.

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

In Figure 61-17, many exit conditions are written in an unconventional way. Also, the "else" transition in state LOOKING is redundant.

SuggestedRemedy

Replace exit conditions by proper expressions consisting of well-defined variables and signals.
Remove "else" transition from state LOOKING.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.6** *P* **348** *L* **52** # **650**

Brown, Benjamin — Independent

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

wrong word

SuggestedRemedy

replace "block in data" with "block of data"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **351** *L* **1** # **78**

Beck, Michael — Alcatel Bell n.v.

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

In the state diagram in Figure 61-18, state START_FRAGMENT seems to contain two simultaneous actions, transmitSync() and transmitS(), which should really be executed sequentially.

SuggestedRemedy

Split state START_FRAGMENT into two states:
- SYNC_START, containing statement "IF k=0 THEN transmitSync()";
- START_FRAGMENT, containing statements "transmitS()" and "k := (k+1) mod 64".
Transition from the new state SYNC_START to the new state START_FRAGMENT is unconditional.
The new state SYNC_START gets the entry conditions currently associated with START_FRAGMENT.
The new state START_FRAGMENT gets the exit conditions currently associated with START_FRAGMENT.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **351** *L* **43** # **932**

Schneiderheinze, Burkart — Infineon

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

Loop variable is used for two different purposes:
1) for generating the Y symbol (which should depend on TC_synchronized) and
2) for staying in this idle loop (which should depend on PCS_link_state).

SuggestedRemedy

Split "loop" variable into two variables as described.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **352** *L* **28** # **79**

Beck, Michael — Alcatel Bell n.v.

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

The function transmitData() transmits all data in the FIFO, i.e. up to 64 octets. It can take more than 1 Osync_t clock to complete.

SuggestedRemedy

Add "per octet of data transmitted" before "to complete".

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **352** *L* **30** # **654**

Brown, Benjamin — Independent

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

missing words

SuggestedRemedy

replace "signal" with "signal for each data octet that is transmitted"
Remove "to complete"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **352** *L* **30** # **933**

Schneiderheinze, Burkart — Infineon

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

The function transmitData() does not take one cycle to complete, but "as many as octetts of data are contained".

SuggestedRemedy

change accordingly

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **352** *L* **54** # **934**

Schneiderheinze, Burkart Infineon

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

"The state machine returns to its initial state any time the PCS_link_state variable becomes FALSE":
1) it does not return immediately, but finishes the currenty transmitted fragment first.
2) it does not return to ist initial state IDLE, but to SYNC_IDLE.

SuggestedRemedy

1) add: ", when transmission of current fragment is finished"
2) change wording accordingly, e.g. "returns to the loop of three idle states". Alternatively, merge this 3 states into one.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **353** *L* **3** # **940**

Schneiderheinze, Burkart Infineon

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

In state END_OF_FRAGMENT:
Valid kmax values are 0 to 63. Position k=1 is used for Ck-value. Therefore the IF-condition has to be changed.
Additionally, k<=k+1 is contained in both branches and can therefore be moved out of the IF-clause.

SuggestedRemedy

Change END_OF_FRAGMENT to:
```
IF (k<kmax+1) THEN
  B<=receiveOctet();
  sendOctetToPAF(B);
ENDIF;
k<=k+1;
```
Change transition conditions to "k>=kmax+1" and "k<kmax+1".

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **353** *L* **3** # **938**

Schneiderheinze, Burkart Infineon

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

Resetting of TC_coding_error is not done properly. Transition from CHECK_SYNC3 to LOSS_OF_SYNC1 leaves this signal set.

SuggestedRemedy

in state CHECK_SYNC3 add:
TC_Coding_error = FALSE;

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **353** *L* **3** # **937**

Schneiderheinze, Burkart Infineon

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

Resetting of remote_TC_out_of_sync is not done properly.

SuggestedRemedy

add remote_TC_out_of_sync = FALSE in state END_OF_FRAGMENT. This state is only reached when a valid Ck is decoded.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **353** *L* **3** # **935**

Schneiderheinze, Burkart Infineon

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

Coding violation detection and "Remote_TC_out_of_sync"-detection are not implemented for e.g. "all idle" frame type

SuggestedRemedy

In state "CHECK_SYNC1", add Coding Violation <= TRUE in the "THEN"-Branch.
From "CHECK_SYNC1" to "COUNT_CODING_VIOL", add a transition with Coding Violation = TRUE condition.
In state "OUT_OF_FRAGMENT", after B <= receiveOctet() and k <= k+1, add:
```
  Coding Violation <= TRUE;
  if k=1 and B=209 THEN
    remote_TC_out_of_sync <= TRUE;
    Coding Violation <= FALSE;
  ENDIF;
  IF B=80 or B=0 THEN
    Coding Violation <= FALSE;
    if k=1 THEN remote_TC_out_of_sync <= FALSE; ENDIF;
  ENDIF;
```
Change transition conditions from OUT_OF_FRAGMENT:
IF Coding Violation = TRUE: Goto "COUNT_CODING_VIOL"
IF Coding Violation = FALSE and B=80 and k<> 65: Goto "START_FRAGMENT"
IF Coding_Violation = FALSE and k=65: Goto CHECK_SYNC1
ELSE: Go back to "OUT_OF_FRAGMENT"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **353** *L* **3** # **939**

Schneiderheinze, Burkart Infineon

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

RxEOP is only mentioned once in the whole state machine, RxSOP never.
Either define both signals completely (set and reset wherever appropriate), or remove this signal in LOSS_OF_SYNC1.

SuggestedRemedy

in state LOSS_OF_SYNC1: remove RxEOP <= TRUE.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **353** *L* **30** # **936**

Schneiderheinze, Burkart Infineon

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

State "DECODE" allows, when entered from CHECK_SYNC2, a transition to OUT_OF_FRAGMENT or START_FRAGMENT. That is forbidden (p. 345, line 36)

SuggestedRemedy

Split DECODE-State into DECODE1 and DECODE2.
In detail:
STATE DECODE1, entered from CHECK_SYNC2:
C <= receiveOctet();
kmax <= decode (C);
k <= 1;
Only two transitions from DECODE1:
IF kmax<64 (i.e. valid Ck): Goto END_OF_FRAGMENT;
ELSE: Goto COUNT_CODING_VIOLATION;
New STATE DECODE2, entered from CHECK_SYNC3:
C <= receiveOctet();
kmax <= decode (C);
k <= 1;
IF C=209 THEN remote_TC_out_of_sync <= TRUE; ENDIF;
IF C=80 or C=0 THEN remote_TC_out_of_sync <= FALSE; ENDIF;
Three transitions from DECODE2:
IF C=0 or C=209: goto OUT_OF_FRAGMENT
IF C=80: goto START_FRAGMENT
IF kmax<64 (i.e. valid Ck): Goto END_OF_FRAGMENT;
ELSE: Goto COUNT_CODING_VIOLATION;

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **354** *L* **13** # **661**

Brown, Benjamin Independent

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

wrong max value for kmax

SuggestedRemedy

According to table 61-12, the max value for k in Ck is 63. Change this value from 64 to 63.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **354** *L* **13** # **941**

Schneiderheinze, Burkart Infineon

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

"A return value between 0 and 64 indicates a valid Ck symbol was read": Only values between 0 and 63 are valid Ck-values.

SuggestedRemedy

Change 64 to 63, also adapt other values:
Y/Z: 65 -> 64
S: 66 -> 65
Violation: >66 -> >65

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **354** *L* **15** # **834**

Tom Mathey Independent

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

My hex to decimal calculator with subtraction has the S symbol when passed thru the Ck decode function as decoded to decimal 64, not decimal 66.

SuggestedRemedy

Please check.
I also believe that the only valid decodes for length are 0 to 63, not 0 to 64.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **354** *L* **36** # **942**
Schneiderheinze, Burkart Infineon

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

Definition of remote_TC_out_of_sync is wrong.

SuggestedRemedy

TRUE and FALSE need to be flipped.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **354** *L* **48** # **662**
Brown, Benjamin Independent

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

wrong clock

SuggestedRemedy

Change "TX_clk (transmit clock)" to "RX_clk (receive clock)"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.3.8** *P* **354** *L* **48** # **943**
Schneiderheinze, Burkart Infineon

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

function sendOctetToPaf() is not clocked by Tx_clk, but by Rx_clk.

SuggestedRemedy

change "Tx_clk (transmit clock)" to "Rx_clk (receive clock)"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.3.4** *P* **355** *L* **22** # **894**
Schneiderheinze, Burkart Infineon

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

meaning of 'infer a collision' not clear. Does it mean that the MAC sends a jam sequence if both signals are active?

SuggestedRemedy

1. add a clarification note (i.e. sending a jam sequence)
2. add an additional note that crs_and_tx_en_infer_col is only relevant if tx_rx_simultaneously is not asserted

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.33.38** *P* **351** *L* **1** # **830**
Tom Mathey Independent

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

The xDSL document G.993.1-2001-Final.pdf, p39, Table H-1/G.993.1 - PTM -TC: ã-interface Data, Syncronization and Control Flows Signal Summary shows several signals on the transmit path which should be in text and Figure 61-18: Tx_Avbl, Tx_EoP, Tx_SoP, TX_Err. The Tx_SoP, TX_Err signal are missing in text and in Figure 61-18.

SuggestedRemedy

Add Tx_SoP, TX_Err signals to text and to Figure 61-18.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.2.33.38** *P* **354** *L* **1** # **833**
Tom Mathey Independent

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

The xDSL document G.993.1-2001-Final.pdf, p39, Table H-1/G.993.1 - PTM -TC: ã-interface Data, Syncronization and Control Flows Signal Summary shows several signals on the receive path which should be in text and Figure 61-19: Rx_Avbl, Rx_SoP, Rx_EoP, RX_Err. The Rx_Avbl, Rx_SoP signals are missing in text and in Figure 61-19.

SuggestedRemedy

Add Rx_Avbl, Rx_SoP signals to text and to Figure 61-19.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.1** *P* **356** *L* **38** # **85**
Beck, Michael Alcatel Bell n.v.

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

The sentence "At the time of publication, G.994.1 Revision 3 is in force." is inaccurate.

SuggestedRemedy

Replace "At the time of publication, G.994.1 Revision 3 is in force." with "At the time of publication, G.994.1 Revision 3 as amended by Amendment 1 is in force."

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.1.1** *P* **356** *L* **43** # **835**

Tom Mathey Independent

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

While the port configuration is expected to be set via manual method (such as management variable, a fixed trace, or a jumper on a printed circuit board), if two ends of the link are both set to the same sub-type (both as _R, or both as _O) per 3.x.15 in table 45-72, then the handshake will fail but without any information back to the user as to why.

SuggestedRemedy

To NPAR and SPAR, add ability to report the _R and _O setting of the link partner. Provide to clause 45 register and to clause 30 management access.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.12** *P* **400** *L* **19** # **804**

Palm, Stephen Broadcom

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

What is G.SHDSL?

SuggestedRemedy

Delete G.shdsl or replace with 2BASE-TL

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.12.1** *P* **400** *L* **34** # **164**

Edward Beili Actelis Networks Inc.

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

Current text proposes use of 2 consecutive CLR->CL->ACK sequences in case of Discovery and use of MR->etc. sequences for the link setup. This makes the RT unnecessary complicated, having to know and tracking the initialization states (Discovery vs. Setup) and also non G.994.1 compliant (CLR->CL->ACK, CLR->CL->ACK is not legal)

SuggestedRemedy

Make the RT always start with an MR message. For the Discovery replace the CLR->CL->ACK, CLR->CL->ACK sequence with a legal MR->REQ-CLR->CLR->CL->ACK, MR->REQ-CLR->CLR->CL->ACK extended sequence.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.12.1** *P* **401** *L* **1** # **91**

Beck, Michael Alcatel Bell n.v.

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

Typo.

SuggestedRemedy

Replace "relevent" with "relevant".

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.12.2** *P* **402** *L* **12** # **947**

Schneiderheinze, Burkart Infineon

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

wrong command description

SuggestedRemedy

change "write" to "set"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.12.2** *P* **402** *L* **16** # **895**

Schneiderheinze, Burkart Infineon

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

last part of setence beginning with 'set to the value for the PMI_aggregate..' is not correct. Bit 0 only has a binary value

SuggestedRemedy

Remove last part of the sentence and add the following sentence: 'The -R device sets the bit position in the PMI_aggregate_register corresponidng upon which the G.994.1 exchange takes place.' Remove additionally the following sentence beginning with 'The CPE subtype ...' (already covered by new sentence)

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.12.2** *P* **402** *L* **31** # **948**

Schneiderheinze, Burkart Infineon

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

Wrong cross reference.

SuggestedRemedy

change 45-6 to 45-10

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.12.2** *P* **402** *L* **7** # **946**
Schneiderheinze, Burkart Infineon

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

wrong command description

SuggestedRemedy

change "read" to "get"

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.12.3** *P* **402** *L* **32** # **896**
Schneiderheinze, Burkart Infineon

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

origin of signal write_remote_aggregation, write_remote_discovery not clear

SuggestedRemedy

add a cross ref 45.2.1.13 - 45.2.1.15

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.5.1.1** *P* **358** *L* **15** # **86**
Beck, Michael Alcatel Bell n.v.

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

Table 61-13: the carrier set designated as "MCM" in this Table is called "V43" in the latest amended version of G.994.1.

SuggestedRemedy

Replace "MCM" with "V43".

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.5.1.1** *P* **358** *L* **15** # **796**
Palm, Stephen Broadcom

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

Values should be seperated with whitespace instead of semicolons so as to follow the Referenced G.994.1 format

SuggestedRemedy

Values should be seperated with whitespace instead of semicolons

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.8** *P* **359** *L* **24** # **162**
Edward Beili Actelis Networks Inc.

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

The Aggregation and Discovery Handshake messages are defined separately, for each of the Phy types (10P and 2B). I see no reason to split these as they are common to both types. Besides the PMI type may not be set during discovery (e.g. for PMIs supporting both 10P and 2B). Also discovery messages are defined in Information field while they should probably be in Identification field.

SuggestedRemedy

Take them out from separate branches and put under the same common subtree for both types. Define discovery messages in the Identification field.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.8.6.4** *P* **360** *L* **17-18** # **797**
Palm, Stephen Broadcom

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

Section 9.3.4/G.994.1 is completely independent of the modultion (or port) that is to be negotiated. Additionally, the proposed force to zero does not allow non-standard extensions. Finally this will make the IEEE equipment incompatible to G.994.1

SuggestedRemedy

Change to: Paragraph 4: referenced as is.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.8.7** *P* **360** *L* **39** # **84**
Beck, Michael Alcatel Bell n.v.

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

This subclause consists of 38 pages of tables. It breaks the continuity of the document, pushing some very interesting information (61.3.12) way too far back in the Clause.

SuggestedRemedy

Move the content of this subclause to a normative Annex 61B, as shown in the attached pdf. Condense the remaining content of 61.3.2 and 61.3.11 to list only exceptions, in the style of Clauses 62 and 63.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.3.8.7.4** *P* **371** *L* **54** # **457**

Squire, Matt — Hatteras Networks

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

Space between "4" and "."

SuggestedRemedy

Remove it

Proposed Response *Response Status* **O**

Cl **61** *SC* **61.8** *P* **403** *L* **30** # **154**

Edward Beili — Actelis Networks Inc.

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

The suggested PHY label description examples in a) and b) are not accurate and complete.

SuggestedRemedy

Replace a) and b) with the following text:
a) PMA/PMD (sub-)type. A Type (e.g. 10PASS-TS) can be specifed if both -O and -R subtypes are supported. A Sub-type shall be specified (e.g. 10PASS-TS-R) if only a single subtype is supported.
b) PAF capability if supported. The following information shall be provided: Number of MII/PCS ports provided; Max number of PMIs per MII/PCS; Total number of PMIs. For example:
- x8 or 1x8:8 for a single MII port with 8 PMIs
- 2x2:4 for a device with 2 MII ports and 4 PMIs, which can be aggregated up to two PMIs per port.
- 4x4:4 for a device with 4 MII ports, 4 PMIs and ability to aggregate up to 4 PMIs per port.

Proposed Response *Response Status* **O**

Cl **61** *SC* **61-11** *P* **334** *L* **20** # **453**

Squire, Matt — Hatteras Networks

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

This is about the transitions from WAIT_FOR_NEXT_FRAGMENT to ERROR_HANDLING.

It seems like
(a) we have two ways to say that we haven't processed a fragment: noFragmentProcessed and (nextFragmentSequenceNumber != epxectedFragmentSequenceNumber) where we could do with one or the other

(b) We could combine the latter two conditions of that transition into:

(noFragmentProcessed * (oneQueueNonEmpty + allActiveQueuesNonEmpty))

SuggestedRemedy

Clarify the transition as explained above.

Proposed Response *Response Status* **O**

Cl **61** *SC* **62.2.2.4.3** *P* **333** *L* **29** # **653**

Brown, Benjamin — Independent

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

single list of variables, functions, etc.

SuggestedRemedy

Separate this list by constant, variable, function, etc. See 57.3.1 for an example.

Same comment applies to 61.2.3.3.8 - also, the list of variables, functions, etc., should precede the state diagrams.

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-1** *P* **319** *L* **23** # **622**

Brown, Benjamin — Independent

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

It is not obvious that the 2BASE-TL and the 10PASS-TS PCS is the same thing based on this figure, given that one has a reference to G.993.1 and the other has a sublayer blowout

SuggestedRemedy

Make both sides of this figure look the same. Also, see my comment on making PMI Aggregation a sublayer.

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-11** *P* **334** *L* **5** # **638**

Brown, Benjamin Independent

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

Missing functions

SuggestedRemedy

There are several functions called in this state diagram that aren't described. They include:
* smallest fragmentSequenceNumber
* errorDetection (though this is described in 61.2.2.7 - it should be referenced from within a function description)
* Buffer Overflow
* Unexpected Start of Packet
* Unexpected End of Packet

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-17** *P* **350** *L* **1** # **649**

Brown, Benjamin Independent

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

BEGIN isn't defined for this state diagram
No functions for this state diagram
A counter would be a useful addition
Hysteresis would even be a better one

SuggestedRemedy

Add a BEGIN variable definition

The bullet list in 61.2.3.3.5 should be part of a list of functions

Counter:
Remove "4th missed sync"
Add a counter (n)
Set n <= 0 in SYNCED state
Increment n on every entry to both "Freewheel" states
Change transition from FREEWHEEL_SYNC_TRUE to FREEWHEEL_SYNC_TRUE to missed_sync * n<3
Change transition from FREEWHEEL_SYNC_TRUE to FREEWHEEL_SYNC_FALSE to missed_sync * n=3
Change transition from FREEWHEEL_SYNC_FALSE to FREEWHEEL_SYNC_FALSE to missed_sync * n<7
Change transition from FREEWHEEL_SYNC_FALSE to LOOKING to missed_sync * n=7

Would it be useful to add some hysteresis? It takes 8 bad syncs to lose lock but only 1 to gain it again. If one out of 8 is good, it would take a long time to lose sync. Wouldn't you want as many good as bad to get you back to synced?

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-17** *P* **350** *L* **17** # **829**

Tom Mathey Independent

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

While the text and usage of TC_synchronized has been in use for many drafts, it is actually the proper and complete definition of PCS_link_state.

SuggestedRemedy

Replace all usage of TC_synchronized with PCS_link_state.

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-17** *P* **350** *L* **39** # **476**

Cravens, George Mindspeed

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

As shown, the Sync detect state machine will regain sync after only one expected sync when in the Freewheen_Sync_False state. Since it takes four unequivocal syncs to enter the Synced state from the looking state (and transition TC_Synchronized from false to true), the same condition must be required to enter Synced from Freeweel_Sync_False.

In fact, the Freewheel_Sync_False state could simply be deleted, and the Freewheel_Sync_True state transition back to looking since the only difference between the Freewheel_Sync_False state and the Looking state is the ease of returning to Synced.

As it stands, once the Synced state is achieved, a sequence of one good sync in five will toggle the TC_Synchronized bit every five codewords, and one good sync in forever is all it takes to return the machine to the Synced state.

SuggestedRemedy

Delete the FREEWHEEL_SYNC_FALSE state and change the "4th Missed Sync" transition from the FREEWHEEL_SYNC_TRUE state to go back to the LOOKING state.

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-18** *P* **351** *L* **1** # **651**

Brown, Benjamin Independent

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

Changes below

SuggestedRemedy

Add a new function (similar to an_enableCHANGE from Clause 37) - PCS_link_stateCHANGE This function monitors the PCS_link_state variable for a state change. The function is set to TRUE on state change detection. Values : TRUE; A PCS_link_state variable state change has been detected. FALSE; A PCS_link_state variable state change has not been detected (default). NOTE — PCS_link_stateCHANGE is set by this function definition; it is not set explicitly in the state diagrams. PCS_link_stateCHANGE evaluates to its default value upon state entry.
Add a new state INIT
Global entry into INIT: PCS_link_stateCHANGE=TRUE * PCS_link_state=FALSE
Within state INIT: k <= 0, loop <= TRUE
UCT transition from INIT to SYNC_IDLE

Remove the 3 sentences at the bottom of page 352

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-18** *P* **351** *L* **1** # **652**

Brown, Benjamin Independent

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

pullOctet() - can data be pulled across this interface in 0 time? Does any delay here affect the alpha interface?

SuggestedRemedy

I can't find anything in the text (no, I didn't read the ITU references) that discusses this but it seems funny that you can loop 65 times pulling data across this interface without any reference to time then call the transmitData function that is very particular with respect to time.

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-18** *P* **351** *L* **1** # **831**

Tom Mathey Independent

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

Item 1: State diagram and text is missing the ability to respond to a 3.0.15 reset signal via management.
Item 2: Text on page 352 line 54 of "The state machine returns to its initial state any time the PCS_link_state variable becomes FALSE." means that the state machine is stuck in the IDLE state. A stuck in the idle state means that sync bytes and remote fault code 0xD1 can not be sent.
Item 3: When the receive path is receiving the remote fault code 0xD1, it is required to block the transmit path and send only idles (and not remote fault code 0xD1).
Item 4: From state UPDATE_K the exit "ELSE" allows or forces a transition to state START_FRAGMENT (and thus transmit data) when signal loop = FALSE, even if signal Tx_Avail = FALSE. Note that the transmit path signal "loop" says nothing about the receive path getting a sequence of sync followed by remote fault.
Item 5: In state SYNC_IDLE, term Tx_sync'd from figure 61-17 is misnamed. To match ALL of the other physical layers within the base standard, signal term Tx_sync'd needs to be named PCS_link_status.
Item 6: From state IDLE TO DATA_1, the exit to ABORT_FRAG starts sending the remote fault sequence. This seems like a very strange sequence to send at the end of a frame.
Item 7: From state START_FRAGMENT:
a. the exit condition for k= 0 performs no additional actions that are unique to k=0 as all necessary actions specific to k=0 are performed within the state.
b. Then the actions performed in the 3 states "PULL_PAF_DATA_2, SYNC_DATA, and ALL_DATA" are identical to the actions in states "PULL_PAF_DATA_1, IDLE TO DATA_1, and IDLE TO DATA 2".
Item 8: transition from state PULL_PAF_DATA_2 to SYNC_END via TxEOP *k<64 results in a transmit of sync byte at wrong time.
Item 9: States SYNC_END and END_FRAG capture the sequence of sync byte and length byte. State END_DATA then sends the sequence to the alpha-beta interface. There are now k octets of data left in the fifo buffer above the gamma interface. There is no repeated call to function pullOctets for k counts to transfer data on to lower layer.
Item 10: From state END_DATA the exit "ELSE" allows or forces a transition to state START_FRAGMENT (and thus transmit data) when signalPCS_LINK_STATE = TRUE, even if signal Tx_Avail = FALSE.

SuggestedRemedy

Item 1: Add text to support a MMD wacking of state machine.
Item 2: Harmonize.
Item 3: Show the two independent conditions of:
a. transmit path blocks MAC frames and only transmits idles when receive path is receiving remote fault sequence sync, code 0xD1, idles.
b. transmit path blocks MAC frames and only transmits remote fault sequence sync, code 0xD1, idles when receive path signal PCS_link_state = FALSE.
Item 4: From state UPDATE_K:
a. exit "ELSE" should be "(signal Tx_Avail = TRUE) and (PCS_link_status = TRUE) and (receive path not getting sequence sync followed by remote fault code 0xD1). Additional terms are needed to support gamma interface signal TxSOP.
b. Exit to state SYNC_IDLE does not need to include term Tx_Avail since tern loop = TRUE overrides completely.

Item 5: rename Tx_sync'd to PCS_link_status.
Item 6: remove state ABORT_FRAG, RESET_K.
Item 7: Combine states "PULL_PAF_DATA_2, SYNC_DATA, and ALL_DATA" with states "PULL_PAF_DATA_1, IDLE TO DATA_1, and IDLE TO DATA 2". Transition from PULL_PAF_DATA_2 to SYNC_END does what transition from IDLE TO DATA_1 to SYNC_END tried to do.
Item 8: Suggest terms TxEOP= FALSE *k=64 for exit to SYNC_DATA and TxEOP= TRUE *k=64 for exit to SYNC_ END.
Item 9: Send remaining octets to alpha-beta.
Item 10: suggest "ELSE" should be "(signal Tx_Avail = TRUE) and (PCS_link_status = TRUE)) and (receive path not getting sequence sync followed by remote fault code 0xD1). Additional terms are needed to support gamma interface signal TxSOP. Additional exit is needed to support (receive path is getting sequence sync followed by remote fault code 0xD1).

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-19** *P* **353** *L* **1** # **657**

Brown, Benjamin Independent

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

The protocol described in Table 61-11 doesn't support S instead of C from what I can tell

SuggestedRemedy

Explain in the previous sections how this can work or get rid of the transition from DECODE state when kmax=66 or show that when kmax=66, an error is generated on the previous packet.

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-19** *P* **353** *L* **1** # **656**

Brown, Benjamin Independent

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

Shared transitions

SuggestedRemedy

Transition arrows should never be shared unless the transition conditions and destinations are identical. This state diagram has several. Fix them.

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-19** *P* **353** *L* **1** # **659**

Brown, Benjamin Independent

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

Don't assign conditions to false

SuggestedRemedy

The following variables should never be assigned to the value FALSE:
expectedSync
missedSync

Instead, they should have a "DEFAULT" value of FALSE, which converts them back to FALSE on every state transition where they are not assigned

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-19** *P* **353** *L* **1** # **660**

Brown, Benjamin Independent

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

Startup conditions

SuggestedRemedy

Add a global input to LOSS_OF_SYNC2 controlled by "Reset"

Add a new function (similar to an_enableCHANGE from Clause 37) - TC_synchronizedCHANGE This function monitors the TC_synchronized variable for a state change. The function is set to TRUE on state change detection. Values : TRUE; A TC_synchronized variable state change has been detected. FALSE; A TC_synchronized variable state change has not been detected (default). NOTE — TC_synchronizedCHANGE is set by this function definition; it is not set explicitly in the state diagrams. TC_synchronizedCHANGE evaluates to its default value upon state entry. Add a global input to OUT_OF_FRAGMENT controlled by TC_synchronizedCHANGE=TRUE * TC_synchronized=TRUE

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-19** *P* **353** *L* **1** # **832**

Tom Mathey Independent

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

Item 1: State diagram and text is missing the ability to respond to a 3.0.15 reset signal via management.
Item 2: State COUNT_CODING_VIOL captures only one of the three types of errors listed on page 35, lines 38 to 42.
Item 3: State START_FRAG is missing exit condition.
Item 4: The largest number of payload bytes which can exist in the ending sequence of sync = xF0, sync byte = length is a length value of 0 to 63. This is Kmax, the decoded value of a Ck symbol. However, exit conditions from state DECODE have Kmax as 65 and 66. Decimal 65 is the decoded value for remote fault. However, decimal 66 is an illegal value.
Item 5: State END_OF_FRAG attempts to handle all sequences of payload, sync = xF0, sync byte = length, remaining payload. At least two sequences are not allowed for:
a. sequence payload, sync = xF0, sync byte = 0
b. sequence payload, sync = xF0, sync byte =remote fault code
Once the bytes are sent up, the signal RxEOP is not asserted, and signal RXAvail is not deasserted.

SuggestedRemedy

Item 1: Add text and change state diagram to support a MMD wacking of state machine.
Item 2: Add missing condition for setting and clearing signal TX_coding_error
Item 3: Add UCT as exit conditon.
Item 4: Change values to correct number. All exits from state DECODE have to at some point mark payload with end of frame, else bytes are left in a fifo/buffer and concatenated with next set of payload bytes.
Item 5: Correct to allow for all values of sync byte lengths. Note that a length can be followed by start of frame for the next fragment.

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-19** *P* **353** *L* **1** # **655**

Brown, Benjamin Independent

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

The B variable

SuggestedRemedy

Since B is of type octet, it would be much clearer to read this state diagram if all comparisons are in hexadecimal, rather than decimal. Replace all comparisons with their hexadecimal equivalents.

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-19** *P* **353** *L* **47** # **658**

Brown, Benjamin Independent

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

Transitions are wrong. They don't provide the correct counts, or at least they didn't using the examples that I chose.

SuggestedRemedy

Replace the transitions from END_OF_FRAGMENT state:
k >= kmax changes to k > kmax
k < kmax changes to k <= kmax

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-8** *P* **328** *L* **31** # **634**

Brown, Benjamin Independent

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

Remove IPG_Done

SuggestedRemedy

Add a state below "SEND_FRAME_TO_MAC_1" called "WAIT_FOR_IPG"
Change transition out of "SEND_FRAME_TO_MAC_1" to be RX_DV=FALSE and have the transition move to the new "WAIT_FOR_IPG" state
Inside the "WAIT_FOR_IPG" state, add the term: start ipg_timer
The transition out of "WAIT_FOR_IPG" state is: ipg_timer_done = TRUE
This transition takes you to "IDLE"
Don't share the transition to "IDLE" from "SEND_FRAME_TO_MAC_2" with this one since the conditions are not identical.
Remove IPG_Done from 61.2.1.3.2
Add ipg_timer to 61.2.1.3.3 with a description of: Timer used to generate a gap between receive packets across the MII. Duration: 960 ns, tolerance +/- 100 ppm

Proposed Response *Response Status* **O**

Cl **61** *SC* **Figure 61-8** *P* **331** *L* **14** # **632**
Brown, Benjamin Independent

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

Need a "transferFrame" function

SuggestedRemedy

In "SEND_FRAME_TO_MAC_1" and "SEND_FRAME_TO_MAC_2" states, add a call to the "transferFrame" function
Add a subclause between 61.2.1.3.3 and 61.2.1.3.4 for functions.
Add a "transferFrame" function to this new subclause that describes sending the frame to the MAC across the MII "according to the MII protocol as described in 22.2". Describe adding the preamble and SFD if this is the appropriate place for it.

Proposed Response *Response Status* **O**

Cl **61** *SC* **General** *P* **318** *L* # **558**
Grow, Robert Intel

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

The management functions of the EFM copper are not specified correctly. Many functions are not defined in Clause 30, and consequently will not be accessable through OAM, as OAM functions are defined in terms of the Clause 30 MIB. Ethernet SNMP functions are also traditionally defined in terms of Clause 30 and not directly into any specific interface type.

SuggestedRemedy

Rewrite the clause and supporting clauses consistent with 802.3 specification approaches. State diagrams reference register definitions, where relevant. Clause 30 references register bits and state diagrams. OAM points to the Clause 30 MIB, not internal functions of Clause 61. If something is expected to be in an SNMP MIB, it should have the capability specified in Clause 30.

Proposed Response *Response Status* **O**

Cl **61** *SC* **Table 61-108** *P* **386** *L* **16** # **944**
Schneiderheinze, Burkart Infineon

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

Table 61-108 is between 61-94 and 61-95.

SuggestedRemedy

move to the correct place.

Proposed Response *Response Status* **O**

Cl **61** *SC* **Table 61-12** *P* **346** *L* **36** # **828**
Tom Mathey Independent

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

P802.3ae Clause 1.2.5 line 27 has defined the method used for hex notation as 0x. This now part of the base standard.

SuggestedRemedy

Scrub entire document and change all hex numbers to read as "0x"

Proposed Response *Response Status* **O**

Cl **61** *SC* **Table 61-137** *P* **397** *L* **26** # **945**
Schneiderheinze, Burkart Infineon

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

three colums undefined

SuggestedRemedy

add 3 times "x"

Proposed Response *Response Status* **O**

Cl **61** *SC* **Table 61-143** *P* **399** *L* **13-14** # **803**
Palm, Stephen Broadcom

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

See comment for Table 61-23

SuggestedRemedy

Table 61-143: "Silence period length (bits 6-1 x 10s, from 10 seconds to 10.5 minutes (630 seconds))"

Proposed Response *Response Status* **O**

Cl **61** *SC* **Table 61-20** *P* **361** *L* # **799**
Palm, Stephen Broadcom

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

Why is Table 61-20 included as it appears to be identical to Table 10/G.994.1

SuggestedRemedy

Delete Table; Reference G.994.1

Proposed Response *Response Status* **O**

Cl **61** SC **Table 61-21** P **362** L **17-20** # **798**
Palm, Stephen Broadcom

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

The "Standard information field ? SPar(1)" bits for IEEE 2BASE-TL and 10PASS-TS Ports is confusing with the reference document? only some of the bits are shown.

SuggestedRemedy

Delete Table; Reference G.994.1

Proposed Response *Response Status* **O**

Cl **61** SC **Table 61-23** P **363** L **20-23** # **801**
Palm, Stephen Broadcom

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

Note a
This description is flawed and mislocated "Setting the bit in MS message requests a silence period, of 1-255 seconds long, as specified by the silence period length field. If the length is set to 00 16 , the peer station shall remain silent for 10 minutes (640 s)."

SuggestedRemedy

Move to note for Table 61-25: "Silence period length (bits 6-1 x 10s, from 10 seconds to 42.5 minutes)"

Proposed Response *Response Status* **O**

Cl **61** SC **Table 61-23** P **363** L **20-23** # **800**
Palm, Stephen Broadcom

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

Note a
If "The silent period bit shall be set in CLR or CL message" then the "silence period length" cannot be transmitted.

SuggestedRemedy

Delete "The silence period length shall be set to 00 16 in CLR and CL messages."

Proposed Response *Response Status* **O**

Cl **61** SC **Table 61-25** P **364** L # **802**
Palm, Stephen Broadcom

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

See comment for Table 61-23

SuggestedRemedy

Table 61-25: "Silence period length (bits 6-1 x 10s, from 10 seconds to 10.5 minutes (630 seconds))"

Proposed Response *Response Status* **O**

Cl **61A** SC **61A** P **564** L # **904**
Schneiderheinze, Burkart Infineon

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

add an example which covers discovery, PMI aggregation and line activation with the use of g.994.1

SuggestedRemedy

see attached document 'Riess_01_1103'

Proposed Response *Response Status* **O**

Cl **62** SC **62** P **412** L **1** # **836**
Tom Mathey Independent

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

Clause 62 has a number of misplace and/or missing register bits.
Some of the clause 45 registers are generic, and apply to all of the places where used. Examples are reset, loopback, OUI or device identifiers, etc. For those persons who did not participate in the 10G development of Clause 45, this requirement is easily missed. For example, it is not obvious that the PMA layer requires a loopback capability, and there is no text in Clause 61, 62, or 63 to support loopback

SuggestedRemedy

Include table to show which registers are required (Reset, loopback, OUI or MMD device identifier, etc.).

Proposed Response *Response Status* **O**

Cl **62** *SC* **62.1.1** *P* **412** *L* **7** # **462**

Barrass, Hugh — Cisco Systems

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

This implies that Clause 61 is incorporated into Clause 62 (by reference) - which, of course, it isn't!

Also, a 10PASS-TS PHY requires all parts of the Clause 61 PCS - not just the 64/65 octet part.

SuggestedRemedy

Change the 2nd sentence of this paragraph to:

In order to form a complete 10PASS-TS PHY, the 10PASS-TS PMA and PMD shall be integrated with the PCS of Clause 61.

Proposed Response *Response Status* **O**

Cl **62** *SC* **62.1.3** *P* **412** *L* **22** # **87**

Beck, Michael — Alcatel Bell n.v.

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

T1.424/Trial-Use has a limited lifetime (2 years ending March 2004) . Its successor, American National Standard T1.424, is currently being balloted. Note that the document structure and content are identical between the Trial-Use standard and the American National Standard, with the exception of SCM modulation, which doesn't appear in the American National Standard.

SuggestedRemedy

Update all references to T1.424/Trial-Use by pointing to the American National Standard.

Proposed Response *Response Status* **O**

Cl **62** *SC* **62.3.4** *P* **416** *L* **54** # **464**

Barrass, Hugh — Cisco Systems

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

By allowing optional specifications which may be implemented or ommitted arbitrarily, it will be impossible to predict what the behavior of any communicating pair of PHYs will be.

This is not a standard!

If a feature is required for the standard then it must be mandatory. If a feature is not necessary then it should be out of scope (& therefore not enabled).

SuggestedRemedy

Change sentences:

"Implementation of optional specifications in MCM-VDSL is not required for compliance with this standard. If optional features are implemented, their use is negotiated between 10PASS-TS-O and 10PASS-TS-R during initialization."

to:

"Optional specifications in MCM-VDSL are out of scope unless explicitly referenced in this document as mandatory. If out of scope optional features are implemented, their use prohibited in 10PASS-TS operation."

Proposed Response *Response Status* **O**

Cl **62** *SC* **62.3.4.1** *P* **417** *L* **50** # **465**

Barrass, Hugh — Cisco Systems

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

If 10PASS-TS PHYs have optional capabilities regarding the support for band 0, then more port types are required:

10PASS-TS-O-N0 10PASS-TS-R-N0 (type O & type R - no use of band 0)
10PASS-TS-O-U0 10PASS-TS-R-U0 (type O & type R - use of band 0 for upstream)
10PASS-TS-O-D0 10PASS-TS-R-D0 (type O & type R - use of band 0 for downstream)
10PASS-TS-O-B0 10PASS-TS-R-B0 (type O & type R - use of band 0 for both upstream and downstream)

This will then cause confusion about what combinations of PHY capabilities must be chosen in order to get a specific operational mode.

Alternatively, the use of band 0 in either direction could be made mandatory - its use is then negotiated during handshake to ensure compliance with local regulations (& operator requirements). This remedy is recommended by the commenter.

SuggestedRemedy

49
50

All 10PASS-TS PHYs shall support the use of the band between 25 kHz and 138 kHz for either upstream or downstream transmission. The use of this band shall be negotiated during the initialization to select one of the following options:
a) Use of the band for upstream transmission
b) Use of the band for downstream transmission
c) The band is not used.

Proposed Response *Response Status* **O**

Cl **62** *SC* **62.3.4.9.1** *P* **422** *L* **10** # **451**

Law, David — 3Com

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

This subclause, and the following subclauses 62.3.4.9.2 to 62.3.4.9.5 do not follow the format of the changes provided in the prior subclauses.

SuggestedRemedy

A subclause that provides a replacement to a MCM-VDSL subsection should have a title that reads: 'Replacement of N.N.N, "<TITLE>"' where N.N.N is the subsection in MCM-VDSL and TITLE is the title of that subsection.

As an example subclause 62.3.4.9.2 which currently reads:

62.3.4.9.2 Description of signals
Replace section 12.2 of MCM-VDSL with the following:
The carrier set and signals used are specified in 61.3.

should read:

62.3.4.9.2 Replacement of 12.2, "Description of signals"
The carrier set and signals used are specified in 61.3.

Proposed Response *Response Status* **O**

Cl **62** *SC* **62.3.5.1.1** *P* **427** *L* **20** # **82**

Beck, Michael — Alcatel Bell n.v.

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

The 2 NOTES in this subclause contain "shall" statements. This is in contradiction with the informative nature of a NOTE. Also, the numbering style for the NOTES does not comply with the SA Style Guide.

SuggestedRemedy

Replace all occurrences of "shall" in these NOTES with "should", and restyle in compliance with Style Guide.

Proposed Response *Response Status* **O**

Cl **62** *SC* **62.3.5.3** *P* **428** *L* **18** # **81**

Beck, Michael — Alcatel Bell n.v.

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

The NOTE in this subclause contains a "shall" statement. This is in contradiction with the informative nature of a NOTE.

SuggestedRemedy

Replace "shall" with "should".

Proposed Response *Response Status* **O**

Cl **62A** *SC* **62A.1** *P* **566** *L* **3** # **160**

Edward Beili — Actelis Networks Inc.

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

2B defines 10 exemplary complete Profiles, representing specific sets of Data Rate, Power, PSD mask (Region) and Constellation. 10P defines only a single default complete profile. It would be beneficial for the ease of deployment/management, if we could define a number of complete profiles for 10P as well, representing specific sets of Bandplan, PSD mask, UPBO Reference PSD, Notching parameters and Payload rates.

SuggestedRemedy

Add a number of Complete Profiles for 10P in Annex 62A. Define a corresponding clause 30 management variable.

Proposed Response *Response Status* **O**

Cl **62A** *SC* **62A.3.6** *P* **569** *L* **51** # **460**

Barrass, Hugh — Cisco Systems

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

Simulations presented at the Task Force meeting in November 2003 suggest that certain payload rate profiles are untestable and therefore these profiles must be removed from the standard.

The presentation of the simulation results is referenced:

http://grouper.ieee.org/groups/802/3/efm/public/nov03/copper/EFM_Albuquerque_draft_1110c.pdf

Downstream rates 100 and 75 and upstream rate 35 are all excluded from the recommended set of tests, therefore these three must be removed.

SuggestedRemedy

Change 2nd half of paragraph to:

Drate values of 2.5, 5, 7.5, 10, 12.5, 15, 25, 35 and 50 shall be supported where the loop environment, bandplan and PSD mask allow this. Urate values of 2.5, 5, 7.5, 10, 12.5, 15, 25 and 50 shall be supported where the loop environment, bandplan and PSD mask allow this. This leads to a total of 8 symmetric and 64 asymmetric Payload Rate Profiles.

Proposed Response *Response Status* **O**

Cl **62A** *SC* **62A.3.7** *P* **570** *L* **46** # **76**

Beck, Michael — Alcatel Bell n.v.

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

The "complete profile" is incomplete.

SuggestedRemedy

Add "UPBO reference PSD profile" to the list of components of a complete profile.

Proposed Response *Response Status* **O**

Cl **62A** *SC* **62A.5** *P* **574** *L* **1** # **435**

Law, David — 3Com

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

The PICS proforma needs a copyright release statement. In addition the introduction boilerplate text is missing.

SuggestedRemedy

Add a copyright release statement for the PICS as a footnote.
Add introduction boilerplate text to 62A.5.1.

Proposed Response *Response Status* **O**

Cl **62B** *SC* **62B.3** *P* **579** *L* **4** # **459**
Barrass, Hugh — Cisco Systems

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

The test cases and performance numbers are arbitrary and have no basis in simulation or testing. In particular, the numbers do not correlate with publicly available test results from committee T1E1.4 or simulation results presented to 802.3ah Task Force in November 2003:

http://grouper.ieee.org/groups/802/3/efm/public/nov03/copper/EFM_Albuquerque_draft_1110c.pdf

SuggestedRemedy

Replace values in Table 62B-1 with those in the referenced presentation.

Proposed Response *Response Status* **O**

Cl **62B** *SC* **62B.3** *P* **579** *L* **4** # **302**
Edward Eckert — Ikanos Communication

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

The test cases for 10PASS-TS require updating to bring them in line with comments and contributions brought forward to ths sub-task force over the last few meeting. A number of participants have worked together off line to compare simulations and have compiled a set of test cases with wide agreement. These will be presented to the STF in Vancouver from the uploaded file "Clause 62B Table 62B-1 Proposal.xls"

SuggestedRemedy

Adopt the Table as specified in "Clause 62B Table 62B-1 Proposal.xls"

Proposed Response *Response Status* **O**

Cl **62B** *SC* **62B.3** *P* **580** *L* **1-30** # **303**
Edward Eckert — Ikanos Communication

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

In consideration of the confusion during the comparison of simulations in developement of this table, the Notes to Table 62B.3 should be clarified such that it is clear to the reader that when noise A is specified, it does not include the 20 self disturbers.

SuggestedRemedy

Editors license.

Proposed Response *Response Status* **O**

Cl **62B** *SC* **Table 62B-1** *P* **579** *L* **22-23, 37-** # **949**
Palm, Stephen — Broadcom

Comment Type **T** *Comment Status* **D** *late comment*

The profile 100/35 Mbps cannot be achieved with band plan A. As max number bits per tone is 12, and the minimal RS setting is RS(240,224), the maximal downstream rate is 224/240*12*(3.75e3-25+8.5e3-5.2e3) = 78.68 Mbps

SuggestedRemedy

Delete the 100/35 Mbps profile from the table.

Proposed Response *Response Status* **O**

Cl **63** *SC* **63** *P* **436** *L* **1** # **837**
Tom Mathey — Independent

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

Clause 63 has a number of misplace and/or missing register bits.
Some of the clause 45 registers are generic, and apply to all of the places where used. Examples are reset, loopback, OUI or device identifiers, etc. For those persons who did not participate in the 10G development of Clause 45, this requirement is easily missed. For example, it is not obvious that the PMA layer requires a loopback capability, and there is no text in Clause 61, 62, or 63 to support loopback

SuggestedRemedy

Include table to show which registers are required (Reset, loopback, OUI or MMD device identifier, etc.).

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.1.1** *P* **436** *L* **7** # **463**
Barrass, Hugh — Cisco Systems

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

This implies that Clause 61 is incorporated into Clause 63 (by reference) - which, of course, it isn't!

Also, a 2BASE-TL PHY requires all parts of the Clause 61 PCS - not just the 64/65 octet part.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **63** SC **63.1.1** P **436** L **8** # **38**
Squire, Matt Hatteras Networks

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

We use "shall" here - do we really mean "shall"?

SuggestedRemedy

We should probably replace that with "is", or add a PICs entry.

Proposed Response *Response Status* **O**

Cl **63** SC **63.1.4.2** P **437** L **22** # **35**
Squire, Matt Hatteras Networks

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

To be consistent with other lists, eliminate the period at the end of (b).

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **63** SC **63.1.4.2.1** P **437** L **25** # **39**
Squire, Matt Hatteras Networks

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

It seems like we'd want the bit-order information covered by a PICS entry and using shall terminology so that it is part of conformance.

SuggestedRemedy

Use shall to require bit order, and add PICS entry.

Proposed Response *Response Status* **O**

Cl **63** SC **63.1.5** P **437** L **54** # **897**
Schneiderheinze, Burkart Infineon

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

reference to 61.3 might be confusing

SuggestedRemedy

Add a note that during preactivation phase everything besides DISCOVERY and PMI aggregation will be negotiated

Proposed Response *Response Status* **O**

Cl **63** SC **63.2.1** P **438** L **48** # **40**
Squire, Matt Hatteras Networks

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

Another gratuitous use of "shall"?

SuggestedRemedy

Re-word to not use shall, or add PICS entry.

Proposed Response *Response Status* **O**

Cl **63** SC **63.2.2.1** P **439** L **52** # **42**
Squire, Matt Hatteras Networks

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

Replace "is" with "are" (talking about values plural).

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **63** SC **63.2.2.3** P **440** L **10** # **43**
Squire, Matt Hatteras Networks

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

Seems like we should we have a PICS entry covering the EOC/register mappings?

SuggestedRemedy

Add PICS entry.

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.2.2.3** *P* **440** *L* **24** # **900**

Schneiderheinze, Burkart Infineon

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

LOSW failure: g.991.2 defines 2 stages for LOSW:1. Framing bit (see g.991.2 chapter 9.2.3 Loss of Sync Defect and 2. Loss of SYNC Failure (see g.991.2 chapter 9.2.7) not clear whether 2B state defect register (1.82, see 45.2.1.42) bit Loss of sync word should identify LOSW defect or LOSW failure

SuggestedRemedy

Since register is called state defect register, LOSW defect seems to be appropriate - > remove first line from table since it is not needed anymore and add a corresponding description (as for segment defect) in the paragraph)

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.2.2.3** *P* **440** *L* **24-26** # **899**

Schneiderheinze, Burkart Infineon

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

octet 1 not correct for LOSW, loop attenuation andSNR margin

SuggestedRemedy

replace octet 1 with octet2

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.2.2.3** *P* **440** *L* **45** # **901**

Schneiderheinze, Burkart Infineon

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

octet 3 reports the customer side, but a -R device does not have a customer side

SuggestedRemedy

change octet3 to octet2

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.2.2.3** *P* **440** *L* **47** # **902**

Schneiderheinze, Burkart Infineon

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

relation between -R and -O device not clear

SuggestedRemedy

Loop attenuation and SNR margin threshold for both -o and -R device shall be set in clause 45 register of -o device, the -R thresholds will be passed to the peer 2BASE-TL -R using message ID 3

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.2.2.3** *P* **440** *L* **54** # **36**

Squire, Matt Hatteras Networks

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

Replace 2BASE-TL-C with 2BASE-TL-O. Table 63-6 as well.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.2.2.3** *P* **440** *L* **8** # **898**

Schneiderheinze, Burkart Infineon

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

only the 2BASE-TL register of -R device will be gatherd via SHDSL management

SuggestedRemedy

add 'of the -R device' behind 2BASE-TL register

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.3.12.3** *P* **402** *L* **23** # **80**

Beck, Michael — Alcatel Bell n.v.

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

This subclause is called "Timing and preferred transactions"; however, the repeated use of the word "shall" in the text makes these transactions normative. The commenter believes that the normative text in the referenced document (ITU-T Recommendation G.994.1) is already sufficiently specific, and that having normative text in this subclause limits the freedom of the implementer in an unnecessary way.

SuggestedRemedy

Replace all occurrences of "shall" in this subclause with "should".

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.3.2.2** *P* **442** *L* **48** # **37**

Squire, Matt — Hatteras Networks

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

Replace section symbol with word "Section" to be consistent with rest of document.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.3.2.4** *P* **444** *L* **16** # **142**

Kimpe, Marc — Adtran

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

Add wetting current ability to both annex A & B devices ie section 63.3.2.4 & 63.2.2.5.

SuggestedRemedy

Add the following subsection in 63.3.2.4:
63.3.2.4.1 Wetting current.

The DC resistance of the 2BASE-TL-R shall be 1000 ohms plus or minus 10%. The 2BASE-TL-R shall be capable of sustaining 20mA of wetting (sealing) current. The maximum rate of change of the wetting current shall be no more than 20 mA per second.

The 2BASE-TL-O may optionally supply power to support wetting current. When enabled, this power source should provide a nominal 48 V (measured from ring to tip). The maximum voltage of the power source (if provided) should be limited to 56.5 V. In no case shall the wetting current source apply a voltage greater than 72 V (measured from ring to tip). The potential from tip to ground should be zero or negative. The 2BASE-TL-O DC impedance from tip to GND and ring to GND shall each be 2870 ohms plus or minus 10%. The two resistors must match properly to satisfy the longitudinal balance requirements.

Add a subsection "wetting current" in sec. 63.3.2.5 which references the previous text.

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.3.2.5** *P* **444** *L* **25** # **903**

Schneiderheinze, Burkart — Infineon

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

the value in section B.5.2 of g.991.2 is already 12 dB

SuggestedRemedy

remove reference to chapter B.5.2 and just mention 12 db

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.4.4.1** *P* **446** *L* **21** # **75**

Beck, Michael — Alcatel Bell n.v.

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

Wrong font for the "Feature" field of entry 2BPMA-1.

SuggestedRemedy

Change style to "CellBody".

Proposed Response *Response Status* **O**

Cl **63** *SC* **63.4.4.1** *P* **446** *L* **42** # **41**
Squire, Matt Hatteras Networks

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

Replace "is" with "are" (talking about 2 things)

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **63A** *SC* **63A.5** *P* **592** *L* **1** # **434**
Law, David 3Com

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

The PICS proforma needs a copyright release statement. In addition the introduction boilerplate text is missing.

SuggestedRemedy

Add a copyright release statement for the PICS as a footnote.
Add introduction boilerplate text to 63A.5.1.

Proposed Response *Response Status* **O**

Cl **63B** *SC* **63B.3** *P* **596** *L* **33** # **905**
Schneiderheinze, Burkart Infineon

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

Table A-1 specifies 6 test for Profile 2, not clear whether all test SHALL be passed or a specific one??

SuggestedRemedy

modify 'corresponding test' to 'corresponding tests'

Proposed Response *Response Status* **O**

Cl **63B** *SC* **63B.3** *P* **596** *L* **33** # **44**
Squire, Matt Hatteras Networks

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

We don't have any performance test for profile 1/6. Shouldn't we have some minimum performance guideline for those profiles as well?

SuggestedRemedy

Add test cases.

Proposed Response *Response Status* **O**

Cl **63B** *SC* **63B.4** *P* *L* # **45**
Squire, Matt Hatteras Networks

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

I believe that we decided support of 32-PAM is optional and 16-PAM required. If thats still true, it doesn't come out in any statements or PICS entries.

SuggestedRemedy

I'm not sure whether this should be clarified in 63 or in 63B, but in 63B we say support of all profiles is a manatory PICS statement. So we should at least correct it there.

Proposed Response *Response Status* **O**

Cl **63B** *SC* **63B.5** *P* **598** *L* **14** # **433**
Law, David 3Com

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

The PICS proforma needs a copyright release statement. In addition the introduction boilerplate text is missing.

SuggestedRemedy

Add a copyright release statement for the PICS as a footnote.
Add introduction boilerplate text to 63B.5.1.

Proposed Response *Response Status* **O**

Cl **64** *SC* *P* *L* # **481**
Glen Kramer Teknovus

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

Various typos are gathered in this comment:

page 457, line 38: "opcode specific" should have hyphen in it.
page 468, line 14: Missing comma after "Thus"
page 468, line 43: Missing commas around "however"
page 470, line 42: Missing comma after "overlaps"

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **64** *SC* **64** *P* **449** *L* **1** # **420**

Law, David 3Com

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

I am concerned that the Clause 4 MAC is still used since, from my reading of the draft, the actual number of functions needed in Clause 4 to support PtMP is small. I am making this comment against this draft as Draft D3.0 has moved back to utilizing the 1Gb/s full-duplex MAC and also includes an IPG timer function in Clause 64, the Multi-Point MAC Control sublayer (see Figures 64-11 and 64-12, state START PACKET INITIATE TIMER), further reducing the number of functions actually provided by the Clause 4 MAC itself. [Important - please don't read this as a request to return to the use of the 1Gb/s half-duplex MAC as appeared in draft D2.1].

Now please don't misunderstand me here, I am not saying anything is technically incorrect here. I just believe that to make the reader have to go through the entire Clause 4 MAC, and expect them to figure out that not only the half-duplex functions are not need, but also the some other functions, such as IPG enforcement, are redundant I believe increases the risk of misreading or misunderstanding, which I fear one day could ultimately result in interoperability issues.

SuggestedRemedy

Implement the 'Thin MAC for P2MP' proposal to be presented by Ben Brown.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.1** *P* **450** *L* **25** # **167**

Lynskey, Eric UNH-IOL

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

Cross Reference to Clause 67 doesn't take you anyplace.

SuggestedRemedy

Fix cross-reference.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.1** *P* **450** *L* **6** # **663**

Brown, Benjamin Independent

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

pluralize

SuggestedRemedy

replace "signals' path from" with "signals' paths from"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.1** *P* **451** *L* **12** # **665**

Brown, Benjamin Independent

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

a/an

SuggestedRemedy

replace "ONU to a OLT" with "ONU to an OLT"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.1** *P* **451** *L* **16** # **487**

Glen Kramer Teknovus

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

Draft says: "The Multi-point MAC Control functionality shall be implemented for subscriber access devices containing point-to-multipoint physical layer devices defined in Clause 60, this is optional for all other IEEE 802.3 devices."

Is it really optional? What if MP MAC Control is implemented only at one end of a link? Without MPCPDUs, no data traffic will flow through.

SuggestedRemedy

Remove the statement that MP MAC Control is optional for other 802.3 devices.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.1** *P* **451** *L* **3** # **168**

Lynskey, Eric UNH-IOL

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

No cross-reference for Clause 31.

SuggestedRemedy

Add cross-reference.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.1** *P* **451** *L* **8** # **664**

Brown, Benjamin Independent

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

missing word

SuggestedRemedy

replace "MPCP located" with "The MPCP located"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.1.2** *P* **451** *L* **39** # **169**

Lynskey, Eric UNH-IOL

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

Cross-References to figure 64-2 not active.

SuggestedRemedy

Activate cross reference in multiple places (pg. 451 line 39, pg. 452 line 31 and 41).

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.1.2** *P* **452** *L* **38** # **170**

Lynskey, Eric UNH-IOL

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

Cross reference to 65.1.3.4 not active.

SuggestedRemedy

Activate cross reference.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.1.2** *P* **452** *L* **40** # **93**

Beck, Michael Alcatel Bell n.v.

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

If I understand the specification correctly, an EPON is described as a set of N logical point-to-point links, one end of each relying on the common OLT PHY but still connecting to an individual MAC, as shown in Figure 64-2. Although practical implementations of EPON OLTs will probably be integrated with a MAC Relay function (as described in IEEE Std 802.1D or 802.1Q), the specification also allows a situation in which distinct MAC Clients are connected to the MAC Service interface of each of the OLT MACs. These MAC Clients may want to use the EPON solely for point-to-point communications with the MAC Client attached to the associated ONU.
It is (at least theoretically) possible that frames originating from different MAC Clients at the OLT side end up on the same bridged LAN. If that case is considered, it is actually a bad idea to associate the same MAC address with each of the MACs at the OLT side.

SuggestedRemedy

Remove the statement "it is strongly recommended that a single unicast MAC address be used by the OLT", or explain better why MAC address uniqueness is not expected to be an issue in practical OLT implementations.
In 64.4.1, the statement "The SA in MPCPDU is the individual MAC address associated with the port through which the MPCPDU is transmitted." should be further clarified. Add something like "For MPCPDUs originating at the OLT side, this can be the address any of the individual MACs associated with an ONU or the address of the SCB MAC. NOTE---These MACs may all share a single unicast address, as explained in 64.1.2.".

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.1.2** *P* **452** *L* **41** # **482**

Glen Kramer Teknovus

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

The decision whether to use same or different MAC addresses for each MAC in the OLT is an implementation decision and is completely out of scope of 802.3 standard

SuggestedRemedy

Remove the text prescribing single MAC address.

Proposed Response *Response Status* **O**

Cl **64** SC **64.1.3** P **453** L **3** # **171**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Cross reference to Figure 64-3 not active.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **64** SC **64.1.4** P **454** L **6** # **666**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
Several editing problems

SuggestedRemedy
Changes for the 2 sentences are in quotes - in addition the word vector is removed from the first sentence:

The vector notations used in the state diagrams for bit"s" use 0 to mark the first received bit and "so" on (for example data[0:15]), follow"ing" the conventions of 3.1 for bit ordering. When referring to an octer vector"," 0 is used to mark the first received octet and "so"on (for example m_sdu[0..1]).

Proposed Response *Response Status* **O**

Cl **64** SC **64.2** P **454** L **13** # **172**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Cross reference for figure 64-3 not active in two places, line 13 and 31.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **64** SC **64.2** P **454** L **19** # **667**
Brown, Benjamin Independent

Comment Type **T** *Comment Status* **D**
wrong sublayers

SuggestedRemedy
"(MAC, MAC Control)" are not mac clients - remove this part of the text

Proposed Response *Response Status* **O**

Cl **64** SC **64.2.1** P **454** L **35** # **173**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Cross reference for clause 65 not activated.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **64** SC **64.2.1** P **454** L **49** # **668**
Brown, Benjamin Independent

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

SuggestedRemedy
replace "request" with "requests"

Proposed Response *Response Status* **O**

Cl **64** SC **64.2.1** P **454** L **54** # **669**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
missing words

SuggestedRemedy
2 instances in the last line: replace "referred as the" with "referred to as the"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.1** *P* **455** *L* **11** # **671**
Brown, Benjamin Independent

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

Repeats

SuggestedRemedy

These last 2 sentences are repeats from 3 paragraphs previous (the next to last sentence) and from the previous paragraph (the last sentence). Delete them both.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.1** *P* **455** *L* **8** # **670**
Brown, Benjamin Independent

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

"discarded or modified"

SuggestedRemedy

How are MA_DATA.request service primitives discarded or modified? There is no mention of this in the clause (that I noticed anyway).

Remove ", discarded or modified"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.2** *P* **455** *L* **35** # **672**
Brown, Benjamin Independent

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

Combine subclauses

SuggestedRemedy

Replace "Multiplexing Control" with "Multiplexing control, control multiplexor, control parser

Combine the text from 64.2.3 as additional paragraphs in 64.2.2

Combine all constants, variables, functions, timers and messages in 64.2.2.x with those in 64.2.3.x

These state diagrams are sufficiently related and share variables so they should be combined into a single subclause

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.2** *P* **455** *L* **37** # **673**
Brown, Benjamin Independent

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

missing word

SuggestedRemedy

replace "out of Multi-point" with "out of the Multi-point"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.2.2** *P* **456** *L* **8** # **674**
Brown, Benjamin Independent

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

Variables and default values

SuggestedRemedy

Every variable in this entire clause has a default value. From 36.2.5: 'State diagram variables follow the conventions of 21.5.2 except when the variable has a default value. Variables in a state diagram with default values evaluate to the variable default in each state where the variable value is not explicitly set."

From reviewing this entire clause, I cannot find a single instance of a variable that needs a default value. Every variable is assigned a value when necessary and expected to retain that value until is is assigned a new one. Every default value should be removed from every variable in this entire clause.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3** *P* **457** *L* **41** # **675**
Brown, Benjamin Independent

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

missing words

SuggestedRemedy

In 2 instances on this line: replace ".request from" with ".request primitives from"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.1** *P* **459** *L* **32** # **208**
Lynskey, Eric UNH-IOL

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

Most variable and constant names do not have spaces in them.

SuggestedRemedy

Change MAC Control to MAC_Control. Also need to make changes in state diagrams.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.1** *P* **459** *L* **37** # **200**
Lynskey, Eric UNH-IOL

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

The definition of tail_guard doesn't include the SFD and length/type. In order to get 29 octets, you need DA (6), SA (6), Preamble (7), SFD (1), length/type (2), FCS (4), EPD (3).

SuggestedRemedy

Fix sentence to read: preamble, SFD, DA, SA, Length/Type, FCS, and the EPD.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.1** *P* **459** *L* **39** # **677**
Brown, Benjamin Independent

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

m_sdu?

SuggestedRemedy

Spell out first usage of m_sdu

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.1** *P* **459** *L* **45** # **678**
Brown, Benjamin Independent

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

value: 29

SuggestedRemedy

Where does 29 come from?
preamble=8 (actually 7 but I'll assume you're including the SFD)
DA=6
SA=6
FCS=4
EPD=2/3
Total=26/27

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.1** *P* **459** *L* **46** # **404**
Dawe, Piers Agilent

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

Grammar: one time_quantum, more than one time_quanta.

SuggestedRemedy

Change this one and on line 52 to time_quantum.
p460 line 2, change 'quantas' to 'quanta'; line 20, quanta to quantum, line 22 second occurrence to quantum. p461 line 30 and p462 line 7 to quanta. And so on.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.1** *P* **460** *L* **1** # **687**
Brown, Benjamin Independent

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

Variables out of order

SuggestedRemedy

Move defaultOverhead to its proper alphabetical place in the list

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.2** *P* **460** *L* **16** # **679**
Brown, Benjamin Independent

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

SuggestedRemedy
This variable seems more like a counter or maybe a function. I'm not too convinced of this so I won't push very hard...

On line 21, change "Variable used to" to be "Variables used to"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.2** *P* **460** *L* **22** # **201**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
The localTime variable seems to say that the time_quanta constant has units of nanoseconds. The definition of time_quanta says it has units of bits. This should be reworded so it's clear that time_quanta refers to units of bits and not bit times or nanoseconds. Or, reword the definition of time_quanta.

SuggestedRemedy
This should be reworded so it's clear that time_quanta refers to units of bits and not bit times or nanoseconds.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.2** *P* **460** *L* **28** # **202**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
The newRTT variable has no units associated with it.

SuggestedRemedy
Add text that says it is in units of time_quanta (16 bit times).

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.2** *P* **460** *L* **33** # **203**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
RTT has not units associated with it.

SuggestedRemedy
Add text that says it is in units of time_quanta (16 bit times).

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.2** *P* **460** *L* **38** # **204**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
timestampDrift has no units associated with it.

SuggestedRemedy
Add text that says it is in units of time_quanta (16 bit times).

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.2** *P* **460** *L* **43** # **680**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
change wording

SuggestedRemedy
Replace "resulting due to" with "as a result of"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.2** *P* **460** *L* **49** # **681**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
change wording

SuggestedRemedy
Replace "forwarding in the transmit path" with "transmission at the ONU"
This removes the use of the term "forward", which has a particular connotation with bridge experts.

Also, on line 51: replace "transmitAllowed is not used at the OLT, but changes" with "transmitAllowed changes" then at the end of this sentence, delete "for the ONU"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.2** *P* **461** *L* **14** # **683**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
change wording

SuggestedRemedy
delete "forward a frame. Setting it to true indicates that the instance is ready to"
Again, this removes the term "forward"

Also, delete the last sentence of this variable since it is both clumsy and unnecessary.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.2** *P* **461** *L* **2** # **682**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
add wording

SuggestedRemedy
At the end of the first sentence, add the words "at the OLT"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.2** *P* **461** *L* **30** # **205**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
The nextTxTime variable does not have a size or default value associated with it.

SuggestedRemedy
Add size (type) and default value.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.3** *P* **461** *L* **43** # **839**
Tom Mathey Independent

Comment Type **T** *Comment Status* **D**
The definition of function timestamp uses two variables: m_sdu and time. Neither one is provided a definition in clause 64.2.3.

SuggestedRemedy
Provide a definition for all of the variables used in this subclause.
Provide a definition for all of the variables used in Clause 64.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.3** *P* **461** *L* **47** # **684**
Brown, Benjamin Independent

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

SuggestedRemedy
replace "return the active" with "returns the active"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.3** *P* **462** *L* **1** # **838**

Tom Mathey Independent

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

The EPON group might want to take a closer look at the definition of FEC_Overhead(length) and associated text of "frame" and "length". The PCS does not seem to be stripping the preamble and SFD, and the count does want to include the FCS and client data greater than 0x600. (Note to EPON: the vast majority of Ethernet is type encoded, and length value is length field is thus null).

SuggestedRemedy

Provide a very specific definition of frame, packet, length; be sure to include all of the pieces which FEC_Overhead is to include.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.3** *P* **462** *L* **10** # **496**

Glen Kramer Teknovus

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

FEC_overhead() formula is incorrect. When FEC is enabled, overhead increases from /T/R/I/I/I/I/I/ (a total of 12 octets) to
/T/R/I/T/R/parity/T/R/I/T/R/I/I/I/I/I/KD/KD/ (a total of parity + 26 octets)

SuggestedRemedy

Change formula to:
FEC_Overhead = 13 + CEILING(length/239)*8

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.3** *P* **462** *L* **10** # **685**

Brown, Benjamin Independent

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

FEC_Overhead equation

SuggestedRemedy

What happens if [length/239] is not an integer? There needs to be some additional function (roundup?) used to ensure fractions aren't used.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.3** *P* **462** *L* **3** # **403**

Dawe, Piers Agilent

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

This function is not clear. I can't see where the variable 'length' comes from. I don't think it is 'Length/Type' because the FEC protects more than just the payload. The obscure bracket notation is so arcane, we don't know what it is called and many readers will take it for a typographical problem.

SuggestedRemedy

Explain where 'length' comes from. What units is it measured in? Can it take half-integral values? If the equation involves rounding up to the next integer, just say it in words. In line 3, put 'length' in italics.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.3** *P* **462** *L* **5** # **207**

Lynskey, Eric UNH-IOL

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

SOF and EOF do not exist in the abbreviations section of Clause 1.

SuggestedRemedy

Replace with ...accommodate longer start and end of frame sequences..., or add to clause 1.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.4** *P* **462** *L* **17** # **422**

Law, David 3Com

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

This subclause states that 'No timers are defined for the Control Parser or Control Multiplexer functional blocks' yet Figure 64-11 'OLT Control Multiplexer state diagram' shows a timer 'packet_initiate_timer'.

SuggestedRemedy

Add a definition of the 'packet_initiate_timer' to subclause 64.2.3.4.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.4** *P* **462** *L* **17** # **488**
Glen Kramer Teknovus

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

Definition of packet_initiate_timer is missing

SuggestedRemedy

Add missing definition

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.5** *P* **462** *L* **21** # **206**
Lynskey, Eric UNH-IOL

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

The MA_DATA.indication primitive defined here has different fields than the one defined and used in Clause 31 and Clause 2 (this one doesn't use ReceiveStatus). I recommend providing a definition in Clause 64 of the fields of this primitive or putting in a cross reference to Clause 31 and adding the extra field.

SuggestedRemedy

Add ReceiveStatus to message description and put cross reference to 31.5.1.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.6** *P* **464** *L* **14** # **489**
Glen Kramer Teknovus

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

In Figure 64-11, "Not equal" sign should be "not belong to". Same in Figure 64-12.

SuggestedRemedy

Fix the transition labels.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.6** *P* **465** *L* **1** # **788**
Booth, Brad Intel

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

State diagrams 64-11, 64-12, 64-17, 64-18, 64-19, 64-20, 64-22, 64-23, 64-25, 64-26, 64-27 do not follow 802.3 conventions.

SuggestedRemedy

Lines should not cross. Maximum font size should be 10pt. Transition equations should not break the transition line. Transition equations must be the same to use the same transition line.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.6** *P* **465** *L* **13** # **210**
Lynskey, Eric UNH-IOL

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

When in the WAIT FOR TRANSMIT state of Figure 64-11, you set opcode to the first 16 bits of data. It's possible that you will be looking at a MAC Client frame here that does not contain an opcode but the first 16 data bits happen to look like an opcode. When this happens, you will want to send the data frame unchanged instead of sending a timestamp frame. Change the figure to be more like Figure 64-12. Parse the frame on the length/type field and then extract the opcode if it is a MAC Control.

SuggestedRemedy

In WAIT FOR TRANSMIT, remove opcode <= data[0:15]. In the TRANSMIT READY state, remove both exit conditions and replace them with Length/Type = MAC Control and Length/Type not = MAC Control. The latter condtion goes directly into the SEND DATA FRAME state. The former exit condition goes into a new state called PARSE OPCODE, which is a duplicate of the same state in Figure 64-12. If the opcode is a timestamp opcode it goes to the SEND TIMESTAMP FRAME state, and if it isn't it goes to the SEND DATA FRAME state.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.6** *P* **465** *L* **21** # **211**
Lynskey, Eric UNH-IOL

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

In figure 64-11, the OLT is allowed to send frames that contain unsupported opcodes. Figure 64-12 does not allow the ONU to send frames with unsupported opcodes. Is this intentional?

SuggestedRemedy

Add a condition to Figure 64-11, similar to 64-12, that does not allow the OLT to transmit a frame with an unsupported opcode.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.6** *P* **465** *L* **24** # **212**
Lynskey, Eric UNH-IOL

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

In Figure 64-11, the SEND TIMESTAMP FRAME state assigns the localTime value using the timestamp function defined in 64.2.3.3. This is the only place this function is used, and it operates with bytes. In Figure 64-12, the timestamp is assigned directly without using this function and is done with bits. With the OLT and ONU diagrams doing the same thing, it is confusing that one uses a byte function and one directly assigns with bits.

SuggestedRemedy

Remove the timestamp function from the diagram and text. Replace in this state with data[16:47] <= localTime. Or, have figure 64-12 reference the timestamp function.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.2.3.6** *P* **465** *L* **25** # **483**
Glen Kramer Teknovus

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

Inconsistent timestamping methods in OLT and in ONU.
In OLT (Figure 64-11): timestamp(M-sdu, localTime)
In ONU (Figure 64-12): data[16:47] = localTime

SuggestedRemedy

Use the same process in both state diagrams.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3** *P* **467** *L* **3** # **174**
Lynskey, Eric UNH-IOL

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

Cross reference for Figure 64-3 not active on line 3 and 14.

SuggestedRemedy

Activate cross reference.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3** *P* **467** *L* **3** # **688**
Brown, Benjamin Independent

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

extra word

SuggestedRemedy

Replace "comprises of" with "comprises"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.10** *P* **482** *L* **7** # **713**
Brown, Benjamin Independent

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

laser turn on, turn off and overlapping grants

SuggestedRemedy

Is it still appropriate to talk about this stuff here or is this old text that should be removed given the addition of the fifo in Clause 65?

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.10** *P* **482** *L* **9** # **264**
Lynskey, Eric UNH-IOL

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

No PICS item exists for this shall.

SuggestedRemedy

Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.10.1** *P* **482** *L* **46** # **405**
Dawe, Piers Agilent

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

'output is undetectable.' BAD idea, hostage to better test equipment!

SuggestedRemedy

Use whatever the proper criterion is; should be in clause 60 or mentioned there.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.10.2** *P* **483** *L* **31** # **714**
Brown, Benjamin Independent

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

SuggestedRemedy
Is this an appropriate word? I tried looking it up but couldn't find a definition.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.10.2** *P* **484** *L* **29** # **406**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D**
I couldn't see how I am supposed to know what 'syncTime' is. I think it's Tsync plus some other stuff.

SuggestedRemedy
Please explain.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.10.2** *P* **484** *L* **29** # **715**
Brown, Benjamin Independent

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

SuggestedRemedy
Isn't this delay, of transmitting IDLE for the syncTime duration of the PHY to make sure the link is stable before packets, handled by the fifo in the PCS? This is no longer applicable to this clause, is it?

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.10.3** *P* **484** *L* **46** # **265**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
No PICS item exists for this shall.

SuggestedRemedy
Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.10.6** *P* **486** *L* **25** # **716**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
change wording

SuggestedRemedy
replace "MACs" with "MPMC instances"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.10.6** *P* **487** *L* **20** # **486**
Glen Kramer Teknovus

Comment Type **T** *Comment Status* **D**
A state or procedure to parse GATE message in ONU is missing (Figure 64-26). As a result, sync_time is used without ever being initialized.

SuggestedRemedy
Add GATE parsing procedure

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.10.6** *P* **488** *L* **14** # **495**
Glen Kramer Teknovus

Comment Type **TR** *Comment Status* **D**
In state diagram 64-27, the calculation of maxDelay does not take into account FEC parity overhead. It is possible that a portion of REGISTER_REQ message will be transmitted outside discovery window.

Also, TQ_size is used incorrectly. It should be a divisor, not a multiplier.

SuggestedRemedy
In RANDOM WAIT state use the following formula

maxDelay = currentGrant.Length - laserOnTime - laserOffTime - syncTime - (sizeof(MPCPDU) + tail_guard + 1) / TQ_size

if(FEC_Enabled)
  maxDelay = maxDelay - FEC_Overhead(sizeof(MPCPDU))

[start tndDlyTmr, random(maxDelay)]

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.10.6** *P* **488** *L* **46** # **497**
Glen Kramer Teknovus

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

MAC Control does not explicitly control laser anymore.

SuggestedRemedy

Diagram 64-27 should be cleaned up and simplified by eliminating state LASER OFF. The statement "transmitAllwed = false" should be moved to WAIT FOR GRANT state.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.2** *P* **467** *L* **50** # **421**
Law, David 3Com

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

'... specified in Clause 4.3.2.' should read '... specified in subclause 4.3.2.'

SuggestedRemedy

See comment. In addition do a search and replace throughout this clause for instances where Clause should actually read 'subclause'.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.2** *P* **467** *L* **53** # **689**
Brown, Benjamin Independent

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

Is this still true?

SuggestedRemedy

I don't think the laser control signal exists any more in this sublayer. Delete this sentence.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.2** *P* **467** *L* **53** # **490**
Glen Kramer Teknovus

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

"An additional interface is exported towards the MAC and Physical layer in order to enable and disable the lasing at the PMD."
This additional interface was removed in D2.1.

SuggestedRemedy

Remove the above paragraph.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.2.6** *P* **465** *L* **31** # **209**
Lynskey, Eric UNH-IOL

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

The packet_initiate_timer is not defined anyplace.

SuggestedRemedy

Add definition to 64.2.3.4:
packet_initiate_timer - Timer used to enforce the minimum interframe spacing between multiple MACs at the OLT. When FEC is enabled on the OLT or ONU this timer enforces the minimum interframe spacing required for the extra overhead needed by the PHY.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.3.1** *P* **468** *L* **3** # **213**
Lynskey, Eric UNH-IOL

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

When using shared LAN Emulation on an EPON, you may have a problem if you try to implement the PAUSE operation. Although an ONU could PAUSE the particular MAC associated with it at the OLT, you still have the problem of the single copy broadcast MAC or potentially a multicast MAC. If any data frame can be sent from the OLT to an ONU that has issued a PAUSE frame, then the PAUSE operation has been compromised. A warning or recommdendation should be made to this effect.

SuggestedRemedy

Add a sentence: The support of multicast and single copy broadcast MACs at the OLT may allow for data frames to be received by an ONU while its associated MAC in the OLT is being paused, thus compromising the PAUSE operation.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.3.4** *P* **468** *L* **43** # **690**
Brown, Benjamin Independent

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

spelling

SuggestedRemedy

replace "dependant" with "dependent"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.3.4** *P* **468** *L* **46** # **691**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
wrong word

SuggestedRemedy
replace "nearer" with "less"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.3.4** *P* **468** *L* **48** # **692**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
change wording

SuggestedRemedy
replace "time_quanta are defined as" with "The units of time_quanta are defined as"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.3.4** *P* **468** *L* **48** # **260**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
No PICS item for "The OLT shall not issue more than one message every 1024 time_quantas to a single ONU."

SuggestedRemedy
Add PICS item

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.3.4** *P* **468** *L* **49** # **214**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
time_quanta are not defined in Clause 1.4. It is defined as a constant in 64.2.3.1, but there it is defined with units of bits and not bit times.

SuggestedRemedy
Reconcile usage of time_quanta throughout clause and if necessary add definition to 1.4. Otherwise, remove reference to 1.4.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.3.4** *P* **468** *L* **53** # **693**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
change wording

SuggestedRemedy
replace the first 2 paragraphs with: "Both the OLT and the ONU have 32-bit counters that increment every 16 bit times. These provide a local time stamp. When either device transmits an MPCPDU, it maps its counter value into the timestamp field. When the ONU receives MPCPDUs, it sets its counter according to the value in the timestamp field. When the OLT receives MPCPDUs, it uses the received value to calculate or verify a round trip time between the OLT and the ONU."

Further, add this text to the end of the sentence in the third paragraph: "from the MAC Control to the MAC"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.4** *P* **469** *L* **1** # **694**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
wrong word

SuggestedRemedy
replace "has a timer which" with "has a timer that"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.4** *P* **469** *L* **6** # **261**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
No PICS item for this shall.

SuggestedRemedy
Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.3.6** P **470** L **19** # **695**
Brown, Benjamin Independent

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

Are there assumptions for this comparison?

SuggestedRemedy

Subtract A from B and testing the MSB. When MSB=1, a<b=TRUE. When MSB=0, a<b=FALSE.

Take the following as an example. A=0, B=3. A is less than B. However, A-B=1. The MSB of 1 = 0 therefore a<b=FALSE. Something is broken. Is there an assumption that A and B are never too far apart? What is wrong?

Proposed Response *Response Status* **O**

Cl **64** SC **64.3.8** P **470** L **38** # **696**
Brown, Benjamin Independent

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

missing comma

SuggestedRemedy

replace "gate message which" with "gate message, which"

Also, on line 51: replace "discovered ONU which" with "discovered ONU, which"

Proposed Response *Response Status* **O**

Cl **64** SC **64.3.8.5** P **473** L **35** # **175**
Lynskey, Eric UNH-IOL

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

Need cross reference to table 31A-1.

SuggestedRemedy

Add cross reference.

Proposed Response *Response Status* **O**

Cl **64** SC **64.3.8.5** P **473** L **36** # **698**
Brown, Benjamin Independent

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

#

SuggestedRemedy

Remove the # symbols on each side of the reference to Table 31A-1

Proposed Response *Response Status* **O**

Cl **64** SC **64.3.8.5** P **473** L **44** # **699**
Brown, Benjamin Independent

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

missing parameters

SuggestedRemedy

The description of this message doesn't include a definition for all of the parameters. It is missing DA and register_req.

Proposed Response *Response Status* **O**

Cl **64** SC **64.3.8.5** P **474** L **23** # **702**
Brown, Benjamin Independent

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

wrong word

SuggestedRemedy

replace "that the result" with "of the result"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.8.5** *P* **474** *L* **3** # **700**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
wrong word

SuggestedRemedy
Replace "indication" with primitive.

The same thing applies to:
page 474, line 21
page 474, line 32
page 480, line 21
page 486, line 2

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.8.5** *P* **474** *L* **42** # **703**
Brown, Benjamin Independent

Comment Type **E** *Comment Status* **D**
wrong word

SuggestedRemedy
Replace "primitive" with "function"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.8.5** *P* **474** *L* **5** # **701**
Brown, Benjamin Independent

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

SuggestedRemedy
replace "The flags parameters" with "The flags parameter"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.8.6** *P* **474** *L* **53** # **176**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross references for Figure 64-19 and Figure 64-20.

SuggestedRemedy
Activate cross references.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.8.6** *P* **474** *L* **53** # **704**
Brown, Benjamin Independent

Comment Type **TR** *Comment Status* **D**
don't use MAC

SuggestedRemedy
Replace "MAC attached to" with "MPMC instance associated with"

Also, on line 54: replace "MAC, except the MAC attached to" with "MPMC instance, except that instance associated with"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.8.6** *P* **475** *L* **16** # **484**
Glen Kramer Teknovus

Comment Type **T** *Comment Status* **D**
The following notation is very confusing
TransmitFrame(DA, SA, MAC Control,opcode =
GATE|startTime|grantLength|discoveryFlag = true)

SuggestedRemedy
1. Create variable "data" on a separate line.
2. Call TransmitFrame function with the same set of parameters as is used in its definition.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.8.6** *P* **477** *L* **9** # **498**

Glen Kramer Teknovus

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

Refer to figure 64-14 and state diagram 64-19. The OLT sends REGISTER message on broadcasting channel (SCB instance of MPCP). But it sends GATE message on unicast channel (newly created instance of MPCP for the newly discovered ONU). It is incorrect to combine these two events in the same state diagram, since the state diagram only describes one instance of MPCP.

SuggestedRemedy

Perhaps the easiest solution is to say that each MPCP instance may transmit on both unicast and broadcast channels. Then, the handshaking protocol will look like:

1. Discovery GATE transmitted on broadcast channel from SCB MAC Control instance
2. REGISTER_REQs received from broadcast channel by SCB MAC Control instance in the OLT
3. REGISTER transmitted on broadcast channel from unicast MAC Control instance in OLT
4. GATE transmitted on unicast channel from unicast MAC Control instance in OLT
5. REGISTER_ACK received on unicast channel by unicast MAC Control instance in OLT

Discussion needed to decide how one MAC Control instance may be instructed to send frames with either unicast or broadcast LLID.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.9.5** *P* **480** *L* **13** # **710**

Brown, Benjamin Independent

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

change wording

SuggestedRemedy

Replace "has two parameters" with "consists of two fields". For the rest of this paragraph, replace all instances (2) of "parameter" with "field" and all instances (4) of "field" with "element"

The same thing applies to the next paragraph, starting on line 25.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.9.6** *P* **481** *L* **3** # **711**

Brown, Benjamin Independent

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

change wording

SuggestedRemedy

replace "MACs attached to" with "MPMC instances associate with a"

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.3.9.6** *P* **481** *L* **39** # **485**

Glen Kramer Teknovus

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

In Figure 64-23 state transition label and code in SEND REPORT state are shown in wrong font.
Also see RECEIVE REPORT state in 64-22

SuggestedRemedy

Fix the font

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.4.1** *P* **490** *L* **32** # **266**

Lynskey, Eric UNH-IOL

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

No PICS item exists for this shall.

SuggestedRemedy

Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** *SC* **64.4.2** *P* **491** *L* **29** # **267**

Lynskey, Eric UNH-IOL

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

No PICS item exists for this shall.

SuggestedRemedy

Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.2** P **491** L **37** # **268**
Lynskey, Eric UNH-IOL

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

No PICS item exists for this shall.

SuggestedRemedy

Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.2** P **491** L **41** # **269**
Lynskey, Eric UNH-IOL

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

No PICS item exists for this shall.

SuggestedRemedy

Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.2** P **492** L **49** # **270**
Lynskey, Eric UNH-IOL

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

No PICS item exists for this shall.

SuggestedRemedy

Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.2** P **492** L **51** # **271**
Lynskey, Eric UNH-IOL

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

No PICS item exists for this shall.

SuggestedRemedy

Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.3** P **493** L **41** # **499**
Glen Kramer Teknovus

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

"Queue #n Report. This is an unsigned 16 bit value signifying the data transmission request corresponding to queue #n."

To achieve interoperability, ONU's behavior should be specified precisely. While the OLT is free to make different allocation/scheduling decisions, it always should know exact meaning of the reported data. The above description is not nearly enough.

SuggestedRemedy

Use the following definition for this field:
Queue #n Report. This value represents the length of queue# n at time of REPORT message generation. The reported length should be adjusted to account for the necessary inter-frame spacing and FEC parity data overhead, if FEC is enabled. The Queue #n Report filed is an unsigned 16 bit integer representing transmission request in units of time quantas. This field is present only when the corresponding flag in the Report bitmap is set.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.3** P **493** L **5** # **272**
Lynskey, Eric UNH-IOL

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

This shall appears to be a duplicate of the one in 64.3.9. Only one of the statements needs to have the shall, and only a single PICS item is necessary.

SuggestedRemedy

Remove this shall or the one in 64.3.9 and update the PICS.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.3** P **494** L **47** # **273**
Lynskey, Eric UNH-IOL

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

No PICS item exists for this shall.

SuggestedRemedy

Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.3** P **494** L **48** # **274**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
No PICS item exists for this shall.

SuggestedRemedy
Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.4** P **495** L **53** # **275**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
No PICS item exists for this shall.

SuggestedRemedy
Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.4** P **495** L **54** # **276**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
No PICS item exists for this shall.

SuggestedRemedy
Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.5** P **496** L **27** # **278**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
No PICS item exists for this shall.

SuggestedRemedy
Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.5** P **496** L **5** # **277**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
No PICS item exists for this shall.

SuggestedRemedy
Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.5** P **497** L **34** # **279**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
No PICS item exists for this shall.

SuggestedRemedy
Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.6** P **498** L **4** # **280**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
This shall is a duplicate of the one on line 27 of page 496.

SuggestedRemedy
Remove one of the shall statements and update PICS.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.6** P **498** L **41** # **281**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
No PICS item exists for this shall.

SuggestedRemedy
Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.4.6** P **498** L **42** # **282**
Lynskey, Eric UNH-IOL

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

No PICS item exists for this shall.

SuggestedRemedy

Add PICS item or remove shall.

Proposed Response *Response Status* **O**

Cl **64** SC **64.5.4.1** P **501** L **6** # **258**
Lynskey, Eric UNH-IOL

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

Not connecting the SCB MAC to a bridge port is a recommendation according to 64.3.3.3. This is not mandatory and therefore does not require a PICS item.

SuggestedRemedy

Remove PICS item CC1.

Proposed Response *Response Status* **O**

Cl **64** SC **64.5.4.1** P **501** L **8** # **259**
Lynskey, Eric UNH-IOL

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

In item CC2, the value/comment should reflect 16 bit times instead of 32.

SuggestedRemedy

Change to 16.

Proposed Response *Response Status* **O**

Cl **64** SC **64.5.4.2** P **501** L **28** # **262**
Lynskey, Eric UNH-IOL

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

No shall exists for items OM4 or OM5.

SuggestedRemedy

Remove these two items.

Proposed Response *Response Status* **O**

Cl **64** SC **64.5.4.2** P **501** L **33** # **263**
Lynskey, Eric UNH-IOL

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

No shall exists for item OM6.

SuggestedRemedy

Remove the item.

Proposed Response *Response Status* **O**

Cl **64** SC **64.5.4.3** P **502** L **1** # **257**
Lynskey, Eric UNH-IOL

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

No shall statements exist that say the state diagrams must be implemented.

SuggestedRemedy

Add a single shall statement that covers all state diagrams, and will only require a single PICS item, or add shall statements for all state diagrams.

Proposed Response *Response Status* **O**

Cl **64** SC **64.5.4.3** P **502** L **8** # **256**
Lynskey, Eric UNH-IOL

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

No PICS item exists for figure 64-9, the OLT control parser.

SuggestedRemedy

Add as item and rename SM2 to ONU Control Parser.

Proposed Response *Response Status* **O**

Cl **64** SC **65.5.4.3** P **502** L **20** # **177**
Lynskey, Eric UNH-IOL

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

Need to activate cross references for Figure 64-19, 64-22, 64-25, 64-20, 64-23, 64-26, and 64-27.

SuggestedRemedy

Activate cross references.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-11** *P* **465** *L* **32** # **841**
Tom Mathey Independent

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

Block START PACKET INITIATE TIMER uses an assignment to "packet_initiate_timer" which is not defined anywhere in the entire document.
Same problem in Figure 64-12.

SuggestedRemedy

Provide definition.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-11** *P* **465** *L* **35** # **686**
Brown, Benjamin Independent

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

brackets

SuggestedRemedy

Why are the timer start commands in brackets and occasionally appear to be in a smaller font, both here and throughout this clause? This is unnecessary. The brackets should be removed and the font corrected.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-15** *P* **472** *L* **1** # **697**
Brown, Benjamin Independent

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

Service primitives need more precise definition

SuggestedRemedy

Service primitives, even those on internal interfaces deserve detailed descriptions. Create these descriptions, based on the format of 57.2.5. Then the description of these primitives in the messages section (64.3.8.5) don't need the same level of detail.

Can there be more than 1 MA_CONTROL.request primitive into a single block, even though it has different parameters? I've never seen this...

The primitives as shown here in this figure don't have all the parameters listed in 64.3.5.8. Make them all match.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-17** *P* **475** *L* **1** # **842**
Tom Mathey Independent

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

Variable "startTime" is used in start diagram without a definition.

SuggestedRemedy

Provide definition in 64.3.8.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-17** *P* **475** *L* **16** # **705**
Brown, Benjamin Independent

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

assignments buried within a function or primitive call

SuggestedRemedy

This just doesn't seem right. Make the assignment, then make the function or primitive call. There are numerous examples of this besides here:

Fig 64-17, state SIGNAL
Fig 64-18, states REGISTER, DISCOVERY_NACK, REGISTERED, DEREGISTER
Fig 64-20, states WATCHDOG TIMEOUT, REGISTER_REQ, RETRY, REGISTER_PENDING, DENIED, REGISTER_ACK, NACK, LOCAL DEREGISTER, REMOTE DEREGISTER
Fig 64-23, states SEND_REPORT and PERIODIC TRANSMISSIOn
Fig 64-25, states SEND GATE, PERIODIC TRANSMISSION
Fig 64-26, state INCOMING GRANT

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-19** *P* **477** *L* **17** # **843**
Tom Mathey Independent

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

Text "registerStatus" is used in state diagram, but no definition for "registerStatus" is provided in 64.3.8.2 Variables.
Text "flag" is used in state diagram, but no definition for "flag" is provided in 64.3.8.2 Variables.
Text "timestampDrift" is used in state diagram, but no definition for "timestampDrift" is provided in 64.3.8.2 Variables.

SuggestedRemedy

Add.
Variable "flag" has same problem in Figure 64-20.

Proposed Response *Response Status* **O**

Cl **64** SC **Figure 64-19** P **477** L **34** # **708**
Brown, Benjamin Independent

Comment Type **TR** *Comment Status* **D**
transition from COMPLETE DISCOVERY to REGISTERED

SuggestedRemedy
It seems like there's a few more things to check for this transition, such as "echo of LLIT and sync time" from fig 64-14

Proposed Response *Response Status* **O**

Cl **64** SC **Figure 64-19** P **477** L **35** # **706**
Brown, Benjamin Independent

Comment Type **TR** *Comment Status* **D**
Assignments in transitions

SuggestedRemedy
This definitely isn't right. You can't make an assignment within a transition, only a comparison. Is this what is intended?

A few other cases:
Fig 64-19, transition from REGISTERED to DEREGISTER
Fig 64-20, transition from WAIT to REGISTERING

Proposed Response *Response Status* **O**

Cl **64** SC **Figure 64-19** P **477** L **43** # **707**
Brown, Benjamin Independent

Comment Type **TR** *Comment Status* **D**
Global transition

SuggestedRemedy
The global transition into the DEREGISTER state should be mentioned somewhere in the text as well as here in the state diagram to give people some feel for what is intended. I didn't see it anywhere.

The same comment applies to the global transition into Fig 64-20, state Remote Deregister

Proposed Response *Response Status* **O**

Cl **64** SC **Figure 64-2** P **452** L **18** # **387**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Implementing resolution to D.0 comment #89.

SuggestedRemedy
Show optional FEC; keep synchronised with Fig 56-2. Even if FEC is not a true sublayer, show it on the layer diagram, perhaps 'PCS (with optional FEC' or use a footnote to PCS.

Proposed Response *Response Status* **O**

Cl **64** SC **Figure 64-20** P **478** L **1** # **844**
Tom Mathey Independent

Comment Type **T** *Comment Status* **D**
In block REGISTER_REQ the following assignment is made: insideDiscoveryWindow <= false. Thus the exit from REGISTER_REQ to RETRY which is dependent upon insideDiscoveryWindow = true can never happen.

SuggestedRemedy
Remove state RETRY

Proposed Response *Response Status* **O**

Cl **64** SC **Figure 64-20** P **478** L **1** # **845**
Tom Mathey Independent

Comment Type **T** *Comment Status* **D**
State diagram has two UCT entries with no priority.

SuggestedRemedy
As the state machine can not go to two different states at the same time, add priority to UCT.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-20** *P* **478** *L* **26** # **709**
Brown, Benjamin Independent

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

sync time

SuggestedRemedy

The variable syncTime isn't mentioned for this state diagram, only for the Report Processing state diagram. The variable sync time isn't mentioned at all. These need to be defined for this state diagram.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-23** *P* **481** *L* **23** # **712**
Brown, Benjamin Independent

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

Move "registered"

SuggestedRemedy

Add a global transition to WAIT state, using registered=FALSE
Remove "*registered" from transitions out of WAIT 2 state.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-23** *P* **481** *L* **29** # **846**
Tom Mathey Independent

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

Variable "registered" has no definition within clause 64.3.9.
Exits from state WAIT 2 are not mutually exclusive.

SuggestedRemedy

Add.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-26** *P* **487** *L* **13** # **847**
Tom Mathey Independent

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

Variable "registered" has no definition within clause 64.3.10.
Function removeHead, in block FLUSH, is defined as returning a value. However, the function call performs no assignment and is thus not needed.

SuggestedRemedy

Add a definition for registered.
As function removeHead performs no assignment, it is thus not needed in block FLUSH. Thus remove call to function. When removed, then the while statement has no statements to execute and can be removed. Then block FLUSH has no actions to perform. Thus remove block FLUSH, its inputs, and output transition.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-26** *P* **487** *L* **26** # **717**
Brown, Benjamin Independent

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

sync_time

SuggestedRemedy

Where is this defined?

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-26** *P* **487** *L* **28** # **718**
Brown, Benjamin Independent

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

counter++

SuggestedRemedy

This form of counter increment should either be defined or replaced with "counter = counter + 1". For a definition, see Clause 49.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-26** *P* **487** *L* **31** # **848**
Tom Mathey Independent

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

For figure 64-26, block INCOMING GRANT, the following have no definition within clause 64.3.10:
Counter as a timer,localTime, length[counter], tailGuard, discovery, sync_time.

Also, exit from block uses variable "n" which is not assigned to and has no definition.

SuggestedRemedy

Correct.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-27** *P* **488** *L* **12** # **719**
Brown, Benjamin Independent

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

isBroadcast(DA)

SuggestedRemedy

The DA in these frames is never the broadcast address, according to Figure 64-14, only the well known multicast address or the unicast source address.

In the transition from CHECK GATE TYPE to RANDOM WAIT states, this frame type's DA is the multicast address, according to Fig 64-14.
In the transition from CHECK GATE TYPE to TURN LASER ON states, this frame type's DA is also the multicast address, according to Fig 64-14.
In fact, only the actual register frame uses the unicast DA.
These packets may use the broadcast and unicast LLIDs but that can't be determined in this sublayer.

Also, don't check the "DA", check the "currentGrant.DA"

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-27** *P* **488** *L* **15** # **849**
Tom Mathey Independent

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

For figure 64-26, block RANDOM WAIT, THE TEXT "tq_SIZE" has no definition within clause 64.3.10.

SuggestedRemedy

Correct.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-5** *P* **457** *L* **15** # **676**
Brown, Benjamin Independent

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

OR function

SuggestedRemedy

This OR function should be described in 64.2.2.3 - it seems generic enough but I don't see it described anywhere else in any of the previous documents.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Figure 64-9** *P* **463** *L* **18** # **840**
Tom Mathey Independent

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

In block PARSE_TIMESTAMP, the assignment timestamp <= data[16:47] does not follow the definition of timestamp as given on p461, line 42 where timestamp requires two variables.

SuggestedRemedy

Harmonize definition which requires two variables with use with no variables.
Same problem two places in Figure 64-10, block PARSE TIMESTAMP
Same problem in Figure 64-11, block SEND TIMESTAMP FRAME

Proposed Response *Response Status* **O**

Cl **64** *SC* **general** *P* *L* # **166**
Ariel Maislos Passave Inc.

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

When variables with default values are used they me be reevaluated to default at states where they are not set

SuggestedRemedy

initialize all variables to their default value using an assignment operation at the Init state of each state machine where the variables are used.

Delete 'default value' setting for all variables.

Proposed Response *Response Status* **O**

Cl **64** *SC* **General** *P* **450** *L* # **557**
Grow, Robert Intel

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

The specification of the multi-point MAC protocol is a convoluted and confusing perversion of the 802.3 MAC. P2MP defines its own MAC protocol and reference to the Clause 4 MAC is confusing and does the implementer a disservice in choosing that indirect specification method.

SuggestedRemedy

Simplify the specification of P2MP by defining its MAC protocol directly.

Proposed Response *Response Status* **O**

Cl **64** *SC* **Table 64-1** *P* **489** *L* **17** # **720**
Brown, Benjamin Independent

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

Duplicate table

SuggestedRemedy

This table is a duplicate to that in Annex 31A. Remove it and use a reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.1** *P* **506** *L* **12** # **794**
Thompson, Geoffrey Nortel

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

The entire concept of this extension to emulate point-to-point operation seems to be a violation of the following text extracted from the Overview and Architecture, IEEE Std 802 clause 6.2.1 Service access points (SAPs)
"The MAC sublayer provides a single MAC service access point (MSAP) as an interface port to the LLC sublayer in an end station."
AND
"The Physical layer provides an interface port to a single MAC station,..."
This also seems to be a violation of the 5 Criteria commitment in Compatibility paragraph 1.

SuggestedRemedy

Alter draft to remain within original commitment.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.1** *P* **506** *L* **4** # **178**
Lynskey, Eric UNH-IOL

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

Need to activate cross reference for Clause 64.

SuggestedRemedy

Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.1.1** *P* **506** *L* **14** # **179**
Lynskey, Eric UNH-IOL

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

Need to activate cross reference to Figure 65-1.

SuggestedRemedy

Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.1.2** *P* **506** *L* **49** # **180**
Lynskey, Eric UNH-IOL

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

Need to activate cross reference for 64.1.2

SuggestedRemedy

Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.1.3.1** *P* **507** *L* **15** # **494**
Glen Kramer Teknovus

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

Not sure why variable "type" is needed. It is not used anywhere in the clause except in PICS table. If it is just to distinguish OLT from ONU, it should be part of MIB and has nothing to do with RS sublayer.

SuggestedRemedy

Remove variable definition

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.2.1** *P* **510** *L* **42** # **181**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross reference to Figure 65-3.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.2.2** *P* **510** *L* **54** # **182**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross reference to Figure 65-4.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.2.2.1** *P* **511** *L* **36** # **183**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to add cross reference to Figure 65-5, in two places: lines 36 and 44.

SuggestedRemedy
Add cross references.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.2.2.2.1** *P* **513** *L* **33** # **184**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to add cross reference to 64.3.10.1.

SuggestedRemedy
Add cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.2.2.2.1** *P* **513** *L* **34** # **185**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to add cross reference to 64.3.10.2.

SuggestedRemedy
Add cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.2.2.2.1** *P* **513** *L* **43** # **492**
Glen Kramer Teknovus

Comment Type **T** *Comment Status* **D**
"laser_control" is not an alias of PMD_SIGNAL.request(tx_enable). Laser_control variable represents the current state of the laser and is checked before making decisions to turn laser on or off.

SuggestedRemedy
change definition of laser_control to:
This variable represents the status of the laser.

Change TURN_LASER_ON code to:
laser_control = ON
PMD_SIGNAL.request(true)

Change TURN_LASER_OFF code to:
laser_control = OFF
PMD_SIGNAL.request(false)

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.2.2.2.1** *P* **513** *L* **7** # **491**
Glen Kramer Teknovus

Comment Type **T** *Comment Status* **D**
Figure 65-5. In D2.2, the Data Detector block has been moved below FEC encoder. Thus, in figure 65-5, the code groups corresponding to FEC parity should be shown as DATA, not as IDLEs.

SuggestedRemedy
See above

Proposed Response *Response Status* **O**

Cl **65** SC **65.2.2.2.3** P **514** L **14** # **186**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to add cross reference to Figure 65-7.

SuggestedRemedy
Add cross reference.

Proposed Response *Response Status* **O**

Cl **65** SC **65.2.2.3** P **514** L **30** # **493**
Glen Kramer Teknovus

Comment Type **E** *Comment Status* **D**
"Data Decoder" should be "Data Detector"

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **65** SC **65.2.2.3** P **514** L **30** # **187**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to add cross reference to Figure 65-6.

SuggestedRemedy
Add cross reference.

Proposed Response *Response Status* **O**

Cl **65** SC **65.2.3** P **514** L # **312**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D**
Is FEC reference G.975 clear enough? especially which bit first (least/most 0 or 7?)?
Sorry about the half-baked comments, I ran out of time.

SuggestedRemedy
Clarify as necessary.

Proposed Response *Response Status* **O**

Cl **65** SC **65.2.3** P **514** L # **311**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D**
Will a FEC link be plagued by false carrier events from errored idles?

SuggestedRemedy
?

Proposed Response *Response Status* **O**

Cl **65** SC **65.2.3.1** P **516** L **11** # **309**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D**
Will FEC frames all /V/ make the error counter(s) count too fast?

SuggestedRemedy
If so, replace 'all octets in an uncorrectable block' with 'at least nine octets in an uncorrectable block' (the number which is just too much for the FEC to be sure of correcting).

Proposed Response *Response Status* **O**

Cl **65** SC **65.2.3.3.2** P **517** L **34** # **188**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross reference to Figure 65-4.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** SC **65.2.3.3.4** P **517** L **52** # **189**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross reference to figure 65-9.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.2.3.4.4** *P* **521** *L* **3** # **190**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross reference to 60.1.5.1. Same comment on line 3 of the next page.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.2.3.5.1** *P* **523** *L* **53** # **191**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross reference for Figure 65-11.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.2.3.6.1** *P* **525** *L* **54** # **192**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross reference to 45.2.8.1

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.2.3.6.3** *P* **528** *L* **10** # **193**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross reference to 45.2.8.3.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.3** *P* **528** *L* **14** # **307**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D**
Titles of 65.3 (PX-D) and 65.3.1 (ONU) are not compatible.

SuggestedRemedy
Change title of 65.3 to 'Extensions to PMA for 1000BASE-PX';
Change first sentence to 'In addition to the requirements defined in Clause 36, P2MP operation imposes the following requirement on the PMA sublayer of the OLT and ONU.'
Use two sub-subclauses, one for PX-D and one for PX-U.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.3.1** *P* **528** *L* **14** # **381**
Dawe, Piers Agilent

Comment Type **TR** *Comment Status* **D**
Need to define the PMA primitive for laser control shown in fig 65-4.

SuggestedRemedy
In sub-subclause, for PX-U PMA (see another comment), define this PMA primitive for laser control formally:

'The following additional primitives is defined:
....'
The semantics of the service primitive are x(y). Explanation, When generated, effect of receipt.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.3.1** *P* **528** *L* **22** # **194**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross reference to 60.7.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.3.3.2** *P* **528** *L* **47** # **195**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross references to 60.8.13.1 and 60.8.13.2.

SuggestedRemedy
Activate cross references.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.4.4.4** *P* **532** *L* **38** # **196**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to add cross references for Figure 65-6 and Figure 65-7.

SuggestedRemedy
Add cross references.

Proposed Response *Response Status* **O**

Cl **65** *SC* **65.4.4.6** *P* **533** *L* **6** # **197**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross reference for figure 65-11.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **65** *SC* **Figure 65-3** *P* **511** *L* **13** # **386**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Implementing resolution to D.0 comment #89.

SuggestedRemedy
Show optional FEC; keep synchronised with Fig 56-2. Even if FEC is not a true sublayer, show it on the layer diagram, perhaps 'PCS (with optional FEC' or use a footnote to PCS.

Proposed Response *Response Status* **O**

Cl **65** *SC* **Figure 65-4** *P* **512** *L* **36** # **407**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
You can enhance this diagram by showing TP1 and TP4 on it. Also, 'ftx_code-group'? Should it be dtx_code-group?

SuggestedRemedy
Per comment.

Proposed Response *Response Status* **O**

Cl **66** *SC* *P* **536** *L* **14** # **553**
Grow, Robert Intel

Comment Type **TR** *Comment Status* **D**
Is P2MP half duplex or full duplex this week?

SuggestedRemedy
If I have it right, change to: "in the case of P2MP the MAC should be operating in full duplex mode,"

Proposed Response *Response Status* **O**

Cl **66** *SC* *P* **536** *L* **7** # **198**
Lynskey, Eric UNH-IOL

Comment Type **E** *Comment Status* **D**
Need to activate cross reference to clause 65. Same comment clause 64 in line 17.

SuggestedRemedy
Activate cross reference.

Proposed Response *Response Status* **O**

Cl **66** *SC* **66** *P* **535** *L* **1** # **380**

Dawe, Piers — Agilent

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

'Don't mess with the legacy Ethernet.'

The 'required' aspect of this clause is unworkable, as it tries to make a tight association between PMD type, network type ('access' vs. 'campus') and e.g. PCS functionality. See my comment against 57.1.2 for more explanation.

Further, this clause affects 10G Ethernet, which doesn't seem to be part of 'Ethernet in subscriber access' at all - which subscribers get access to that sort of 'broadband' access!? And it tries to do it in a way which is controversial (see TRs against previous drafts) and doesn't make sense to me.

The proposed changes would encourage pointless and misleading behaviour which is presently forbidden: transmitting to a station which is sending 'remote fault' or 'far end fault indication' - saying it can't hear you. If this is forbidden now, we would need a reason to overturn the rules.

Clause 66 RS, PCS and PMA are shown as optional in Table 56-2. That's as it should be (except for 1000BASE-PX-D, PON OLT).

SuggestedRemedy

See attached file for proposed revision of clause 66, including reasons why. http://www.ieee802.org/3/efm/public/comments/d3_0/pdfs/dawe_2_0104.pdf ?

Proposed Response *Response Status* **O**

Cl **66** *SC* **66** *P* **536** *L* **15** # **554**

Grow, Robert — Intel

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

Archiac text.

SuggestedRemedy

Change "this" at end of line to "the". On line 17, at end of line, change "the bridge protocol." to "802.1 protocols."

Proposed Response *Response Status* **O**

Cl **66** *SC* **66.1.2.3** *P* **538** *L* **13** # **199**

Lynskey, Eric — UNH-IOL

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

Need to activate cross reference to figure 66-2.

SuggestedRemedy

Activate cross reference.

Proposed Response *Response Status* **O**

Cl **66** *SC* **66.2.1.13.1** *P* **77** *L* **10** # **556**

Grow, Robert — Intel

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

The operation of these bits is not consistent with that previously used in 802.3. Control bits also be status bits is not a common function. STA if writing a valid value to a control register should be able to read that register and always get back the value written unless the device/MMD has been reset.

SuggestedRemedy

Redefine and separate the control and status functions of the bits and all similarly confusing bits.

Proposed Response *Response Status* **O**

Cl **66** *SC* **66.2.2.3** *P* **539** *L* **53** # **509**

Grow, Robert — Intel

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

Error in references.

SuggestedRemedy

"Change to Figure 36-5 and Figure 36-6"

Proposed Response *Response Status* **O**

Cl **66** *SC* **66.3.2.2** *P* **540** *L* **41** # **552**
Grow, Robert Intel

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

The true value needs to be better tied to the register bits that define unidirectional being enabled.

SuggestedRemedy

TRUE; Unidirectional capability enabled (register bits 0.1 = 1 and 1.7 = 1, see Clause 22)

Proposed Response *Response Status* **O**

Cl **67** *SC* **67.2** *P* **547** *L* **50** # **376**
Dawe, Piers Agilent

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

If we get some text together for clause 60 explaining the interoperability of certain 100BASE-PX10/20s,

SuggestedRemedy

create a new subclause here with some similar information: how an over-achieving DTE can be used to allow for future network expansion.

Proposed Response *Response Status* **O**

Cl **67** *SC* **67.4** *P* **548** *L* **3** # **377**
Dawe, Piers Agilent

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

Subclause title is confusing. 2BASE-TL and 10PASS-TS can be duplex or half duplex depending which layer you look at. Their rates can vary so they should not be referred to as '2 Mb/s' or '10 Mb/s'.

SuggestedRemedy

Change to 'Topology limitations in access networks'. Change first sentence to:
'The physical size of 2BASE-TL, 10PASS-TS, full duplex 100BASE-X and point to point 1000BASE-X, 1000BASE-PX and 10GBASE networks is not limited by the round-trip collision propagation delay. At the end, the number of ONU DTEs in a '

Proposed Response *Response Status* **O**

Cl **67** *SC* **67.6.1** *P* **549** *L* **3** # **408**
Dawe, Piers Agilent

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

10G doesn't have unidirectional registers, unidirectional must be used for 1000BASE-PX-D, should not be used for 1000BASE-PX-U.

SuggestedRemedy

Change to 'Up to 2004, compliant 100 Mb/s, 1000 Mb/s and 10 Gb/s implementations were not able to encode and transmit data while one direction of the link was non-operational. Some physical layer devices have the optional ability to encode and transmit data while one direction of the link is non-operational.

For 100BASE-X and 1000BASE-X, this capability is indicated by the management register bit 1.7, The Unidirectional OAM Ability can be found in Table 22-8 and the feature may be enabled via the management register bit 0.1 Unidirectional OAM Enable found in Table 22-7. This bit should be set only when the OAM sublayer is present and enabled or for a 1000BASE-PX-D PHY. Otherwise, MAC Client frames will be sent across a unidirectional link potentially causing havoc with bridge and other higher layer protocols. The feature should not be enabled for 1000BASE-PX-U PHYs in service, to avoid simultaneous transmission by more than one ONU.'
Or without the 10G part if we abandon 10G unidirectional.

Proposed Response *Response Status* **O**

Cl **67** *SC* **67.6.2** *P* **549** *L* **15** # **13**
Squire, Matt Hatteras Networks

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

It is possible for both ends of a link to be "active."

SuggestedRemedy

Change sentence to "At least one end of a given link..." from "One end of a given link...".

Proposed Response *Response Status* **O**

Cl **67** *SC* **Table 67-1** *P* **546** *L* **27** # **371**
Dawe, Piers Agilent

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

Number of PHYs segment?

SuggestedRemedy

Number of DTEs per segment?

Proposed Response *Response Status* **O**

Cl **67** SC **Table 67-1** P **546** L **46** # **375**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
'nominal reach in the table.' Which table? one of those DSL profiles tables?

SuggestedRemedy
Change to 'this table'.

Proposed Response *Response Status* **O**

Cl **67A** SC P **606** L **10** # **11**
Murphy, Tom Infineon

Comment Type **E** *Comment Status* **D**
Move these references to the correct clause

SuggestedRemedy
see comment

Proposed Response *Response Status* **O**

Cl **67A** SC **67A.1** P **601** L **47** # **412**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Incomplete sentence.

SuggestedRemedy
'particular relevance for Clauses 58, 59 and 60.' *ref*

Proposed Response *Response Status* **O**

Cl **67A** SC **67A.1** P **602** L **12** # **413**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Humidity, vibration, etc. aren't so minor.

SuggestedRemedy
Insert another word: 'considered to be of such major importance'

Proposed Response *Response Status* **O**

Cl **67A** SC **67A.1** P **605** L **10** # **418**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Note these informative references should be moved to Annex A at some stage.

SuggestedRemedy
Per comment

Proposed Response *Response Status* **O**

Cl **67A** SC **67A.1.1** P **602** L **18** # **414**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Have overlooked a PMD

SuggestedRemedy
'100BASE-LX10 and 1000BASE-LX10 links'

Proposed Response *Response Status* **O**

Cl **67A** SC **67A.1.1** P **602** L **40** # **156**
Edward Beili Actelis Networks Inc.

Comment Type **T** *Comment Status* **D**
2BASE-TL/10PASS-TS are defined for both Head-End and Customer Premises. Clause 61 defines -O and -R subtypes. Note that it is possible that a Phy chip is manufactured, hard wired to a specific subtype. e.g. -R.

SuggestedRemedy
Specify 2BASE-TL-O/10PASS-TS-O for the Head-End, 2BASE-TL-R/10PASS-TS-R for the Customer Premise.

Proposed Response *Response Status* **O**

Cl **67A** SC **67A.1.1** P **602** L **48** # **415**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Haven't really spelt out the point of the sentence.

SuggestedRemedy
Insert another word: 'block or office, a weatherprotected space such as'

Proposed Response *Response Status* **O**

Cl **67A** *SC* **67A.3** *P* **604** *L* **48** # **416**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Should be no space between number and degree symbol

SuggestedRemedy
Remove the space after 85

Proposed Response *Response Status* **O**

Cl **67A** *SC* **67A.3.1** *P* **605** *L* **10** # **417**
Dawe, Piers Agilent

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

SuggestedRemedy
Change degC to K

Proposed Response *Response Status* **O**

Cl **67A** *SC* **67A.3.1** *P* **605** *L* **17** # **432**
Law, David 3Com

Comment Type **E** *Comment Status* **D**
The text 'Clause 66A.3 discusses ..' and 'Clause 66A.4 discusses ..' is incorrect as these are not clauses, they are subclauses (or should that be subannexes - check with the IEEE editor). In addition 66A.3 and 66A.4, in fact Annex 66A, doesn't seem to exist.

SuggestedRemedy
See comment.

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* *L* # **504**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
People listed as officers should not be listed again in following member list.

SuggestedRemedy
Fix or flag for publication editor.

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* *L* # **789**
Thompson, Geoffrey Nortel

Comment Type **TR** *Comment Status* **D**
Draft does not meet the following "shall" requirement that I can find.

IEEE-SA Standards Board Bylaws
5.2.2.3 Sponsor balloting group (paragraph 3, sentence #2)

A statement of the type of balloting membership to be used shall be included in all versions of the draft standard and the final approved standard.

SuggestedRemedy
Add a statement to the front matter that indicates that this project is being put forth under "individual" balloting.

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* *L* # **506**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
This page is obsolete.

SuggestedRemedy
Delete the page.

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* *L* **12** # **501**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
Grammar problem, missing "of".

SuggestedRemedy
Change to: ". . . exchange of IEEE Std 802.3 frames . . ."

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* *L* **26** # **502**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
Grammar problem, missing "the".

SuggestedRemedy
Change to: ". . . comparison to the last pubished . . ."

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* *L* **29** # **503**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
Typo, incorrect year

SuggestedRemedy
Change to: "IEEE Std 802.3af-2003".

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* *L* **3** # **746**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
"To be supplied by IEEE" should be in an editor's note.

SuggestedRemedy
Add note.

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* *L* **3** # **742**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
TM symbol should be on 802.3, not on year.

SuggestedRemedy
Move symbol.

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* *L* **3** # **744**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
The editor's box needs a note to explain that the introduction should be deleted prior to publication.

SuggestedRemedy
Add note.

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* *L* **4** # **505**
Grow, Robert Intel

Comment Type **E** *Comment Status* **D**
Imprecise correlation of published clauses. Annex 43B is not in IEEE Std 802.3-2002, it is in IEEE Std 802.3ae-2002.

SuggestedRemedy
Change to read: "Changes to previously approved clauses of IEEE Std 802.3" or "Changes to previously approved clauses of IEEE Std 802.3-2002 (as ammended)"

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* *L* **8** # **745**
Booth, Brad Intel

Comment Type **E** *Comment Status* **D**
List of EFM staff is incomplete.

SuggestedRemedy
Update list to include Glen Kramer. I would highly recommend changing the format so that respective clauses and annexes are listed with the editor's name. David Law and Scott Simon should have their editorial roles listed.

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* **1** *L* **31** # **388**

Dawe, Piers Agilent

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

Need to declare that we are modifying 10G Ethernet - or don't modify it.
We do not need the words 'the concept of', they aren't really true; the concept was there before even an earlier draft.
The mechanism is for transport of OAM information, not a mechanism for OAM itself (which would be in another standard). Need to declare the unidirectional options. Just to save space, can delete the bit about 'network operation and troubleshooting' - readers will have at least a vague idea what OAM is for from the name.

SuggestedRemedy

'This draft also introduces 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 transporting information for network Operations, Administration and Maintenance (OAM) is included. To support these innovations, options for unidirectional transmission of frames are provided for 100BASE-X, 1000BASE-X and 10G Ethernet.'

Proposed Response *Response Status* **O**

Cl **99** *SC* *P* **4** *L* **34** # **389**

Dawe, Piers Agilent

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

This sentence badly under-sells EFM. Remember 100BASE-LX10, 1000BASE-LX10, OAM transport and possibly OAM unidirectional transport are likely to be used in campus networks.

SuggestedRemedy

Change to 'This document defines services and protocol elements that permit the exchange IEEE Std 802.3 format frames at a variety of rates and using a range of media including those found in subscriber access networks as well as campus and telecoms networks.' If appropriate, add further sentences mentioning PON, OAM transport and unidirectional ability.

Proposed Response *Response Status* **O**

Cl **99** *SC* **99** *P* **11** *L* **9** # **67**

Beck, Michael Alcatel Bell n.v.

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

The Greek symbol "gamma" is shown. Symbols "alpha" and "beta" are not shown, though they are used in the text.

SuggestedRemedy

Add symbols "alpha" and "beta".

Proposed Response *Response Status* **O**