Cl **22** *SC* *P* **7** *L* **1** # **929**

Don Pannell — Marvell Semiconductor

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

Clause 22 needs to be modified to support a standard way to access Clause 45 registers. Without this new 802.3ah PHYs will not be able to connect with existing MII based CPUs and switches.

SuggestedRemedy

A proposal "pannell_1_1102" will be presented at the November 2002 meeting.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **22** *SC* **22.2.4.1** *P* **9** *L* **17** # **913**

Tom Mathey — Independent

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

If we are opening up the bit assignments for the control register, how about adding bits for resolved speed, duplex, and a pass/fail indication for resolution to a common ability?

SuggestedRemedy

Use 0.5:4 for speed as follows:
Rate Indication: These bits indicate the result of the auto-negotiation for data rate arbitration as follows:
0.5 0.4
1 1 = Reserved
1 0 = 1000Base-X was the highest common denominator
0 1 = 100Base-TX was the highest common denominator
0 0 = 10Base-T was the highest commondenominator

Use 0.3 for Duplex as follows:
Duplex Indication: This bit indicates the result of the auto-negotiation for duplex arbitration as follows:
0: half-duplex was the highest common denominator
1: full-duplex was the highest common denominator

Use 0.2 for common resolution as follows:
Duplex Indication: This bit indicates the result of the auto-negotiation for common resolution as follows:
0: arbitration did not resolve to a greatest commmon demonitator
1: arbitration did resolve to a greatest commmon demonitator

Add supporting text (at editors choice) in new paragraphs.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is considered outside the scope of the PAR.

Cl **22** *SC* **22.2.4.1** *P* **9** *L* **18** # **178**

Squire, Matt — Hatteras Networks

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

"OAM Enable" seems a bit misleading for the title of this control bit as it only controls the undirectional xmit capability of the PHY. Ditto lines 26 and 38.

SuggestedRemedy

Change "OAM Enable" to "Enabled Unidirectional OAM"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **22** *SC* **22.2.4.1.12** *P* **9** *L* **40** # **180**

Squire, Matt — Hatteras Networks

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

I believe the statement "the PHY shall return a alue of zero in bit 0.1" is incorrect as the return value should be in bit 1.7.

SuggestedRemedy

Change 0.1 to 1.7, and spell value correctly:)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The point of this text is to make 0.1 a read only bit. If the device lacks the ability to operate unidirectionally then bit 0.1 will never return the value 1. It always returns the value 0.

Cl **22** *SC* **22.2.4.1.12** *P* **9** *L* **42** # **115**

Martin, David — Nortel Networks

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

Typo

SuggestedRemedy

Change "alue" to "value".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **22** *SC* **22.2.4.1.12** *P* **9** *L* **42** # **331**

Brown, Benjamin — AMCC

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

misspelling

SuggestedRemedy

Replace "alue" with "value"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **22** *SC* **22.2.4.2** *P* **10** *L* **1** # **1**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **D**
Table is incorrectly numbered and named.

SuggestedRemedy
Should read "Table 22-8 - Status register bit definitions"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **22** *SC* **Table 22-7** *P* **9** *L* **15** # **179**
Squire, Matt Hatteras Networks

Comment Type **E** *Comment Status* **D**
Why are we skipping bits 5:2 instead of just placing the new bit in sequential order?

SuggestedRemedy
Put it in the first available bit.

Proposed Response *Response Status* **W**
PROPOSED REJECT.

This is an attempt to reconcile this register with the x.0.15:0 registers from Clause 45. In this clause, all of these registers use bits 5:2 for Speed Selection. Their next reserved bit is bit 1.

Cl **22** *SC* **Table 22-7** *P* **9** *L* **17** # **330**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **D**
Throughout the changed section of this clause, the MII is referenced where both the MII and GMII should be referenced. Other locations include:

22.2.4.1.12, page 9, lines 40, 42 & 43
Table 22-7
22.2.4.2.8, page 10, lines 17 & 18

SuggestedRemedy
Replace MII with MII/GMII

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **24** *SC* *P* **11** *L* **34** # **2**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **D**
Tabs missing in Revision History section.

SuggestedRemedy
Add tabs for readability.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **24** *SC* **24.2.2.1.7** *P* **12** *L* **27** # **4**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **D**
Register is incorrectly named.

SuggestedRemedy
Change "MDIO register bits" to "Coding Violation Counter register bits"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

This text came from an attempt to borrow text from 49.2.14.1. However, to borrow this appropriately, the word "bits" should be removed. The idea is to point to the MDIO register bits and not simply to a counter name.

Cl **24** *SC* **24.2.3.2** *P* **12** *L* **10** # **181**
Squire, Matt Hatteras Networks

Comment Type **E** *Comment Status* **D**
To go along with an earlier comment, "OAM capability" is misleading.

SuggestedRemedy
Maybe call this "unidirectional OAM capability" ?

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **24** *SC* **24.2.3.2** *P* **12** *L* **10** # **3**

Daines, Kevin World Wide Packets

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

Register bit is incorrectly named.

SuggestedRemedy

Change "MDIO register bit 0.1" to "Control register bit 0.1".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This text came from an attempt to borrow text from 49.2.14.1. However, to borrow this appropriately, the word "bit" should be removed. The idea is to point to the MDIO register bits and not simply to a counter name.

Cl **24** *SC* **24.2.4.2** *P* **12** *L* **44** # **434**

Cravens, George Mindspeed

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

Line states "Add new term at the top of Figure 24-8:", but there's no term shown. (It seems that the section on 24.3.4.5 got inserted before Figure 24-8.)

SuggestedRemedy

Move Section 24.3.4.5 to follow Figure 24-8.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This is a formatting thing that the chief editor needs to help with. It could be that the figure is allowed to float to reduce the amount of white space between text references and the figures.

Cl **24** *SC* **Figure 24-8** *P* **13** *L* **1** # **5**

Daines, Kevin World Wide Packets

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

Left-pointing assignment operator arrows have been lost from this figure.

SuggestedRemedy

Replace the less-than sign with left pointing assignment operator arrows (ALT-0220) in Figure 24-8. 21 occurrences.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

I agree. I need help from the chief editor on this.

Cl **24** *SC* **Figure 24-8** *P* **13** *L* **2** # **6**

Daines, Kevin World Wide Packets

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

Not equal to symbol has been changed to 1/4 symbol.

SuggestedRemedy

Replace 1/4 symbol with not equal to symbol (ALT-0185). One occurrence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

I agree. I need help from the chief editor on this.

Cl **30** *SC* *P* **15** *L* **30** # **7**

Daines, Kevin World Wide Packets

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

Tabs missing from Revision History section.

SuggestedRemedy

Add tabs for readability.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.11** *P* **30** *L* **4** # **944**

Ho-Sook Lee ETRI

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

It is not necessary to collect statistics for each PDU type separately. The attributes defined in Draft 1.0, such as OAM_TX_Frames and OAM_RX_Frames, should be added to collect the statistics for the toal OAM traffics.

SuggestedRemedy

We recommend that OAM_TX_FRames and OAM_RX_Frames be added as the attributes for the statistics of the toal OAM traffics.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Those attributes already exist. See 30.11.1.1.3 and 30.11.1.1.4. Also, management is optional so implementers may choose which counters to provide.

Cl **30** *SC* **30.11.1.1.20** *P* **35** *L* **5** # **914**

Tom Mathey Independent

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

30.11.1.1.20 aOAMVariableRequestRx is a duplicate of 30.11.1.1.17 aOAMVariableRequestRx

SuggestedRemedy

Nuke or replace with intended text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

30.11.1.1.20 will be removed.

Cl **30** *SC* **30.11.1.1.20** *P* **35** *L* **518** # **111**

Martin, David Nortel Networks

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

Duplicate subclause.

SuggestedRemedy

This entire subsection looks like a duplicate of subsection 30.11.1.1.17 on the previous page. This duplicate should be deleted.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See comment #111.

Cl **30** *SC* **30.11.1.2** *P* **36** *L* **15** # **114**

Martin, David Nortel Networks

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

Missing OAM Event Notification request.

SuggestedRemedy

Add an action subsection for "acOAMEventNotification".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.11.1.2** *P* **36** *L* **15** # **112**

Martin, David Nortel Networks

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

Missing OAM Loopback request.

SuggestedRemedy

Add an action subsection for "acOAMLoopback".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.11.1.2** *P* **36** *L* **15** # **113**

Martin, David Nortel Networks

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

Missing OAM Variable request.

SuggestedRemedy

Add an action subsection for "acOAMVariableRequest".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.2.1** *P* *L* # **10**

Daines, Kevin World Wide Packets

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

2nd paragraph contains a description of the counters within Clause 30. This will need to be changed to support 30.5.1.1.12, since aPCSCodingViolation will not wrap around.

SuggestedRemedy

Change first three sentences to read as follows:
"Most counters defined in this specification are assumed to be wrap-around counters. Wrap-around counters are those that automatically go from their maximum value (or final value) to zero and continue to operate. These unsigned counters do not provide for any explicit means to return them to their minimum (zero), i.e., reset. Because of their nature, wrap-around counters should be read frequently enough to avoid loss of information. These counters are identified with as nonresettable counters.

Some counters defined in this specification do not wrap around. Instead, when they reach their maximum value, they stop incrementing. These counters are identified as non-wrap-around counters."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.1.1.20** *P* *L* # **61**

Marris, Arthur — Cadence Design Foun

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

MAC-PHY rate matching for copper uses CRS deferral. There is counter defined in clause 30 called FramesWithExcessiveDeferral. The contents of this counter should be ignored when using an EFM copper PHY.

SuggestedRemedy

Change last sentence of subclause 30.3.1.1.20 to read
"The contents of this attribute are undefined for MAC entities operating in full duplex mode or with Clause 61 PHYs."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **23** *L* **24** # **30**

Kimpe, Marc — ADTRAN

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

The draft as presently written includes some of the copper Phys but not all of them. The draft should be consistent and list either no options or all options. 2PASS-TL is listed but 2BASE-TL is not. The same comment applies to
clause 30.3.2.1.3 page 24 line 3 with the same remedy.

SuggestedRemedy

Add "2BASE-TBDD Clause 61 TBD D"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.12** *P* **28** *L* **30** # **9**

Daines, Kevin — World Wide Packets

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

Increment rate is missing. However, this counter does not rollover. Need to address.

SuggestedRemedy

Change APPROPRIATE SYNTAX section to read:
"Generalized non-wrap-around counter. This counter has a maximum increment rate of 100 000 000 counts per second for 100 Mb/s implementations. However, this counter does not wrap around and instead remains at its maximum value until read."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Math is wrong, should be "25 000 000" counts per second. 100 Mb/s PHYs use MII's nibble-wide data path which results in 25 million nibbles per second.

Also, since this counter doesn't scale in the same way others do from 100 Mb/s to 1000 Mb/s some clarification should be added.

Add "This counter has a maximum increment rate of 125 000 000 counts per second for 1000 Mb/s implementations." since GMII octet-wide data path is used.

Cl **30** *SC* **30.5.1.1.12** *P* **28** *L* **33** # **110**

Martin, David — Nortel Networks

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

Missing 2 and 10 Mb/s cases.

SuggestedRemedy

Add 2 and 10 Mb/s cases. Add the following: "For 2 Mb/s operation it is a count of the number of times…For 10 Mb/s operation it is a count of the number of times…"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Is this to cover EFM Cu rates?

Cl **30** *SC* **30.5.1.1.12** *P* **28** *L* **34** # **8**

Daines, Kevin World Wide Packets

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

Behaviour missing.

SuggestedRemedy

Change Behaviour to read:
"For 100 Mb/s operation it is a count of the number of times an invalid code-group is received, other than the /H/ code-group. For 1000 Mb/s operation it is a count of the number of times an invalid code-group is received, other than the /V/ code-group. When it reaches all ones, it stops incrementing."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **25** *L* **25** # **31**

Kimpe, Marc ADTRAN

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

2PASS-TL and 2BASE-TL are copper PHYS listed in clause 63 that are not listed here.

SuggestedRemedy

Add the following lines
2BASE-TL Voice Grade UTP PHY C as specified in clause 63
2PASS-TL Voice Grade UTP PHY D as specified in clause 63

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **36** *SC* **36** *P* **39** *L* **36** # **13**

Daines, Kevin World Wide Packets

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

Tabs missing in Revision History section.

SuggestedRemedy

Add tabs for readability.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **36** *SC* **36.1.2** *P* **962** *L* # **490**

Dawe, Piers Agilent

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

36.1.2 Objectives says:
"The following are the objectives of 1000BASE-X:
....
f)To allow for a nominal network extent of up to 3 km, including
....
4)DTE/DTE links of 3000 m (using fiber);

SuggestedRemedy

Sort out the range. 20 km if PON uses clause 36, 10 if not. Are there any delay ("logical reach") implications with these distances?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Perhaps removing the objectives associated with link distances and media types would be a better remedy. That way, 36 won't need to be opened each time a PMD is added.

Certainly, PMD specific information is contained in the respective PMD clauses. See Table 38-2 and 39.1 for instance.

Do we lose anything by removing 36.1.2 bullets (e) and (f)?

Cl **36** *SC* **36.2.4.19** *P* **40** *L* **16** # **11**

Daines, Kevin World Wide Packets

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

Counter behavior should be clarified. Intentional errors should not be counted.

SuggestedRemedy

Change:
"When the receiver is in normal mode, coding_violation_counter counts once for each invalid code-group received."

to read:
"When the receiver is in normal mode, coding_violation_counter counts once for each invalid code-group received. The single code-group Error_Propagation ordered_set (/V/) is not considered an invalid code-group and as such is not counted when received."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **36** *SC* **36.2.5.1.3** *P* **40** *L* **23** # **12**
Daines, Kevin World Wide Packets

Comment Type **T** *Comment Status* **D**
Register is incorrectly named.

SuggestedRemedy
Change "MDIO register bit 0.1" to "Control register bit 0.1"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

This text came from an attempt to borrow text from 49.2.14.1. However, to borrow this appropriately, the word "bit" should be removed.

Cl **36** *SC* **36.2.5.1.3** *P* **66** *L* **26** # **182**
Squire, Matt Hatteras Networks

Comment Type **E** *Comment Status* **D**
Echo earlier comment: oam_enable seems misleading

SuggestedRemedy
"Unidirectional OAM enable"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **36** *SC* **36.3.9** *P* **41** *L* **4** # **14**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **D**
Spelling.

SuggestedRemedy
Change "equalt" to "equal".

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **36** *SC* **36.3.9** *P* **41** *L* **4** # **863**
Thatcher, Jonathan World Wide Packets

Comment Type **E** *Comment Status* **D**
Spelling error: "equalt"

SuggestedRemedy
Remove T

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

See comment #14.

Cl **36** *SC* **36.3.9** *P* **41** *L* **4** # **333**
Brown, Benjamin AMCC

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

SuggestedRemedy
Replace "equalt" with "equal"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

See comment #14.

Cl **36** *SC* **36.3.9** *P* **41** *L* **4** # **332**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D**
What should the COM_DET assert limit be when PMA_TX_CLK is not equal to twice the PMA_RX_CLK frequency?

SuggestedRemedy
Shouldn't it be the same value?

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Need help here from Vipul Bhatt/Optics STF.

Cl **43B** *SC* **43B.2** *P* **424** *L* **28** # **564**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
I wasn't quite sure what "per link" means in a PON scenario. I guess you mean per outstation: thus the head end connected to 16 outstations could handle up to 1600 frames/s. Also it's not clear if "maximum length frames" means the recommended maximum, 128 octets, as above, or the hard maximum ~1500 octets.

SuggestedRemedy
Please clarify.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

As Piers points out, OAM would result in a maximum of 10 frames per ONU. The maximum length OAMPDU is 1518 octets.

These clarifications will be added.

Cl **43B** *SC* **43B.2** *P* **555** *L* **47** # **183**

Squire, Matt — Hatteras Networks

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

Says the slow protocols specified in 43 conform to this recommendation. Doesn't mention OAM.

SuggestedRemedy

Change NOTE to be:
The LACP and Marker protocols defined in Clause 43 conform to this maximum frame size recommendation. The OAM protocol may generate frames greater than 128 octets.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **1.6.3** *P* **76** *L* **50** # **146**

Kramer, Glen — Teknovus

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

OAM is being implemented as a tool to monitor and control remote end including some form of data flow control (ex: loopback). As such, OAM PDUs should not use the same data path that they ultimately control.

Additionally, when a device is placed in a loopback mode, data frames from the client will be blocked (see Fig 55-3). But client may also contain OAM PDUs that use the same data path. These OAM PDUs should be transmitted even in the loopback mode. It is not clear how MAC Client will know that said OAM PDUs can be transmitted, but that some regular data frames cannot.

SuggestedRemedy

A logical way to implement OAM is to not use MA_DATA path. OAM PDUs should have a separate Ethertype (OAM Control) and use MA_OAM.reguest and MA_OAM.indication primitives.

The advatages of having a separate MA_OAM primitives are
(1) OAM-capable devices still can support PAUSE operation
(2) Will not subject OAM traffic to any rate limit
(3) Avoids problems with OAM PDUs blocked behind data frames in the MAC Client.
(4) Will send a positive message to the customers saying that 802.3ah recognizes the importance of OAM in the access environment (enough so that we dedicate a new Ethertype to it)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

OAMPDUs do not originate in the MAC Client sublayer. Rather, they originate in Management (STA). Since that misconception was the crux of the issue, the OAM Editor feels the "advantages" listed in the Suggested Remedy are not applicable.

Cl **55** *SC* **4.2** *P* **79** *L* **39** # **148**

Kramer, Glen — Teknovus

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

There are the following problems with using loopback in P2MP:

(1) In ONU, data frames may need to be buffered in the OAM sublayer until the timeslot arrives. The buffer may need to be very large. Also this buffer will be used only during loopback. At all other times it will remain empty.

(2) REPORT message is generated by ONU's MAC Control Client based on queue size in ONU's MAC Client. MAC Control Client doesn't see the buffer inside OAM layer, therefore the REPORT message cannot include the size of OAM buffer

(3) If MAC Client contains some OAM PDUs, they should be sent even if the device is in loopback mode. There is no way for the scheduler in the OLT to know how large a slot to give to an ONU, as the REPORT message cannot report size of OAM PDUs separately from the rest of data frames.

SuggestedRemedy

Actual loop back of data frames should be done in MAC Client. Upon receiving Loobpack Control frame, the OAM sublayer will indicate to MAC Client that it should loop back. MAC Client already has Tx queue and Rx queue, so loop back is straightforward.

This method also solves all issues with P2MP. The size of the Tx queue is reported by the REPORT message. The only difference is that in the loopback mode, the Tx queue is populated by the frames from the Rx queue.

This method will allow lossless loopback and will not require large buffer in OAM sublayer.

Thus, for MPCP there will be no difference whether remote device is in a loopback mode or not. The correct state of the Tx queue will be reported to the OLT every time.

Several supporting slides will be submitted to the OAM STF chair.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

IEEE P802.3ah does not define the MAC Client. It simply is outside the domain of our WG. That said, the OAM Editor wished to respond to a couple of points:

First, related to your comment, point #3 "If MAC Client contains some OAMPDUs" - this can't happen. OAMPDUs do not originate in the MAC Client. Instead Management (STA) originates most all OAMPDUs. The only exception being the Information OAMPDU sent at the minimum rate.

Second, lossless loopback isn't a goal or requirement of OAM loopback. Frames will be lost due to bit errors. OAM loopback will be intiated to test such faulty links. It is intended that Management, after exiting OAM loopback, will query local and remote attributes to determine the symbol and frame errors and in which direction they occurred.

Perhaps, what is better is to discuss a "frame discard due to buffer overflow when in

loopback" which may provide the needed information, both for P2MP and P2P links. Has the commenter considered this approach to the problem?

Cl **55** *SC* **4.2** *P* **79** *L* **45** # **147**

Kramer, Glen — Teknovus

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

In loopback mode, frames received by the local device should not be sunk in OAM layer. Data frames originate in MAC Client sublayer, and should be sunk in the same sublayer no matter whether they were loopbacked or not.

For example, the local MAC Client may need to analyze the contents of all looped-back frames to understand which frames were lost, etc. OAM layer cannot be flexible enough to know what to do with loopbacked frames.

SuggestedRemedy

Modify clause 55.4.2 and Figure 55-3 to show that the loopbacked frames are passed to local MAC Client (through MA_DATA.indication)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The OAM STF explicity defined a requirement prohibiting looped-back frames from being sent to the MAC Client. Refer to squire_2_0102.pdf, slide 2, bullet 4.

Cl **55** *SC* **5.6.3.2** *P* **95** *L* **1718** # **109**

Martin, David — Nortel Networks

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

Need to broaden the scope of the events referenced.

SuggestedRemedy

Change "to alert the remote device of link-related OAM events defined in 55.2.2." to "to alert the remote device of the OAM events defined in 55.2".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55** *P* **73** *L* **23** # **15**

Daines, Kevin — World Wide Packets

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

Tabs missing in Revision History section.

SuggestedRemedy

Add tabs for readability.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.1.1** *P* **74** *L* **1619** # **334**

Brown, Benjamin — AMCC

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

The first 2 sentences of the third paragraph are a repeat of information fount in the first 2 paragraphs.

SuggestedRemedy

Remove the first 2 sentences of the third paragraph.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.1.1** *P* **74** *L* **5** # **69**

Martin, David — Nortel Networks

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

Line 5 says "This clause defines an optional Operations,". The wording "optional OAM" is also used on page 75 line 22, page 75 line 33, page 76 line 1. Finally on page 76 lines 39-41 it is stated that "Implementation of OAM functionality is mandatory for subscriber access devices defined in Clauses..." I'm concerned that after reading four times that OAM is optional, someone might not read any further and miss that it is actually mandatory for some PHYs.

SuggestedRemedy

Suggest changing p.74 line 5 "This clause defines an optional Operations," to "This clause defines the Operations," and then copy and paste p.76 lines 39-41 to follow p.74 line 9. Then at least the context has been set early, so that when reading the wording "optional OAM" afterwards it should be clear there are exceptions.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.1.1** *P* **74** *L* **5** # **943**

Richard Brand — Nortel Networks

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

Delete the words "an optional" in this line.

SuggestedRemedy

replace with the then add the following sentence to the paragraph at the end of line 9 (p. 74): "OAM is intended as an option for IEEE 802.3 physical layer devices, however implementation of OAM functionality is mandatory for subscriber access devices defined in Clauses 58, 59, 62 and 63.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #69.

Cl **55** *SC* **55.1.2** *P* **74** *L* **24** # **157**

Romascanu, Dan Avaya Inc.

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

Text in lines 24 and 26 is redundant and confusing

SuggestedRemedy

delete text in line 26

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.1.3** *P* **74** *L* **33** # **16**

Daines, Kevin World Wide Packets

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

Introductory sentence could be stated more simply.

SuggestedRemedy

Change

"This section provides additional details on the functional requirements for OAM in Ethernet networks. Each of the objectives is clarified with a number of statements, and any additional miscellaneous clarifications are also detailed."

to:

"This section provide additional details and functional requirements for the OAM objectives."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.1.3** *P* **74** *L* **34** # **335**

Brown, Benjamin AMCC

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

The second sentence of the first paragraph doesn't add anything

SuggestedRemedy

Remove the second sentence of the first paragraph

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #16.

Cl **55** *SC* **55.1.3** *P* **74** *L* **47** # **70**

Martin, David Nortel Networks

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

Wording clarification.

SuggestedRemedy

Change "to support a frame-level loopback mode." to "to support a data link layer frame-level loopback mode."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.1.3** *P* **74** *L* **48** # **158**

Romascanu, Dan Avaya Inc.

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

Data Link Layer Text does not belong to 'remote loopback'

SuggestedRemedy

Move line 48 under d) Miscellaneous

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.1.3.a.2** *P* **74** *L* **39** # **23**

Veerayah, Kumaran ICR

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

The term "unidirectional" is introduced here without being defined, or having any reference.

SuggestedRemedy

Change to "Subscriber access physical layer devices, defined in Clauses 59, 62, and 63 have the unidireational support, which is the capability to send OAMPDU while the receive path is non-operational. Hence, OAM remote fault indication is allowed during fault conditions."

OR

Change to "Subscriber access physical layer devices, defined in Clauses 59, 62, and 63 have support unidirectional operation to allow OAM remote fault indication during fault conditions (See Tables 55-6 and 55-10)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Slight preference for 2nd suggested remedy.

Cl **55** *SC* **55.1.5** *P* **75** *L* # **596**

Shin, Yoshida — Sumitomo Electric

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

In P2MP system, it is difficult to assign bandwidth to send OAMPDUs and OAM loopback frames precisely when needed, in the current OAM architecture.

SuggestedRemedy

I would like to propose a modified OAM architecture which introduces
- OAM Client
- MA_OAM.request and MA_OAM.indication primitives
- OAM loopback at MAC Client

Refer to the attached file.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See detailed response to comment #148.

Cl **55** *SC* **55.1.5** *P* **76** *L* **13** # **336**

Brown, Benjamin — AMCC

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

These 3 sentences/phrases all say the same thing.

SuggestedRemedy

Recommend removing the second sentence of this paragraph.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #71.

Cl **55** *SC* **55.1.5** *P* **76** *L* **13** # **71**

Martin, David — Nortel Networks

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

Is it just me or does this paragraph say the same thing 3 times?

SuggestedRemedy

Change "It is possible to implement the optional OAM sublayer for some ports within a system while not implementing it for other ports; it is not necessary for all ports in a system to be subject to OAM. A conformant implementation is not required to implement the OAM sublayer for every port." to "A conformant implementation may implement the optional OAM sublayer for some ports within a system while not implementing it for other ports."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

OAM Editor guilty of plagarizing Link Ag 43.1.3. :)

Like your reduction.

Cl **55** *SC* **55.1.5** *P* **76** *L* **2** # **24**

Veerayah, Kumaran — ICR

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

typo

SuggestedRemedy

"be subject to OAM" to
"be subjected to OAM"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.1.5** *P* **76** *L* **6** # **25**

Veerayah, Kumaran — ICR

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

Abrupt end to the sentence, and diagram.

SuggestedRemedy

Move the diagram to 55.5, where it fits, and remove the sentence, or sentence can make referrence to the diagram in 55.5.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Cl **55** *SC* **55.1.6.1** *P* **76** *L* **38** # **337**

Brown, Benjamin AMCC

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

What does this paragraph mean? Does it mean that Clause 58, 59, 60 & 61 PHYs must support OAM to be considered compliant but that systems using these PHYs don't have to turn OAM on? Or does it mean that systems using these PHYs must turn OAM on?

The only OAM support these PHYs are capable of is unidirectional transmit. All other OAM functions are above the MAC layer so well above these PHYs. Is this what we're talking about?

SuggestedRemedy

Please clarify what the intention here is. If I understood it, I'd offer some actual text. Explain it to me and I'll help wordsmith with you!

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I believe the following are important to communicate:

1) OAM may be applied to (most) 802.3 PHYs. One exception is 10BASE-2, for instance. There are likely others which are close to obsolete. Perhaps this needs to be clarified. OAM isn't restricted to full-duplex. It may be used on half-duplex P2P links. It won't work on half-duplex shared medium networks (little DA problem).

2) As OAM is associated with the EFM TF, subscriber access networks, specifically those using the new EFM PHYs must implement OAM in order to be compliant.

3) Devices using non-EFM PHYs may or may not implement OAM to be compliant.

4) OAM does not need to be enabled.

Cl **55** *SC* **55.1.6.1** *P* **76** *L* **40** # **102**

Martin, David Nortel Networks

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

Should add 100BASE to list.

SuggestedRemedy

Change "defined in Clauses 58, 59, 62 and 63" to" defined in Clauses 58, 59, 60, 62 and 63".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Whoops!

Cl **55** *SC* **55.1.6.3** *P* **76** *L* **50** # **622**

Healey, Adam Agere Systems

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

MAC control PAUSE is required by multiple P2P fiber applications. These applications would also benefit from OAM, but the recommendation in 55.1.6.3 discourages the co-existance of these functions. It was shown in song_oam_1_0902.pdf that links that use MAC control PAUSE may also support OAM with modest changes to Figure 31B-1.

SuggestedRemedy

Modify Figure 31B-1 as recommended in song_oam_1_0902.pdf.

Remove subclause 55.1.6.3.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The OAM STF and EFM TF have maintained backward compatiblity as a key requirement for OAM functionality. One of the motivating factors for "OAM in frames" as it was known previously was backward compatibility. As such, OAM has been patterned after Link Aggregation with the goal of having as much functionality as possible implementable in 802.3 standard devices via software/firmware. Care is being given to ensure that an implementer may choose alternate methods of implementations.

Cl **55** *SC* **55.1.6.3** *P* **76** *L* **52** # **163**

Seto, Koichiro — Hitachi Cable

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

'Not recommending the use of OAM with Pause' is ambiguous and misleading. Disallowing the use of Pause operation with OAM is disservice to the users who rely on Pause for reliable packet-loss-less operation. However, if OAM in frame cannot fullfil the requirements and functionalities of OAM when used with Pause, the spec should accept the shortcoming and state the fact clearly.

SuggestedRemedy

1) The spec should either
- diallow the use of Pause at all by changing the word 'not recommended' to 'prohibited'
- place OAM sublayer parallel to MAC control and allow the use of OAM with Pause
2) The fact the OAM in frame would interfere the existing Ethernet operations such as Pause was not discussed when 802.3ah decided to use OAM in Frame over OAM in Preamble. Should we know this fact, many participants may have had a different opinion. Considering the shortcoming, we should consider the addition of OAM method that does not impose such a shortcoming.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The OAM Editor feels the Comment and Suggested Remedy have slighty different meanings. As such, the OAM Editor will interpret the two and offer a remedy as follows:

"Add text in 55.1.6.3 stating the limitations and shortcomings of have both PAUSE and OAM active at the same time."

Response to Suggested Remedies:
1) In two separate discussions (July 02 in Vancouver and Sept 02 in New Orleans) the OAM STF has agreed with the intent of 55.1.6.3.

Moving the OAM sublayer parallel to the MAC Control would violate the backwards compatible goal of OAM.

2) 'OAM in frame' has since at least Sept 2001 been intended to be implemented via Slow Protocols. The origination of Slow Protocol frames above the MAC Control sublayer was thought to be well-understood. Somce of the earlier work by Denny Gentry explored extensions to the MAC Control sublayer but these were abandoned as the issue of backward compatibility arose en masse. Certainly proponents of alternate OAM transport schemes had the opportunity to raise concerns about PAUSE operation.

Additional, PAUSE related commentary:

The OAM sub-Task Force feels this is a low risk issue since PAUSE frames are used very infrequently. PAUSE frames are intended for short-term congestion of input buffered switches taking data from the edge of a network. Over time, network designers have learned that input buffered switches have their own set of problems and output buffered switches using algorithms such as RED are much more robust. Also, pausing toward the center of the network, in a network full of input buffered switches, can result in the pause propagating throughout the network. This has the effect of a single edge device stalling the entire network just because it can't handle the amount of data destined to it. For these and other reasons,PAUSE frames have typically fallen out of favor and are not used very frequently anymore.

Cl **55** *SC* **55.2.1** *P* **77** *L* **27** # **72**

Martin, David — Nortel Networks

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

Font.

SuggestedRemedy

The text "An unrecoverable local failure condition has occurred." appears to be in a smaller font than the rest of the document, needs a tweak.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.1** *P* **77** *L* **27** # **18**

Daines, Kevin — World Wide Packets

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

Font size is 9 pt rather than 10 pt.

SuggestedRemedy

Bump font size.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.2** *P* **77** *L* **33** # **73**

Martin, David — Nortel Networks

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

Wording change.

SuggestedRemedy

Change the title from "OAM event descriptions" to "Event Indication description".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.2** *P* **77** *L* **35** # **74**

Martin, David Nortel Networks

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

Wording clarification.

SuggestedRemedy

Change "lists the defined OAM events." to "lists the defined OAM events which trigger the Event Indication flag."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.2** *P* **77** *L* **35** # **945**

Ho-Sook Lee ETRI

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

It is required to describe the purpose and the usage of Table 55-1 in detail.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Agree, several other comments address enhancements to this table.

Cl **55** *SC* **55.2.2** *P* **78** *L* **1** # **591**

Murakami, Ken Mitsubishi Electric Cor

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

There are two comments on Table 55-1 as shown below.
1)It is not clear how to decide the values of threshold and timed window in the following events.
- Errored symbol period
- Severely errored symbol period
- Errored frame period
- Severely errored frame period

2)The actual error(s) corresponding to each event is not clear.

SuggestedRemedy

1)Need to clarify how to decide the values of threshold and timed window.
And, if their values are constant, the fixed values should be indicated.
2)Need to clarify the actual error(s) corresponding to each event.
For example,
- Code violation corresponds to ...
- Preamble CRC error corresponds to ....
- FCS error corresponds to ...

and so on.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #86.

Needs explicit text changes

Cl **55** *SC* **55.2.3** *P* **77** *L* **37** # **75**

Martin, David Nortel Networks

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

Wording change.

SuggestedRemedy

Change the title from "OAM event procedure" to "Event Indication procedure".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **77** *L* **40** # **682**

Ueda, Iori — Matsushita Communic

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

The procedure of local event sending/receiving is not clear.
Add the processing procedure performed while the local event continues.
Add the processing procedure performed when a local event is cleared.
Also add the flow chart.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Will have OAM STF consider flow chart.

Cl **55** *SC* **55.2.3** *P* **77** *L* **40** # **184**

Squire, Matt — Hatteras Networks

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

We say "Event Indication flag bit is sent." If there is no PDU, this cannot happen as the EI is part of a frame. I think this step is unnecessary, and instead when we transmit a PDU we set the bit to 0/1 based upon whether the Event Table is empty.

SuggestedRemedy

Remove the line saying "Event Indication flag bit is set." Then, on page 74 line 5, change the meaning of Event indication in the table to
1 = Event table is not empty
0 = Event table is empty

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Table 55-2 will be amended per suggested remedy.

Cl **55** *SC* **55.2.3** *P* **77** *L* **40** # **685**

Ueda, Iori — Matsushita Communic

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

Event Table and Remote Event Table need to be define.

SuggestedRemedy

define Event Table and Remote Event Table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **77** *L* **40** # **338**

Brown, Benjamin — AMCC

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

Bullet a) What is the Event Table? I don't see this defined anywhere in the clause.

SuggestedRemedy

Add a description of the Event Table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The Event Table, being first proposed in New Orleans, needs lots of work.

Cl **55** *SC* **55.2.3** *P* **77** *L* **4054** # **26**

Veerayah, Kumaran — ICR

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

With the self-cleared event table, there are few limitations:

- loss of information if the remote device does not retrieve the data expeditiously.
- Same event may be retrieved more than once since EI flag does not indicate which event, or how many events are in the event table

SuggestedRemedy

Since the event table already has timestamp as an entity in each entry, retrieval of events can be based on it. The local device maintains a timestamp for its last event. The remote device on the other hand maintains a record of timestamps corresponding to the devices. Upon receipt of event notification, remote device can query the last timestamp, followed by retrieval of all events occured (or registered) between the 2 timestamps (remote's and local's).
With this, there is no need for self-clearance of event table, and loss of event information is minimized. Retrieval of information for the same event will not be an issue too.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See related comments #184, 687 688.

OAM STF will address in Kauai.

Cl **55** *SC* **55.2.3** *P* **77** *L* **41** # **159**

Romascanu, Dan — Avaya Inc.

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

Event Table seems to refer to table 55-1. However, this is not clear, and table 55-1 is called differently

SuggestedRemedy

- refer to table 55-1 in linwe 41
- change name of table 55-1 to 'Event Table'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **77** *L* **41** # **687**

Arnold, Brian — Cisco Systems

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

Several details regarding Events and the Event Table need further clarification. For instance, what is the size and structure of the Event Table? Is the size negotiable via OAM Discovery? Must the size be the same on both sides? What happens if the Event Table is overrun with events that have not yet aged out? Is there some indication of an event being dropped or cleared from the Event Table? Presuming both sides have write access to their own and each other's Event Tables (via event entry on local, clear-on-read for remote), do we need to specify a mechanism to prevent race conditions?

SuggestedRemedy

Just a placeholder for the group to specify more detail in the Event Notification structure and mechanism. Request to keep solution as simple as possible, software-implementation-friendly, and keeps OAMPDU traffic to a minimum.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Agree, some committee time is warranted to review Event Table since it was only added in New Orleans.

Cl **55** *SC* **55.2.3** *P* **77** *L* **41** # **76**

Martin, David — Nortel Networks

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

Anal wording change.

SuggestedRemedy

Change "First, the event" to "The event".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **77** *L* **42** # **186**

Squire, Matt — Hatteras Networks

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

"Optionally, an Evnet Notification OAMPDU may be sent" seems redundant (optionally, may).

SuggestedRemedy

Remote "optionally."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **77** *L* **42** # **77**

Martin, David — Nortel Networks

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

Anal wording change.

SuggestedRemedy

Change "Event Indication flag bit set." to "The Event Indication flag bit is set."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **77** *L* **43** # **688**

Arnold, Brian — Cisco Systems

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

If an optional Event Notification OAMPDU is sent by the local side, and contains one or more Variable Containers that includes the same or more information than would be contained in the local Event Table for this event, is it a requirement that the remote side query the local Event Table (line 52)? Is it sufficient for the remote to allow the local Event to self-clear without having been read?

Additionally, is it strictly necessary to place the Event information in the Event Table if the Event Notification OAMPDU contains all the interesting information available, and if it is not crucial that the interesting information arrive intact (one of the original motivations for the Event Table, I believe)?

SuggestedRemedy

Suggest that the group evaluate the benefits of our current Event mechanism versus its complexity and either reaffirm that this is the model we really want or come up with something less complex that still meets our primary requirements of remote failure indication, loopback, and link monitoring.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Great questions, Brian. Per comment #687, STF time is needed to discuss Event Table related issues/questions. In the event, (pardon the pun), the OAM STF doesn't finish, this will need to be a presentation for January.

Cl **55** *SC* **55.2.3** *P* **77** *L* **46** # **78**

Martin, David — Nortel Networks

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

Really anal wording change.

SuggestedRemedy

Change "Event self-clears from Event Table" to "The event self-clears from the Event Table".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **77** *L* **48** # **79**

Martin, David — Nortel Networks

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

Wording change.

SuggestedRemedy

Change "when a remote event is detected:" to "when an OAMPDU is received with the Event Indication flag active:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **77** *L* **49** # **185**

Squire, Matt — Hatteras Networks

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

Bullet (a) confusing in that it looks like the remote event is stored in the local event table.

SuggestedRemedy

Change "reflects the state that Event Table has at least one Event" to "reflects the state that the remote Event Table has at least one Event."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **77** *L* **50** # **187**

Squire, Matt — Hatteras Networks

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

Procedures for remote events confuse me.

SuggestedRemedy

New procedures:

a) The local device sets the variable XXsomethingXX to the value of the Event Indicator flag in every received PDU.
b) Whenever the variable XXsomethingXX is set, the local device should query the remote device for the value of its event table (via a Variable Request OAMPDU) at least every 3 seconds.

Question: How do we address "many" events happening? Limit the size of the PDU?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comments #687, 688. OAM STF meeting time is warranted.

Cl **55** *SC* **55.2.3** *P* **77** *L* **50** # **80**

Martin, David — Nortel Networks

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

Wording clarification.

SuggestedRemedy

Change "First, the remote event is detected by sensing the Event Indication flag bit set. Event Indication reflects the state that Event Table has at least one Event." to "A remote event is detected by sensing an active Event Indication flag in a received OAMPDU. The active Event Indication flag reflects that the corresponding Event Table has at least one active event."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **77** *L* **50** # **686**

Arnold, Brian — Cisco Systems

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

A commenter referencing 55.2.3.a (for instance) without referencing the line number will be making an ambiguous reference due to two instances of a-c under 55.2.3.

SuggestedRemedy

Re-label a), b), and c) on lines 50, 52, and 54, as e), f), and g), respectively.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Nice.

Cl **55** *SC* **55.2.3** *P* **77** *L* **52** # **81**

Martin, David — Nortel Networks

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

Wording change.

SuggestedRemedy

Change "Remote Event Table is queried within 3 seconds of detecting the Event Indication flag. Event Table entry self-clears when read." to "The local device must query the remote device Event Table within 3 seconds of detecting the Event Indication flag. The Event Table entry self-clears when read."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Another comment addresses concern about losing Variable Response and having the table entry self-clear forever losing the event. Subject to those changes, this can be cleaned up.

Cl **55** *SC* **55.2.3** *P* **77** *L* **52** # **623**

Healey, Adam — Agere Systems

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

Subclause states that upon detection of a remote event, local device queries the "Remote Event Table". It is currently unclear how this will be acheived since the "Remote Event Table" does not appear in the clause 30 management definition nor is an OAMPDU for this purpose defined in this clause.

SuggestedRemedy

Define "Event Table" management object in clause 30 and link to clause 55 with details of how each member of "Event Table" is set (Table 55-1 looks like the intended starting point). Presumably, the event table would then be read with Variable Request PDU.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **55** *SC* **55.2.3** *P* **77** *L* **53** # **339**

Brown, Benjamin — AMCC

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

Bullet b) What happens if the "Variable Response" is lost? Is the event lost for good?

Also, shouldn't the "event" bit be clear in this Variable Response so the local device doesn't think there's yet another event to read from the table?

SuggestedRemedy

Describe the effects of these conditions.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Per comment #184, definition of Event Indication has changed. That said, your example of a lost Variable Response is a good one. Since the table self-clears when the Variable Response is sent by Management, is the event lost forever when the OAMPDU incurs a frame error and is dropped?

Two choices. Either accept this behavior or add an acknowledgement mechanism which would serve to clear events. This has its own set of synchronization, event tracking issues. Needs more work.

Cl **55** *SC* **55.2.3** *P* **77** *L* **54** # **82**

Martin, David — Nortel Networks

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

Wording change.

SuggestedRemedy

Change "Queries are repeated as long as Event Indication flag is set." to "The local device queries the remote device Event Table as long as the received Event Indication flag is set."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **78** *L* **1** # **83**

Martin, David — Nortel Networks

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

Wording change.

SuggestedRemedy

Change the title "OAM Events" to "Event Indication Flag Triggers".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **78** *L* **11** # **86**

Martin, David — Nortel Networks

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

Wording change and proposal for period and threshold values.

SuggestedRemedy

Change "Errored frame period" to "Errored frame second".
Change "Defined threshold and timer. If non-zero and below threshold in timed window, errored." to "An Errored Frame Second is defined as a 1 second interval with less than X errored frames for a Y rate Ethernet link. Where X=128 for Y=1000BASE; X=13 for Y=100BASE, X=1 for Y=10BASE". See attached spreadsheet for arithmetic. Will need to discuss 1 sec period versus 3 sec query period.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Most of the suggested remedy is accepted as is. However, the last sentence mentions a need to discuss window vs. query intervals.

Cl **55** *SC* **55.2.3** *P* **78** *L* **14** # **87**

Martin, David — Nortel Networks

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

Wording change and proposal for period and threshold values.

SuggestedRemedy

Change "Severely errored frame period" to "Severely errored frame second".
Change "Defined threshold and timer. If exceed threshold in timed window, severely errored." to "A Severely Errored Frame Second is defined as a 1 second interval with X or more errored frames for a Y rate Ethernet link. Where X=128 for Y=1000BASE; X=13 for Y=100BASE, X=1 for Y=10BASE." See attached spreadsheet for arithmetic. Will need to discuss 1 sec period versus 3 sec query period.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Most of the suggested remedy is accepted as is. However, the last sentence mentions a need to discuss window vs. query intervals.

Cl **55** *SC* **55.2.3** *P* **78** *L* **17** # **189**

Squire, Matt — Hatteras Networks

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

Not a fan of power/temperature alarms. These seem outside the scope of 802.3 and can just as easily be covered in vendor specific.

SuggestedRemedy

Remove power/temperature.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **78** *L* **22** # **690**

Arnold, Brian — Cisco Systems

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

Table 55-1. The phrase "PHY-aggregated loops" is technically accurate and conveys the correct meaning, but the copper track seems to have altered their nomenclature by calling this "PHY PMI Aggregation" in 61.2.2 among other places. If the "Loop Fault" row in Table 55-1 is referring to the copper PHY PMI Aggregation, this text could be similarly altered.

SuggestedRemedy

Purely at the discretion of the editor, the references to "PHY loop aggregation" in Clause 55 may be altered to be consistent with the new nomenclature referenced in Clause 61.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **78** *L* **24** # **190**

Squire, Matt — Hatteras Networks

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

Aggregated loop errors not detected by OAM PDUs. Only signaled by PDUs.

SuggestedRemedy

Replace loop fault comment with:

In an PHY using PMI Aggregation as described in XXX, the LoopFault event indicates that at least one of the loops within that aggregated set is failed. The specific loop(s) that failed should be signaled within an Event Notification PDU or may be retrieved from the far end Event Table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **78** *L* **5** # **188**

Squire, Matt — Hatteras Networks

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

The event table is difficult to understand.

SuggestedRemedy

Suggestions:
1) Replace the lines "If non-zero..." with
"
An ErroredSymbolPeriod error occurs the number of symbol errors (xxVARIABLExx) within a window of xxVARIABLExx duration exceeds zero but is less then xxVARIABLExx.
"

2) Add numbers for events so they can be identified in PDUs.

3) Add MIB like names for events in table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.2.3** *P* **78** *L* **6** # **84**

Martin, David — Nortel Networks

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

Wording change and proposal for period and threshold values.

SuggestedRemedy

Change "Errored symbol period" to "Errored symbol second".
Change "Defined threshold and timer. If non-zero and below threshold in timed window, errored." to "An Errored Symbol Second is defined as a 1 second interval with less than X symbol errors for a Y rate Ethernet link. Where X=125 for Y=1000BASE; X=25 for Y=100BASE; X=10 for Y=10BASE." See attached speadsheet for arithmetic. Will need to discuss 1 sec period versus 3 sec query period.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Will discuss query vs period intervals in Kauai.

Cl **55** *SC* **55.2.3** *P* **78** *L* **9** # **85**

Martin, David — Nortel Networks

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

Wording change and proposal for period and threshold values.

SuggestedRemedy

Change "Severely errored symbol period" to "Severly errored symbol second".
Change "Defined threshold and timer. If exceed threshold in timed window, severely errored." to "A Severely Errored Symbol Second is defined as a 1 second interval with X or more symbol errors for a Y rate Ethernet link. Where X=125 for Y=1000BASE; X=25 for Y=100BASE, X=10 for Y=10BASE." See attached spreadsheet for arithmetic. Will need to discuss 1 sec period versus 3 sec query period.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Will discuss query vs period intervals in Kauai.

Cl **55** *SC* **55.3** *P* **78** *L* **31** # **20**

Daines, Kevin — World Wide Packets

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

Grammer problem.

SuggestedRemedy

Change "the OAM sublayer send a Ping Request" to "the OAM sublayer sends a Ping Request".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.3** *P* **78** *L* **32** # **341**

Brown, Benjamin — AMCC

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

wrong word

SuggestedRemedy

Replace "send" with "sends"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.3** *P* **78** *L* **3536** # **88**

Martin, David — Nortel Networks

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

Wording clarification.

SuggestedRemedy

Change "The link remains in an operational state while the OAM sublayer multiplexes Ping Request and Ping Response OAMPDUs into the subordinate sublayer." to "The link remains in an operational state while the local device OAM sublayer multiplexes Ping Request OAMPDUs with MAC Client data and the remote device OAM sublayer multiplexes Ping Response OAMPDUs with MAC Client data".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.3** *P* **78** *L* **37** # **21**

Daines, Kevin — World Wide Packets

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

Verb tense should be changed.

SuggestedRemedy

Change "will be" to "is".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.3** *P* **78** *L* **40** # **191**

Squire, Matt — Hatteras Networks

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

I think the text here conflicts with my recollection of what David wanted to put in clause 30, where the size and contents of the ping cannot be set by management, only the triggering of the ping.

SuggestedRemedy

Resolve any conflict(s) with text and ping operation.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The OAM Editor's recollection differs from the commenter. It is the belief of the OAM Editor that the size and contents of Ping Request OAMPDUs should be controlled by Management (STA).

Cl **55** *SC* **55.3** *P* **78** *L* **42** # **342**

Brown, Benjamin — AMCC

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

Is this the place to put a shall on the content of the Ping Response

SuggestedRemedy

Replace "will" with "shall" unless this is being taken care of somewhere else. If it's somewhere else then, simply remove the word "will".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

55.6.3.5 Ping Response contains the shalls.

Will remove the "will".

Cl **55** *SC* **55.3** *P* **78** *L* **42** # **22**

Daines, Kevin — World Wide Packets

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

Change verb tense.

SuggestedRemedy

Remote "will".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Should be "Remove 'will' ".

Cl **55** *SC* **55.3.3.2 and 56.3.4** *P* **74 and 122** *L* # **99042**

Jin Kim Samsung

Comment Type **TR** *Comment Status* **R** *D1.0 #166*

It is important to provide the fairness between user stations.
The current REPORT message only reports total queue size in ONU, and which can not guarantee the fairness.

One way of doing this is ONU provides to OLT how many user stations are currently active.

SuggestedRemedy

There are two possibile ways.
1) Use 2 bytes in the current MPCP REPORT message for the ONU¡¯s active user station number.
2) Use 2 bytes in the current OAM Keep Alive message for the ONU¡¯s active user station number.

Proposed Response *Response Status* **W**

REJECT. D1.0 Comment

Clause 55 will be kept media/topology independent. As such, the commenter should pursue the first suggested remedy with the P2MP STF.

Note: The EFM OAM Editor copied the P2MP Chair and Editor on this comment, as the comment sort likely didn't parse the dual sub-clauses and page numbers.

25 6 5

- - - - - - - - -

PROPOSED REJECT. D1.1 Comment
6 Nov 02 Editor's Note:
The above three numbers "25 6 5" were the results of a straw poll taken on this issue. Unfortunately, the OAM Editor failed to annotate the notes and comment database to accurately reflect both the straw poll question posed to the P2MP/OAM STFs and the result in more detail. The OAM Editor regrets this oversight.

However, after further review, it remains the opinion of the OAM Editor that any information regarding P2MP fairness, ONU queue size and number of active ONUs is a P2MP STF issue. Hence, the second suggested remedy is again a PROPOSED REJECT. The OAM Editor suggests the commenter pursue the first suggested remedy with the P2MP STF.

Cl **55** *SC* **55.4** *P* **78** *L* **47** # **343**

Brown, Benjamin AMCC

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

missing comma

SuggestedRemedy

Replace "mode which is" with "mode, which is"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4** *P* **78** *L* **48** # **192**

Squire, Matt Hatteras Networks

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

The sentence "During loopback, a device is permitted to send variable length frames, with varying data fields" doesn't seem useful. You can always do this.

SuggestedRemedy

yank the sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **55** *SC* **55.4** *P* **78** *L* **48** # **27**

Veerayah, Kumaran ICR

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

Comma missing

SuggestedRemedy

"After loopback mode is exited the statistics from both the local and remote device...." to "After loopback mode is exited, the statistics from both the local and remote devices...."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4** *P* **78** *L* **49** # **851**

Thatcher, Jonathan World Wide Packets

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

Sentence "After loopback... compared" unnecessarily implies that loopback statistics can only be read on exit from loopback.

SuggestedRemedy

Clarify that statistics can be read at any time. Make sure state machines allow this, especially under error conditions.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Text will be modified to read "Both during and after loopback, the statistics from both the local and remote device can be compared."

Also, an additional state is probably required to allow the devices to compare stats, something between LOOPBACK_END_* and SEND_ANY_OAM.

Also, loopback error conditions need to be reviewed in more detail.

Cl **55** *SC* **55.4** *P* **82** *L* # **202**

Squire, Matt — Hatteras Networks

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

State diagram covers only "Active" mode.

SuggestedRemedy

Include another initiazlization state that says "PASSIVE_WAIT" (or something) at the top where a passive node sits and waits til it gets an information OAM PDU from the peer, and then it goes to SEND_LOCAL_REMOTE_1. Also need to show the SEND_LOCAL_ONLY applies just to Active mode.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4** *P* **85** *L* # **203**

Squire, Matt — Hatteras Networks

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

We need to reset mr_oam_satisfied whenever we lose connectivity.

SuggestedRemedy

See comment. Might want to include 3 states: unknown, true, and false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

mr_oam_satisfied (which will be renamed so as to avoid confusion with Clause 22/45 management register bits) will need to be constantly updated based on the state machine, received Information OAMPDUs, etc. The current thought is to provide guidance as to the definition of mr_oam_satisifed.

Cl **55** *SC* **55.4** *P* **85** *L* # **204**

Squire, Matt — Hatteras Networks

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

Maybe we should separate out loopback states from initialization states.

SuggestedRemedy

Two different states: oam_state, oam_lb_state, each controlled by a different diagram, each half of the current 55-4.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The OAM Editor feels that a single state machine governing OAM discovery and entering/exiting loopback has some merit. Will poll the OAM STF though.

Cl **55** *SC* **55.4** *P* **85** *L* **1** # **200**

Squire, Matt — Hatteras Networks

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

link_loss_timer_done not defined.

SuggestedRemedy

Define timer in previous section(s). Also need to include it in transitions back to the initial state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #141.

Cl **55** *SC* **55.4** *P* **85** *L* **10** # **201**

Squire, Matt — Hatteras Networks

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

Can't read "1" at the end of "SEND_LOCAL_REMOTE_1".

SuggestedRemedy

Center text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.1** *P* **79** *L* **22** # **946**

Ho-Sook Lee — ETRI

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

It will be better to elaborate the loop-back procedure in the remote site and the termination procedure of the loop-backed frames in the local site.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.1** *P* **79** *L* **2331** # **355**

Brown, Benjamin AMCC

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

No description is provided of a loopback timer in the remote device nor when and how it gets loaded with the Loopback_Time value from the Loopback Control OAMPDU

SuggestedRemedy

Add this description:

"Upon receipt of a valid Loopback Control OAMPDU, the remote device starts a timer for the length of time specified by the Loopback_Time value in the OAMPDU (see 55.6.3.3). The value of the variable lb_timer_DONE is set to false upon the setting of the lb_timer to a non-zero value. The value of the variable lb_timer_Done is set to true when the timer reaches zero (i.e., the timer expires). If the received Loopback Control OAMPDU indicates a Loopback_Time value of zero, the value of lb_timer_DONE is set to true immeidately.

The receipt of a valid Loopback Control OAMPDU will cause the lb_timer to be set according to the Loopback_Time value in the newly received OAMPDU, regardless of the current setting of the lb_timer, i.e. the new Loopback_Time value overrides an earlier value."

This text is loosely copied from 31B.3.3.

This requires a new lb_timer timer in the Timer section, 55.5.2.1.5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.1** *P* **79** *L* **24** # **89**

Martin, David Nortel Networks

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

Add that Management may request a loopback.

SuggestedRemedy

Add "Management may request an OAM loopback." The corresponding additions to clause 30 will be required. David Law has a draft presentation from the September meeting with the proposed changes. I have a comment for this against Clause 30.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.1** *P* **79** *L* **25** # **852**

Thatcher, Jonathan World Wide Packets

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

2nd sentence is not clear that intent is to ensure that no frames are sent until confirmation is received that the remote side is in loopback mode (because there is no way to know what will happen with them).

SuggestedRemedy

...is blocked until confirmation is received that the remote side is in loopback mode.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.1** *P* **79** *L* **25** # **344**

Brown, Benjamin AMCC

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

In reference to the second sentence of this first paragraph:

Why? It should be up to the MAC Client to control this since the MAC Client is the source of the loopback frames. It should stop data until loopback is turned on or resolving counters may be difficult but it can choose to do anything it wants.

SuggestedRemedy

Remove this sentence, along with the word "Also" at the start of the next sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.1** *P* **79** *L* **2526** # **90**

Martin, David Nortel Networks

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

Incorrect statement.

SuggestedRemedy

Delete the sentence "When this request is sent, the path from the MAC Client to the OAM sublayer in the local device is blocked."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #344.

Cl **55** *SC* **55.4.1** *P* **79** *L* **28** # **624**

Healey, Adam — Agere Systems

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

Subclause specifies that Information PDU indicating loopback must be received within 1 second of transmission of OAM loopback PDU. However, OAM entity may be configured to transmit as slow 1 frame per second and, accounting for MAC, PHY, and media delay, a compliant implementation may not be able to meet the specified response time. This could create redundant and unnecessary loopback requests.

This same issue would apply to Variable Request / Response transactions.

SuggestedRemedy

Increase timeout to 2 s second to prevent spurious additional requests.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.1** *P* **79** *L* **30** # **135**

Hirai, Hideyuki — Sumitomo Electric

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

Whether the local device retransmits the loopback request or not should be an implementation matter.

SuggestedRemedy

"may" should be inserted between "device" and "retransmits".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.1** *P* **79** *L* **30** # **401**

Daines, Kevin — World Wide Packets

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

Missing text.

SuggestedRemedy

After "retransmits the loopback request" add "and restarts the timer."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.2** *P* **79** *L* **26** # **193**

Squire, Matt — Hatteras Networks

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

I dont think we have a state or a variable covering the condition where the local device has sent a loopback request to the far end and needs to block traffic from the MAC client.

SuggestedRemedy

Add variable, state, and modify the NTT diagram.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #344.

The text relating to OAM blocking the MAC Client in the local device will be removed.

Cl **55** *SC* **55.4.2** *P* **79** *L* **33** # **118**

Takashi, Ezawa — Oki Electric Industry C

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

It isn't mentioned clearly about the point where loopback test frames are generated and about the point where they are checked.
According to figure 55-3, in the local device, the loopback test frames are passed from MAC Client to the subordinate sublayer.
On the other hand, the loopback test frames from the subordinate sublayer are blocked at the OAM sublayer in the local device.
From this point of view, how to check the normality of the loopback test frames isn't mentioned.
These should be mentioned more clearly in this subclause.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Will add text to clarify.

Cl **55** *SC* **55.4.2** *P* **79** *L* **39** # **931**

Seyoun LIM SAMSUNG ELECTRO

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

In the text, Remote Device loops back every frame that does not contain one of the sixteen multicast addresses reserved for bridge protocols. Frames that contain one of the sixteen multicast addresses reserved for bridge protocols are passed to the MAC client.
Because Slow Protocol¡¯s DA is also one of sixteen multicast addresses reserved, the text of draft means OAM PDUs looped back are all passed to the MAC client.

SuggestedRemedy

OAM PDUs are expected to loop back in the loopback mode. Frames that contain one of the sixteen multicast addresses reserved for bridge protocols are passed to the MAC client except OAM PDUs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #402.

Cl **55** *SC* **55.4.2** *P* **79** *L* **40** # **402**

Daines, Kevin World Wide Packets

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

Text warns of frames containing reserved multicast address. This restriction is limited to the DA, not the entire frame.

SuggestedRemedy

Reword b) as follows:

"Within the OAM sublayer, the remote device loops back every frame that has a destination address other than one of the sixteen reserved multicast addresses. OAMPDUs received by the remote device are parsed, acted upon and sunk. Non-OAMPDU frames with destination addresses equal to one of the sixteen reserved multicast addresses are passed to the MAC Client."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.2** *P* **79** *L* **42** # **28**

Veerayah, Kumaran ICR

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

The "sunk" in lines 42, and 45 is not descriptive. Is this sunk meant to be a sink state, or reaching the sink location.

SuggestedRemedy

Change to either sink state, or reach the sink (whichever is the right one).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Changed "sunk" to discarded.

Cl **55** *SC* **55.4.3** *P* **79** *L* **45** # **625**

Healey, Adam Agere Systems

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

In loopback mode, the entity to source frames should be the entity that sinks the frames. It is currently defined that MAC Client sources the frames, so the MAC Client should sink the frames to facilitate data pattern verification and complete loopback coverage.

SuggestedRemedy

Alter item (d) and Figure 55-3 to show that loopback frames terminate at the local MAC client, and not OAM sublayer.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See comment #147.

Cl **55** *SC* **55.4.3** *P* **79** *L* **53** # **194**

Squire, Matt — Hatteras Networks

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

Seems like we should talk about what triggers a local device to leave loopback rather than from the remote view.

SuggestedRemedy

Exiting loopback:

A device that is put into loopback mode by its OAM peer stays in loopback until:
a) the loopback time expires
b) the device receives a Loopback Control OAMPDU with a loopback time of zero

Not sure where the (c) one comes from.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Re: (a) & (b) good call.

Re: (c) This arose during OAM STF work in New Orleans.

Cl **55** *SC* **55.4.3** *P* **79** *L* **54** # **404**

Daines, Kevin — World Wide Packets

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

Text regarding 'exiting loopback' should be added comparable to the text about 'initiating loopback.'

SuggestedRemedy

In a new line after bullet c) add "When this occurs, the remote device sends an Information OAMPDU indicating it has exited loopback mode and is waiting for acknowledgement from the local device. When the local device acknowledges this, the two devices resume normal link operation."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.3** *P* **79** *L* **54** # **136**

Hirai, Hideyuki — Sumitomo Electric

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

According to 55.4.3 c), the remote device may decide to exit loopback, while it is still in loopback mode. But this event is not described in the state machine in Figure55-4. It is not clear how "lb_timer" is handled when the remote device decides to terminate loopback mode.

SuggestedRemedy

There is no definition on timer "lb_timer" in the draft. There should be a definition of "lb_timer". The definition also should address how "lb_timer" is handled when the remote device decides to terminate loopback mode.
When the remote device decides to terminate loopback mode, it shuld first set "lb_timer" zero(0), then transit to the next state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #155.

Cl **55** *SC* **55.4.3** *P* **79** *L* **54** # **403**

Daines, Kevin — World Wide Packets

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

Missing "."

SuggestedRemedy

Add "."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.3** *P* **79** *L* **55** # **595**

Yamada, Naoshi — Fujikura.Ltd

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

Retransmission of Loopback Control OAMPDU with a loopback time of 0 by the local device should be permitted.

SuggestedRemedy

Add "If remote device is still loopback mode after the local devivce transmitted loopback control OAMPDU with a loopback time of 0, then the local device may retransmits the OAMPDU."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The comment isn't prohibited in any way, so there is no need for the suggested remedy.

Cl **55** *SC* **55.4.4** *P* **80** *L* **10** # **345**

Brown, Benjamin AMCC

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

Add a sentence to the end of the first paragraph

SuggestedRemedy

At the end of the first paragraph, add the following sentence:

"Also, OAMPDU frames inserted by the remote device impacts the bandwidth available to loopback data."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.4.4** *P* **80** *L* **11** # **853**

Thatcher, Jonathan World Wide Packets

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

Add note regarding rate that ensures no loss (if necessary, include assumption on buffer size). In short, make it clear that the local side has the ability to avoid packet loss in loopback.

SuggestedRemedy

As you wish.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

So this would be applicable to both P2P and P2MP topologies. The rate of loopback frame likely needs to be tuned to the implementation of loopback in the remote device, the depth of loopback buffers, etc. Will craft some text.

Cl **55** *SC* **55.4.4** *P* **80** *L* **12** # **405**

Daines, Kevin World Wide Packets

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

Qualify warning about reserved multicast addresses.

SuggestedRemedy

Change paragraph to read as follows: "Care should be given to ensure that the destination address of any loopback test frames do not use one of the sixteen multicast addresses reserved for bridge protocols. Non-OAMPDU frames with a destination address equal to one of the sixteen multicast addresses reserved for bridge protocols are not looped back and instead are passed up to the MAC Client in the remote device."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Subject to concern raised by Matt in comment #195.

Cl **55** *SC* **55.4.4** *P* **80** *L* **14** # **195**

Squire, Matt Hatteras Networks

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

The exceptions for bridges bother me, i.e.:

"Care should be given to ensure that any loopback test frames do not use one of the sixteen multicast addresses reserved for bridge protocols. Frames with one of the sixteen multicast addresses reserved for bridge protocols are not looped back and instead are passed up to the MAC Client in the remote device."

First, its a layering violation for the MAC to know whats important to bridges.

Second, its a big problem if 802.1D changes the set of "important" MACs.

Third, these should not be echoed back up to the bridge anyway, and they're not any more dangerous than OSPF, RIP, or other control protocols being echoed back.

SuggestedRemedy

Yank that part (affects state diagrams as well).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Discussion in OAM STF in New Orleans led to provision for allowing BPDUs, using one of the sixteen reserved multicast addresses, to pass through to the MAC Client in the remote device. Two primary reasons were given:

1) Ease hardware implementation by reducing inspection requirements

2) Provide for future extensibility - "We don't know what the next protocol will be so let's not preclude it's use during loopback."

After more thought, OAM Editor is concerned about interaction of protocols across "unidirectional" links.

Cl **55** *SC* **55.4.4** *P* **80** *L* **5** # **91**

Martin, David Nortel Networks

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

Wording clarification.

SuggestedRemedy

Change "MAC Client frames originating from the remote device may be lost." to "MAC Client frames originating from the remote device are not transmitted by the subordinate OAM sublayer".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I hope the suggested remedy is clear enough.

Cl **55** *SC* **55.4.4** *P* **80** *L* **69** # **92**

Martin, David Nortel Networks

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

I have a big problem with this text - it contradicts the purpose of a loopback: "Depending upon the remote device's implementation of loopback, not every frame received is guaranteed to be looped back to the local device. Clock differences between the local and remote devices may also be a source of lost frames, as the delta in the rate of frames transmitted and received may overrun buffers within either device." The purpose of a loopback in commissioning a service is to verify that every frame sent comes back OK. The purpose of a loopback in the fault isolation of an existing service is to identify where in the system frames are being corrupted. The remote device loopback mechanism must guarantee that every frame received is looped back towards the local device.

SuggestedRemedy

That being said, I understand that there may be a desire to implement the loopback function in S/W. I suggest the way to address this is to add text to this clause that clearly limits the local device transmitted frame rate, so there is ample time for a remote device S/W process to perform the loopback function. In order to determine what that max local device transmitted frame rate should be, I suggest that the experts in the room discuss it and come to a consensus value.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The OAM Editor understands both the concern of the commenter and the intent of the Suggested Remedy.

The thought was to provide text clearly showing possible sources of frame loss during loopback. Clearly, frames with bit errors will be dropped by the receiving MAC sublayer, never reaching the OAM sublayer. This fact needed to be called out.

Would the Proposed Response to #148 would help mitigate the concern?

Bottom line: whether frame-level loopback is implemented in hardware or software frames may be lost regardless the transmission rate. Accounting for these lost frames and whether they were dropped due to link bit errors or clumsy loopback buffers is the key issue, right?

Cl **55** *SC* **55.4.4** *P* **80** *L* **9** # **93**

Martin, David Nortel Networks

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

Wording change.

SuggestedRemedy

Change "In addition, frames that incur errors during transit will be dropped" to "As always, frames that incur errors during transit will be dropped".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5** *P* **80** *L* # **933**

Seyoun LIM SAMSUNG ELECTRO

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

I'd like to comment about loopback mode in case of point to multipoint.
In the topology which is composed of one OLT and three ONUs, All ONUs(ONU1, ONU2 and ONU3) are in service. OLT try to send loop control message to ONU1 for loopback test. At the this moment, I think other ONUs are possible to be still in service.

SuggestedRemedy

I think it should be mentioned in the draft/standard that, in case of point to multipoint, OLT should control Loopback mode is applied to each ONU independently.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Agree with the commenter that in the scenario provided, other ONUs are "possible to be still in service." However, don't agree that text is needed to call this out. P2MP's LLID, virtual MAC and virtual OAM per ONU should make this clear.

Cl **55** *SC* **55.5** *P* **80** *L* **19** # **930**

Seyoun LIM SAMSUNG ELECTRO

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

At Loopback mode & Unidirectional mode, OAM PDUs are guaranteed to be transmitted as soon as be generated because path of OAM:MADR is blocked and MUX:MADR is only transmitted
However, other OAM PDUs is not guaranteed to be transmitted as soon as they are generated

SuggestedRemedy

OAM PDUs should be given higher priority in transmission than MAC client data frames at control multiplexer block.
During transmitting MAC client Data frame, if an OAM PDU is generated, it¡¯s supposed to be inserted in the transmission of MAC client data frame

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Commenter is correct. brown_oam_1_1102 proposes needs enhancements. Refer to slides 3 and 11 for more details. These changes should satisfy your concern.

Cl **55** *SC* **55.5** *P* **80** *L* **21** # **426**

Cravens, George — Mindspeed

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

Link Aggregation was renamed PMI Aggregation during the New Orleans interim meeting (Copper STF).

SuggestedRemedy

Replace the term Link Aggregation with PMI aggregation each time it appears in the clause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5** *P* **80** *L* **24** # **94**

Martin, David — Nortel Networks

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

Function clarification.

SuggestedRemedy

Add "When in loopback mode, this block passes to OAM Control every frame that does not contain one of the sixteen multicast addresses reserved for bridge protocols. Frames that contain one of the sixteen multicast addresses reserved for bridge protocols are passed to the MAC Client."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See comment #195.

Cl **55** *SC* **55.5** *P* **80** *L* **27** # **95**

Martin, David — Nortel Networks

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

Function clarification.

SuggestedRemedy

Add "This block is also responsible for performing the loopback function: accepting received frames from the Control Parser, swapping the SA / DA values, and sending those frames to the Control Multiplexer."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Prior OAM STF work discussed pros/cons of swapping DA/SA or leaving intact. Believe the consensus was to leave untouched.

Cl **55** *SC* **55.5** *P* **80** *L* **28** # **196**

Squire, Matt — Hatteras Networks

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

Do we need a Discovery block description?

SuggestedRemedy

Add discovery function description.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.1** *P* **80** *L* **39** # **160**

Romascanu, Dan — Avaya Inc.

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

An active / passive mode is described here. However, this is not reflected in the state machines, or variable passed at the interface, and it is not clear if it is needed

SuggestedRemedy

Delete paragraph f) under 55.5.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Rather than accepting the suggested remedy and removing references to passive/active, a better approach might be to actually update other portions of the draft.

In fact, adding a state to Fig 55-4 gating a Passive device from sending Information OAMPDUs until first receiving one from the remote device is probably in order.

Cl **55** *SC* **55.5.1** *P* **80** *L* **41** # **347**

Brown, Benjamin — AMCC

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

Use shall for requirements

SuggestedRemedy

Replace "Nor may a passive" with "Nor shall a passive"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.1** *P* **80** *L* **4142** # **346**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **D**
Be consistent with case when referring to OAMPDU frames: ping, loopback, variable requests, Information

SuggestedRemedy
Use an upper case for the first letter of all OAMPDU frames

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.1** *P* **80** *L* **45** # **348**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D**
Use shall for requirements

SuggestedRemedy
Replace "must not be" with "shall not be"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2** *P* **80** *L* **49** # **406**
Daines, Kevin World Wide Packets

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

SuggestedRemedy
Change sub-clause title to read "Service interfaces"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.1** *P* **81** *L* **23** # **407**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **D**
Missing word.

SuggestedRemedy
Change line to read: "The value of the Code field for Information OAMPDUs."

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.1** *P* **81** *L* **28** # **408**
Daines, Kevin World Wide Packets

Comment Type **E** *Comment Status* **D**
Font change impacted the indentation on the constants, variables, functions and messages within 55.5.2.1.

SuggestedRemedy
Fix indentation.
Lines 28, 33, 36, 42 on pg 81.
Lines 5, 13 on pg 82.
Lines 11, 23, 30, 33, 41, 44 on pg 83.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.1** *P* **81** *L* **522** # **197**
Squire, Matt Hatteras Networks

Comment Type **E** *Comment Status* **D**
"Code field for OAMPDUs" is confusing.

SuggestedRemedy
Replace with "Code field for Information OAM PDUs as defined in Section XXX."

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **81** *L* # **684**
Ueda, Iori Matsushita Communic

Comment Type **E** *Comment Status* **D**
mr_oam_event need to be define
Because mr_oam_event is used by the line 12 Fig.55-5.

SuggestedRemedy
define mr_oam_event.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **81** *L* **49** # **349**

Brown, Benjamin AMCC

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

From 2.3.2.2:

The semantics of the primitive are as follows:
MA_DATA.indication (
destination_address,
source_address,
m_sdu,
reception_status
)

SuggestedRemedy

Replace "status" with "ind_reception_status"

Fix usage on page 83, line 34

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* # **915**

Tom Mathey Independent

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

It is a long step to go from the MIB clause in 30.11.x.y.z to a state diagram variable. To provide interoperability, the variable mr_oam_rest should be accessable via a clause 45 register and bit.

SuggestedRemedy

Add clause 45 bit for variable mr_oam_rest.
Also for several other bits referenced back to clause 30.
Also for variables such as local_state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #356.

The leading "mr_" is admittedly confusing. These registers are, in fact, not accessible via Clause 22/45 MDC/MDIO. Comment #356 clears up this confusion by renaming the Management variables.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **1** # **350**

Brown, Benjamin AMCC

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

From 2.3.1.2:

The semantics of the primitive are as follows:
MA_DATA.request (
destination_address,
source_address,
m_sdu,
service_class
)

SuggestedRemedy

Since you've chosen to precede all the other variables with "req", replace "service_class" with "req_service_class"

Fix usage on page 83, line 41

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **13** # **352**

Brown, Benjamin AMCC

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

missing word

SuggestedRemedy

Replace "machine reflect" with "machine to reflect"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **13** # **409**

Daines, Kevin World Wide Packets

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

Grammar.

SuggestedRemedy

Change "reflect" to "reflecting".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **18** # **353**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **D**
missing word

SuggestedRemedy
Replace "received non-zero" with "received a non-zero"

Same thing for page 83, line 5

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **18** # **354**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D**
What is lb_value? I don't see it defined anywhere?

SuggestedRemedy
Replace "lb_value" with "Loopback_Time" as this is the name of the field from the Loopback Control OAMPDU

Same thing for page 83, line 5

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **21** # **96**
Martin, David Nortel Networks

Comment Type **E** *Comment Status* **D**
Wording change.

SuggestedRemedy
The wording in this line "terminated remote loopback" I think means "exited remote loopback". If my understanding is correct then I suggest using "exited" rather than "terminated", which also aligns with the section 55.4.3 wording. Then again, maybe I'm just overly sensitive to the word 'terminated' these days.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **2342** # **356**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **D**
The use of mr_ should be used only for MDC/MDIO register bits. Use oam_for these Clause 30 attributes

SuggestedRemedy
Replace "A" with "B"

A	B
mr_dying_gasp	oam_dying_gasp
mr_oam_reset	oam_reset
mr_oam_code	oam_code
mr_oam_satisfied	oam_satisfied
mr_send_pdu	oam_send_pdu
remote_state	oam_remote_state

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **26** # **198**
Squire, Matt Hatteras Networks

Comment Type **E** *Comment Status* **D**
"Dying Gasp"s don't really occur unless you mean that a PDU with dying gasp bit set was sent. I think you mean that a fatal event has occured.

SuggestedRemedy
Replace "Dying gasp has occurred" (or not occurred) with "An uncrecoverable local failure has occurred" (or not occurred).

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **38** # **220**
Squire, Matt Hatteras Networks

Comment Type **TR** *Comment Status* **D**
How does management determine if it is satisfied? How do we make information available to it?

SuggestedRemedy
Need to add method to Clause 30 to address making OAM information available to management entity.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

See brown_oam_1_1103.pdf, slide 6.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **4750** # **357**

Brown, Benjamin AMCC

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

Use Local_State field in definition of oam_lb variable

SuggestedRemedy

Replace: "FALSE; OAM Loopback is disabled" with
"False; OAM Local_State [2:0] not equal to 010"
Replace: "True; OAM Loopback is enabled" with
"True; OAM Local_State [2:0] equal to 010"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **48** # **420**

Daines, Kevin World Wide Packets

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

The management variable "oam_lb" should be the state LB_STABLE. They are similar in behaviour and function, but it is preferrable to use the state machine variable.

SuggestedRemedy

Remove oam_lb. Change prior references to oam_lb to LB_STATE.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #357.

Cl **55** *SC* **55.5.2.1.2** *P* **82** *L* **8** # **351**

Brown, Benjamin AMCC

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

The description of the link_fault variable is not complete

SuggestedRemedy

Replace "A boolean value based on remote fault as per 30.5.1.1.4" with "A boolean value based on any of the remote fault indications as per 30.5.1.1.4"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **83** *L* **10** # **359**

Brown, Benjamin AMCC

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

fix name to match usage in RxOAMPDU

SuggestedRemedy

Replace "subtype" with "req_subtype"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **83** *L* **10** # **199**

Squire, Matt Hatteras Networks

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

Don't think "subtype" is used anywhere. "req_subtype" is used, not sure if thats what this should be.

SuggestedRemedy

Delete it if its unused, or fix the variable name.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **83** *L* **19** # **358**

Brown, Benjamin AMCC

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

Need additional variables/Clause 30 attributes

SuggestedRemedy

oam_pdu_arrived - indicates to STA that an oampdu has arrived at the OAM Control block

oam_rx_pdu - contains the content of the received OAMPDU for STA.

oam_remote_state_available - indicates that an Information OAMPDU has arrived and that remote state is available to be used by the Discovery process

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.2** *P* **84** *L* # **137**

Hirai, Hideyuki — Sumitomo Electric

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

The definition of "minimum OAMPDU rate" and "maximum OAMPDU rate" are not clear.
According to 55.5.2.1.5, any kind of OAMPDUs should be sent at least at a minimum rate.
But according to Figure55-5, information OAMPDUs should be sent at least at a minimum rate.
Also, according to 55.5.2.1.5, the duration of "min_rate_timer" is 1 sec. This means information OAMPDUs can be sent at most once in 1 second. But according to Table55-11, as "Minimum_PDU_Rate" can be 0 to 10, it seems the draft allows OAM to send at a minimum of 10 OAMPDUs in a second.

SuggestedRemedy

In 55.5.2.1.5, clarify that a minimum OAMPDU rate counts just information OAMPDUs.
Also, duration of "min_rate_timer" should be defined as 100msec.
In Table55-7, add a sentence "Minimum_PDU_Rate" should be one(1) or greater, if the system expects information OAMPDUs to be sent periodically.

Also, In Figure55-5, to make it possible to send Information OAMPDUs periodically, change the conditional sentence

"mr_dying_gasp=FALSE * mr_send_pdu=FALSE
*((mr_oam_event * max_rate_timer_done) + min_rate_timer_done) " to

"mr_dying_gasp=FALSE
* ((mr_send_pdu=FALSE * mr_oam_event * max_rate_timer_done)
+ min_rate_timer_done)"

Also, add a sentence "Maxmum_PDU_Rate should be greater than Minimum_PDU_Rate, to make it possible to send OAMPDUs other than information OAMPDUs."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Point #1
See Point #2 response below. With this information, is Point #1 answered?

Point #2
Figure 55-5 does not mandate that Information OAMPDUs be sent at a minimum rate. Rather, if the min_rate_timer expires meaning no other OAMPDU has been sent, then Fig 55-5 emits an Information OAMPDU. Consider the case where Management sends Ping Request OAMPDUs at a rate of 2 per second. If this happened, then Information OAMPDUs would not be sent as a result of the 'lower' SEND_INFORMATION state in Fig 55-5.

Point #3
Fig 55-5 does not mandate that Information OAMPDUs be sent at a rate not greater than the min_rate_timer. Management may request that an Information OAMPDU be sent.

Point #4
Is it invalid to have the min and max set to the same value?

All this said, there is some text to clarify. Suggest adding some text to Table 55-7, for both min and max rates.

Cl **55** *SC* **55.5.2.1.4** *P* **83** *L* **43** # **207**

Squire, Matt — Hatteras Networks

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

RxOAMPDU is confusing as this isn't a receive but a request. Its also not symmetrical in definition to TxOAMPDU. Note that in Figure 55-7, it is a received OAMPDU, but not here.

SuggestedRemedy

Change to ReqOAMPDU

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.5** *P* **83** *L* **53** # **410**

Daines, Kevin — World Wide Packets

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

Capitalization.

SuggestedRemedy

Change "OAMPDUS" to "OAMPDUs".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.5** *P* **83** *L* **53** # **360**

Brown, Benjamin — AMCC

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

The max_rate_timer should guarantee that OAMPDUs are emitted at not greater than the max rate, not simply less than the max rate

SuggestedRemedy

Replace "less than" with "not greater than"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.2.1.5** *P* **84** *L* **8** # **626**

Healey, Adam — Agere Systems

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

link_loss_timer is never started.

SuggestedRemedy

In all instances in Figures 55-4, 55-7 where an OAMPDU is received, add "Start link_loss_timer" to the action list.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.3** *P* **84** *L* **35** # **411**

Daines, Kevin — World Wide Packets

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

Add description of remote device unilaterally terminating loopback.

SuggestedRemedy

Change sentence

"Once the timer reaches zero (either by counting down to zero or by being reset via a subsequent Loopback Control OAMPDU), the local device transitions to the LOOPBACK_END_1 state."

to:

"Once the timer reaches zero (either by counting down to zero or by being reset via a subsequent Loopback Control OAMPDU or by management resetting the timer), the local device transitions to the LOOPBACK_END_1 state."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.3.1** *P* **84** *L* **47** # **97**

Martin, David — Nortel Networks

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

What is the point of having this subsection heading alone? The state diagram was already referenced in the previous subsection.

SuggestedRemedy

Delete the subsection.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Artifact of the way diagrams spill onto pages. For consistency, I'd like to keep headings common throughout. Nearer the end of the project I'll work with someone more versed in Framemaker (IEEE editors in NJ, for instance) to clean these things up.

Cl **55** *SC* **55.5.3.1** *P* **85** *L* # **119**

Takashi, Ezawa — Oki Electric Industry C

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

Figure 55-4 isn't mentioned about following.
In the SEND_ANY_OAM state, if the local device initiates remote loopback, remote_state will change to LB_STABLE.
And the local device will remain in the same state.
This transfer line should be depicted in this diagram for clarify whether the state changes or not.
Figure 55-4 isn't reflected enough about loopback states.
These should be depicted more clearly in the loopback state diagram.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Agree with the commenter that having the local device in SEND_ANY_OAM state and the remote device in LOOPBACK_START state, during loopback, is not intuitive.

Not sure how "transfer line should be depicted in this diagram for clarify whether the state changes or not", though.

Please suggest how to more clearly depict loopback states.

Cl **55** *SC* **55.5.3.1** *P* **85** *L* **1** # **628**

Healey, Adam — Agere Systems

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

Use of undefined variable "code" used in transition from SEND_LOCAL_ONLY to SEND_LOCAL_REMOTE.

SuggestedRemedy

Add definition of "code" to 55.5.2.1.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.3.1** *P* **85** *L* **1** # **627**

Healey, Adam — Agere Systems

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

Figure 55-4, entering state SEND_LOCAL_ONLY, link_loss_timer should be lost_link_timer per 55.5.2.1.5 or vice versa.

SuggestedRemedy

Change to make consistent.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.4** *P* **85** *L* # **363**

Brown, Benjamin AMCC

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

Remove this section per my OAM Control presentation

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.4** *P* **85** *L* **41** # **98**

Martin, David Nortel Networks

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

States that "Per management's request, any OAMPDU may be transmitted".

SuggestedRemedy

This will require additions to clause 30 to include Actions for the remaining OAMPDU types (Ping Request / Response are there now). David Law has a draft presentation from the September meeting with proposed changes. I have comments against Clause 30 for actions for Loopback, Variable Request, Event Notification. I don't think it was intended that Management could request sending an Information PDU (?)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Commenter is correct in that additions to Clause 30 are required.

Per the question regarding the ability of Management to send an Information OAMPDU, the OAM Editor knows of no reason why a restriction should be placed on this.

Cl **55** *SC* **55.5.4** *P* **85** *L* **42** # **205**

Squire, Matt Hatteras Networks

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

OAM can send frames in response to received frames

SuggestedRemedy

Add another justification for OAM transmit.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See brown_oam_1_1102.pdf.

Cl **55** *SC* **55.5.4** *P* **85** *L* **45** # **206**

Squire, Matt Hatteras Networks

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

Would help to keep the diagrams and text on the same page. I.e. 55.5.4.1 looks empty because the diagram is a page later.

SuggestedRemedy

Keep figures with text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Diagrams spill onto subsequent pages. Perhaps someone more fluent in Framemaker can coach the EFM Editor.

Cl **55** *SC* **55.5.4.1** *P* **85** *L* **48** # **99**

Martin, David Nortel Networks

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

What is the point of having this subsection heading alone? The state diagram was already referenced in the previous subsection.

SuggestedRemedy

Delete this subsection.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See comment #97.

Cl **55** *SC* **55.5.4.1** *P* **86** *L* **1** # **629**

Healey, Adam Agere Systems

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

Time-qualified transmission does not begin until local_state and remote_state are both stable. This would imply intial Information OAMPDU exchange can happen at arbitrarily slow or fast rates.

SuggestedRemedy

Re-work state machine so that timer qualifications limit Information OAMPDU exchanges to 1 to 10 frames/s.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.4.1** *P* **86** *L* **1** # **630**

Healey, Adam — Agere Systems

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

Undefined variable "mr_oam_event" used in transition from SEND_ANY to SEND_INFORMATION.

SuggestedRemedy

Define mr_oam_event in 55.5.2.1.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.5** *P* **85** *L* # **364**

Brown, Benjamin — AMCC

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

Replace figure 55-6 per my OAM Control presentation

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.5** *P* **86** *L* **24** # **692**

Arnold, Brian — Cisco Systems

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

The prioritization of OAMPDUs being readied for transmit could be explained better. For instance, if more than one OAMPDU is ready for transmit within a max_rate period, does one type of OAMPDU have any precedence over another if both are ready, or shall it be a FIFO where the OAMPDU that was the second to be ready has to wait, or shall there be a different prioritization scheme?

SuggestedRemedy

Suggest the group consider the relative priorities of OAMPDUs ready for transmit and either:
a)decide that the current draft captures this sufficiently well already,
b)decide that additional explanatory text in 55.5.5 and/or changes to Figure 55-5 are necessary, or
c)decide that it is not necessary to prioritize OAMPDUs ready for transmit.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Likely a OAM STF discussion topic. However, permit the OAM Editor to weigh in. With Management controlling the requesting of OAMPDUs, prioritization is left up to Management. The priority handling of OAMPDUs, loopback frames and normal frames is thought to be handled in brown_oam_1_1102.pdf. However, some addition text (suggested remedy (b)) may be required.

Cl **55** *SC* **55.5.5** *P* **86** *L* **30** # **221**

Squire, Matt — Hatteras Networks

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

On a link on which OAM is enabled, do we require satisfactory negotiation of OAM capabilities to bring the link up? Ie. is an OAM stable state a pre-cursor to LINK_UP state? Or should the MUX entity only pass data if OAM is in a STABLE state?

SuggestedRemedy

Would just like an answer on this issue. Currently it doesn't seem so, though in the past its been discussed that if OAM cannot come up then we shouldn't pass traffic. Easiest thing to do would be to change the multiplexor diagram so that we discard frame if not in the stable state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Worthy of STF time in Kauai for sure.

One thought in advance. If OAM were required to successfully complete discovery in order to bring the link up, it would also need a timeout so as to revert to a non-OAM link. Consider two devices being connected, one with OAM, the other without.

Cl **55** *SC* **55.5.6** *P* **86** *L* # **365**

Brown, Benjamin — AMCC

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

Replace Figure 55-7 per my OAM Control presentation

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.5.6** *P* **86** *L* **52** # **100**

Martin, David — Nortel Networks

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

Wording clarification.

SuggestedRemedy

Change "passes OAMPDUs to the OAM Control function" to "passes OAMPDUs and loopback frames to the OAM Control function".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

While some wording will need to be changed, this suggested remedy is not accurate assuming brown_oam_1_1102.pdf is adopted. Specifically, loopback frames, per the aforementioned presentation, are passed directly from Parser to Multiplexer. OAM Control no longer gets involved in the data path.

Cl **55** *SC* **55.5.7** *P* **87** *L* # **366**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D**
Replace this entire section per my OAM Control presentation

SuggestedRemedy

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.7** *P* **87** *L* **24** # **130**
Yoshimura, Minoru NEC

Comment Type **E** *Comment Status* **D**
'The Control Parser shall...' is error in editting.

SuggestedRemedy
'The Control Parser shall...' should be 'The OAM Control shall...'

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.7** *P* **87** *L* **24** # **101**
Martin, David Nortel Networks

Comment Type **E** *Comment Status* **D**
Typo.

SuggestedRemedy
Change "The Control Parser shall implement" to "The OAM Control block shall implement".

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.5.7** *P* **87** *L* **44** # **854**
Thatcher, Jonathan World Wide Packets

Comment Type **T** *Comment Status* **D**
In loopback, there is no transfer of the RxOAMPDU to the Multiplexer. Or, there is no loopback at all. Starts in F55-7, but never makes it to F55-6.

SuggestedRemedy
TxOAMPDU=TRUE is wrong. Fix.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

See comments #917, 366.

Cl **55** *SC* **55.6.1** *P* **88** *L* **13** # **631**
Healey, Adam Agere Systems

Comment Type **E** *Comment Status* **D**
Missing "or".

SuggestedRemedy
Change "encoding of (an element of)" or "encoding of (or an element of)".

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **55** *SC* **55.6.2** *P* **89** *L* **4** # **947**
Ho-Sook Lee ETRI

Comment Type **T** *Comment Status* **D**
Figure 55-9 defines a specific address of "01-80-c2-00-00-02" for the DA of OAMPDU. This way of addressing in OAMPDU is valid only for the point-to-point link. It is not appropriate for the point-to-multipoint link.

SuggestedRemedy
We recommend that the DA of OAMPDU be defined to be the destination MAC address of the device terminating the link at the opposite side.

Proposed Response *Response Status* **W**
PROPOSED REJECT.

OAM is based upon Slow Protocols which use this particular reserved multicast address.

P2MP utilizes a LLID carried in the preamble which ONUs use to determine which frames are destined for it. Hence, a common, well-known DA for OAMPDUs is perfectly fine.

Cl **55** *SC* **55.6.2.1** *P* **89** *L* **28** # **103**
Martin, David Nortel Networks

Comment Type **E** *Comment Status* **D**
Redundant text. Redundant text.

SuggestedRemedy
Change "within two octets, as follows and as shown in" to "within two octets as shown in".

Proposed Response *Response Status* **W**
PROPOSED ACCEPT. PROPOSED ACCEPT.

Cl **55** *SC* **55.6.2.1** *P* **89** *L* **42** # **208**

Squire, Matt — Hatteras Networks

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

Is there any reason we don't take the flags from one end rather than take both 15 & 0 and go inside out?

SuggestedRemedy

Use bit 2 for the event indicator.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.2.1** *P* **89** *L* **47** # **691**

Arnold, Brian — Cisco Systems

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

Table 55-2. The comment at the bottom of the table says that the specific faults comprising Link Fault, etc. are outside the scope of clause 55. That's correct, but could it hurt to include a cross reference TBD that eventually says which clauses within those we're currently working on that do (or will) specify which specific faults make up Link Fault, Dying Gasp, and the Event Indications? Basically point to the relevant sections in clause 61, 62, 63 for copper, 56 for P2MP, etc.

SuggestedRemedy

Include a sentence indicating the relevant sections within the copper, P2P optics, and P2MP optics clauses where the specific faults are specified.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

We likely don't want to open Clause 55 each time a new PHY is added. Hence, the "outside the scope" text.

Cl **55** *SC* **55.6.3** *P* **90** *L* **22** # **413**

Daines, Kevin — World Wide Packets

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

"Type/Length" field should read "Length/Type". Bad editor.

SuggestedRemedy

See Comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3** *P* **90** *L* **23** # **369**

Brown, Benjamin — AMCC

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

missing a field in the description of the OAMPDU

SuggestedRemedy

Replace "Version field and Code field" with "Version field, Flags field, and Code field"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3** *P* **90** *L* **25** # **210**

Squire, Matt — Hatteras Networks

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

We should define operation for unknown codes.

SuggestedRemedy

We should probably handle unknown OAM opcodes the same way we handle unknown slow protocol types.
"
Whenever an implementation receives an OAM PDU with a code it does not understand, it passes that frame to the superior level.
"

We can also use this to address our "OAM channel" requirement in that higher entities can send an OAM frame with a unknown opcode that would get passed up to the higher layers on the far end. We'd have to change a few of the state diagrams to do this if desired.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Okay, I'll accept the fact that we need to address unknown codes. However, I don't (yet) agree with the suggested remedy. For instance the current layering requires management to trigger the sending of each OAMPDU rather than having these originate in the MAC Client. Similarly, when OAM Control receives an OAMPDU, it signals mangement and provides the code and data. (This functionality is being added per other comments, and will be in D1.2). Given that OAM uses Slow Protocols, this methodology seems to make sense.

I like the notion of not limiting OAM in the way that MAC Control was a one opcode sublayer, however, MAC Control didn't even pass unsupported opcodes anywhere. They were all discarded. So, OAM has more extensibility/upgradeability from that standpoint.

Cl **55** *SC* **55.6.3** *P* **90** *L* **5** # **29**
Veerayah, Kumaran ICR

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

Table 55-3: For code 00, "information" OAMPDU is used, whereas the other sections refer to this as "status" OAMPDU

SuggestedRemedy

Change "information" to "status" to be uniform.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3** *P* **90** *L* **7** # **209**
Squire, Matt Hatteras Networks

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

Use consecutive codes.

SuggestedRemedy

Use consecutive codes.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **90** *L* **27** # **211**
Squire, Matt Hatteras Networks

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

Is it the "status" or "informational" PDU?

SuggestedRemedy

Just need consistent terminology.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **90** *L* **27** # **104**
Martin, David Nortel Networks

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

Old PDU name still lingering.

SuggestedRemedy

Change "Status OAMPDU" to "Information OAMPDU". Need to search and change throughout this subsection (e.g. p.90, line 29; p.91, line 33 and line 37).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **90** *L* **27** # **632**
Healey, Adam Agere Systems

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

Status OAMPDUs are now Information OAMPDUs?

SuggestedRemedy

Change title for consistency.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **90** *L* **27** # **120**
Takashi, Ezawa Oki Electric Industry C

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

We propose that the terminology of "information OAMPDU" shall be used instead of " status OAMPDU " regarding the next five point.
Page: 90 - Line: 27,29,29,Page: 91 - Line: 33,37

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **90-91** *L* **27** # **932**
Seyoun LIM SAMSUNG ELECTRO

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

In the last meeting, Status OAMPDU[0x00] was changed into Information OAMPDU[0x00].
(1) the title of 55.6.3.1 is still Status OAMPDU[0x00].
(2) Figure 55-10 - status OAMPDU data field is also not changed.
But Draft v1.1 is not changed yet.

SuggestedRemedy

the remedy is
(1) 55.6.3.1 Information OAMPDU[0x00]
(2) Figure 55-10 - Information OAMPDU data field

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **91** *L* **1** # **212**

Squire, Matt — Hatteras Networks

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

Suggest we put the fixed information in fixed places to expedite processing.

SuggestedRemedy

Suggest something like:

Local State: 1B
Remote State: 1B
Local OAM Config: 1B
Remote OAM Config: 1B
Local OAMPDU Config: 4B
Remote OAMPDU Config: 4B
Local Extensions: Variable (TLV format)
Remote Extensions: Variable (TLV format)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

TLVs provide the greatest flexibility for future extensions to the standard.

Cl **55** *SC* **55.6.3.1** *P* **91** *L* **50** # **105**

Martin, David — Nortel Networks

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

I had this in a comment at the September meeting and there was a concern raised that for the multi-vendor case the Management systems at the two ends of the link may have different definitions of what in-service means. However, we are defining vague events like temperature and power. I don't see any difference here. I still think this indicator could be of use to Management. For example, prior to initiating a loopback request, Management would be wise to check that it is receiving an inactive in-service indication.

SuggestedRemedy

Add a new Local_State bit 3 called "in-service" with the following description:
"1 = Management for the Local Device believes the end station is in the in-service state. Tied to MIB variable.
0 = Management for the Local Device believes the end station is not in the in-service state. Tied to MIB variable."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **92** *L* **8** # **213**

Squire, Matt — Hatteras Networks

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

Tables 55-4 and 55-5 seem to indicate we have two states: one for status, one for loopback. The descriptions and state diagrams earlier lent themself to a single state covering both.

SuggestedRemedy

Clarify how many states and what they mean. Suggest 2 state approach.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Given the remote control and acknowledgements that have to take place, two states seems too few. OAM Editor could be misunderstanding his esteemed Chair, however.

Five discreet states were identified during OAM STF work in New Orleans.

Cl **55** *SC* **55.6.3.1** *P* **93** *L* # **131**

Yoshimura, Minoru — NEC

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

The unit value of Maximum_PDU_rate and Minimum_PDU_rate is not defined.

SuggestedRemedy

Add definition.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

"frames per second" will be added per comment #370.

Cl **55** *SC* **55.6.3.1** *P* **93** *L* **16** # **633**

Healey, Adam — Agere Systems

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

Tables 55-7 and 55-11, the maximum and minimum OAMPDU rate fields should specify units.

SuggestedRemedy

For bits 7:4, change description to "4-bit field which conveys the maximum number of OAMPDUs that will be sent per second".

For bits 3:0, change description to "4-bit field which conveys the minimum number of OAMPDUs that will be sent per second".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #370.

Cl **55** *SC* **55.6.3.1** *P* **93** *L* **16** # **689**

Arnold, Brian Cisco Systems

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

Table 55-7 and Table 55-11. The 4-bit fields for Maximum_PDU_Rate and Minimum_PDU_Rate have a lowest possible value of 0x0. The meaning of a rate of 0x0 is not clear, as one might infer that it is then permissible to send no OAMPDUs (or stop sending OAMPDUs) when Minimum_PDU_Rate is 0x0, even after OAM has been mutually discovered and activated.

SuggestedRemedy

Either change the lowest permissible value from 0x0 to 0x1, or explain better why 0x0 is an acceptable value in Table 55-7. This applies as well to the same fields in the Remote_OAMPDU_Configuration field of Table 55-11.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Will change to 0x1.

Cl **55** *SC* **55.6.3.1** *P* **93** *L* **1620** # **106**

Martin, David Nortel Networks

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

Timer values need to be aligned.

SuggestedRemedy

Need to be consistent with the Maximum_PDU_Rate / Minimum_PDU_Rate range definitions and the max_rate_timer / min_rate_timer values defined in subsection 55.5.2.1.5 pages 83-84.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **93** *L* **18** # **215**

Squire, Matt Hatteras Networks

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

The min-pdu-rate has to be less than the max-pdu-rate

SuggestedRemedy

Add a sentence to address.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **93** *L* **23** # **216**

Squire, Matt Hatteras Networks

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

The utility of the local/remote extension field escapes me. What is it for? Wouldn't it be better served with support for generic TLVs rather than only 6B of something?

SuggestedRemedy

Clarify use/benefits of extensions.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Early on, it was thought that a vendor's first OUI would be used as the vendor identifier. Dan Romascanu suggested using RFC 1213. Other suggestions were received during the review of the draft preceeding D1.0. These included a device and version field.

Does this help or is more required?

Cl **55** *SC* **55.6.3.1** *P* **93** *L* **29** # **161**

Romascanu, Dan Avaya Inc.

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

Device_Identifier field might be too small, while Private_Enterprise_Num is too large

SuggestedRemedy

Change width of Device_Identifier field to 16 bits, at the expense of reducing Private_Enterprise_Num to 24 bits

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

RFC 1213 allocated 32 bits for the Private Enterprise Number, correct? If so, wouldn't be better to retain it's current size and just enlarge the Device_Identifier. The OAMPDU has the space.

Cl **55** *SC* **55.6.3.1** *P* **93** *L* **45** # **107**

Martin, David — Nortel Networks

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

I had this in a comment at the September meeting and there was a concern raised that for the multi-vendor case the Management systems at the two ends of the link may have different definitions of what in-service means. However, we are defining vague events like temperature and power. I don't see any difference here. I still think this indicator could be of use to Management. For example, prior to initiating a loopback request, Management would be wise to check that it is receiving an inactive in-service indication.

SuggestedRemedy

Add a new Remote_State bit 3 called "in-service" with the following description:
"1 = Management for the Remote Device believes the end station is in the in-service state. Tied to MIB variable.
0 = Management for the Remote Device believes the end station is not in the in-service state. Tied to MIB variable."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **93** *L* **7** # **214**

Squire, Matt — Hatteras Networks

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

The use of the maximum PDU size isn't incorporated into any of the state diagrams or text descriptions.

SuggestedRemedy

Need to bring out in diagrams and text what we do with "bigger" frames (ie. violate the max size).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **55** *SC* **55.6.3.1** *P* **94** *L* **1** # **217**

Squire, Matt — Hatteras Networks

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

Remove potential for conflicts by having a single table definition for configuration and PDU configuration, then applying this to remote/local. Reproducing the tables and definitions just leads to potential problems.

SuggestedRemedy

Eliminate tables 55-9, 55-10, 55-11, 55-12, and create a single field format description for both local and remote.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **94** *L* **32** # **427**

Cravens, George — Mindspeed

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

Prior to exchanging Max_PDU_Size parameters, a device sends 128 octect PDUs. However, in 55.6.2 h) it is stated that "Implementations shall support OAMPDUs at least 64 octets in length."

This means that a device that only supports 64 byte OAMPDUs may not be able to exchange parameters properly.

SuggestedRemedy

Either change 55.6.3.1 to state that prior to exchanging Max_PDU_Parameters, a device will send 64 byte OAMPDUs, or change 55.6.2 h) to require support for 128 byte OAMPDUs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Since Information OAMPDUs comfortably fit within 64 octets, the first suggested remedy is recommended.

Cl **55** *SC* **55.6.3.1** *P* **94** *L* **3741** # **108**

Martin, David — Nortel Networks

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

Align timer values.

SuggestedRemedy

Need to be consistent with the Maximum_PDU_Rate / Minimum_PDU_Rate range definitions and the max_rate_timer / min_rate_timer values defined in subsection 55.5.2.1.5 pages 83-84.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.1** *P* **95** *L* **8** # **162**

Romascanu, Dan — Avaya Inc.

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

Width of Device_Identifier field might be too small, while Private_Enterprise_Num is too large

SuggestedRemedy

Change width of Device_Identifier field to 16 bits, at the expense of reducing Private_Enterprise_Num to 24 bits

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #161.

Cl **55** *SC* **55.6.3.4** *P* **95** *L* **39** # **948**

Ho-Sook Lee ETRI

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

It is required to define fields and procedures to record the transmission delay or the reply time which is to be measured through ping test.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The OAM Sublayer does not add any timestamps or sequence numbers to Ping Request & Ping Response OAMPDUs. This chore is left up to Management. Hence, the data field in Ping Requests is left unspecified. Management may fill in the data field with anything. The remote device will copy verbatim the data field into the Ping Response.

Cl **55** *SC* **55.6.3.4/55.6.3.5** *P* **95** *L* **37** # **935**

Seyoun LIM SAMSUNG ELECTRO

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

In draft v1.1, Ping request/response are defined to perform OAM ping.
but the data field is not defined yet. the data field should be defined with good contents properly.

SuggestedRemedy

two kinds of data field are below.

Type I field is composed of Ping Time Value(6bits), Ping Time value Enable(1 bit), Type(1 bit) for indication which one is request or response and Sequence Number(8 bit).

Type II field is composed of Sequence Number(7 bit) and Type(1 bit)
for for indication which one is request or response.

- Ping time value : local device sets this value to limit response time of remote device.
- Ping Time value Enable : indicate Ping Time value is enable or disable.
- Type : indicate Ping request or response OAMPDU.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Since the remote device copies the Ping Response OAMPDU data field verbatim into the Ping Response OAMPDU, any customization of the data field is left up to the local device's management. Management may choose to implement time stamps, sequence numbers, etc. At this point the OAM STF hasn't ventured into defining these and instead is leaving this up to Management.

Cl **55** *SC* **55.6.3.4/55.6.3.5** *P* **95** *L* **37** # **934**

Seyoun LIM SAMSUNG ELECTRO

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

In draft v1.1, Ping Request OAMPDU[0x04] and Ping response OAMPDU[0x05] are used to perform OAM Ping. the remote device which receives Ping Request OAMPDU is going to transmit Ping Response OAMPDU. when remote device response, the information of ping request received is copied to Ping response data field.
I don't think two kinds of code are necessary to indicate Ping request/response OAMPDU.

SuggestedRemedy

One bit is used to indicate Ping request/response OAMPDU instead of two kind of code-0x04 for request and 0x05 for response.
(example : 0 = OAM Ping request, 1 = OAM Ping response)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

At this point the data field of the Ping Request OAMPDU is left completely unspecified. With plenty of codespace, the need to consolidate isn't there.

Cl **55** *SC* **55.6.3.5** *P* **95** *L* **48** # **428**

Cravens, George Mindspeed

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

Ping Response time is unspecified, yet variable response OAMPDUs must be sent within one second. This seems inconsistant.

SuggestedRemedy

Align Ping Response reply time with the Variable Reponse reply time (within one second).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6.3.5** *P* **95** *L* **48** # **371**

Brown, Benjamin AMCC

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

The ping response time should not be unspecified

SuggestedRemedy

Replace "unspecified" with "1 second", the same response time required for Information OAMPDUs in response to Loopback Control OAMPDUs and the same response time for Variable Response OAMPDUs in response to Variable Request OAMPDUs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #428.

Cl **55** *SC* **55.6.3.5** *P* **95** *L* **48** # **218**

Squire, Matt — Hatteras Networks

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

Should say that implementations should try to ping responses fast.

SuggestedRemedy

Change "The response time is unspecified" to "The response time is unspecified, although implementations are suggested to respond quickly as the response time may be measured by the receiver to determine efficiency."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Other comments suggested 1 second responses. Will look at combining remedies.

Cl **55** *SC* **fig.55-4** *P* **85** *L* **2** # **683**

Ueda, Iori — Matsushita Communic

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

Replace "link_loss_timer_done" with "lost_link_timer_done"

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Figure 55-1** *P* **75** *L* **54** # **17**

Daines, Kevin — World Wide Packets

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

With OAM being mostly media/speed/PHY independent, perhaps a simpler layer stack diagram could be shown.

SuggestedRemedy

Remove 100 Mb/s link segment PHY stack.
Remote 1000 Mb/s link segment PHY stack.
Remove text "10 Mb/s link segment".
Center diagram on page.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Figure 55-11** *P* **98** *L* **40** # **419**

Daines, Kevin — World Wide Packets

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

Consider visual improvement to figure.

SuggestedRemedy

Consider hex grouping of bits.
For instance, "0123 4567" vs. current "0 1 2 3 4 5 6 7".

For instance, "1110 0000" vs. current "1 1 1 0 0 0 0 0".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Figure 55-4** *P* **85** *L* **1** # **361**

Brown, Benjamin — AMCC

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

wrong timer name

SuggestedRemedy

Replace "link_loss_timer_done" with "lost_link_timer_done"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Figure 55-4** *P* **85** *L* **2** # **916**

Tom Mathey — Independent

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

Text "link_loss_timer_done" is incorrect.

SuggestedRemedy

Change from "link_loss_timer_done" to "loss_link_timer_done"
Consider a new name as "loss_link_timer_done" is close to "link_loss_timer_done" and already used in 10BASE-T.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Figure 55-4** *P* **85** *L* **31** # **421**

Daines, Kevin — World Wide Packets

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

Exiting LOOPBACK_END_2 state and transitioning to SEND_ANY_OAM state may want to have STA input. For instance, STA may want time to read MAC attributes re: the loopback test. STA may want to query the local counters for Tx and Rx frames and determine if any were lost. Based on results STA may allow link to resume operation or do something else...

SuggestedRemedy

Condition "remote_state = STABLE" may need to be augmented.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #851.

Cl **55** *SC* **Figure 55-4** *P* **85** *L* **7** # **362**

Brown, Benjamin — AMCC

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

Change transition from SEND_LOCAL_ONLY to SEND_LOCAL_REMOTE_1

SuggestedRemedy

Replace "Parser:MADI * code=Information_OAMPDU" with "oam_remote_state_available=TRUE"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Figure 55-6** *P* **86** *L* **45** # **917**

Tom Mathey — Independent

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

For remote loopback to work, the receive frame parameters need to be assigned to a transmit frame. I have searched for but can not find some text or drawing which does an assignment of OAM:MADI parameters to the OAM:MADR parameters.

SuggestedRemedy

Is this missing?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I believe they are, and this deficiency is being remedied by brown_oam_1_1102.pdf.

Cl **55** *SC* **Figure55-4** *P* **85** *L* # **138**

Hirai, Hideyuki — Sumitomo Electric

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

Figure55-4 and Figure55-5 describe only the state diagram of Active mode node.
In Figure55-4, name of state "SEND_LOCAL_ONLY" is not appropriate for Passive mode node, because Passive mode node will not send any OAMPDUs before it receives information OAMPDU from the peer.
In Figure55-5, there are two SEND_INFORMATION state defined in the state diagram. Although the two SEND_INFORMATION states execute same thing, the conditions to transit to the two states are different.
Also, the condition to transit to SEND_INFORMATION state(upper one) is applicable only for Active mode node.

SuggestedRemedy

To make the document easily understandable, there should be Discovery state diagrams of Active mode node and that of Passive mode node. Also, there should be Transmit state diagrams of Active mode node and that of Passive mode node.
In Discovery state diagram for Passive mode node, name of state "SEND_LOCAL_ONLY" should be changed to "WAIT_FOR_RECEIVE_INFORMATION".
SEND_INFORMATION states in Transmit OAMPDU state diagrams should be SEND_INFORMATION1 and SEND_INFORMATION2 states.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Points are all valid. See comment #363. The suggested remedy is contained within brown_oam_1_1102.pdf.

Cl **55** *SC* **Figure55-4** *P* **85** *L* # **141**

Hirai, Hideyuki — Sumitomo Electric

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

The definition of "lost_link_timer" is not clear.

SuggestedRemedy

In 55.5.2.1.5, add a sentence that "If no information OAMPDUs are received by the time "lost_link_timer" expires, Discovery process is restart."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Figure55-4** *P* **85** *L* # **139**

Hirai, Hideyuki — Sumitomo Electric

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

In case both nodes of a link are Active mode nodes, if both nodes send a Loopback Control OAMPDU simultaneously, both node transit to LOOPBACK_START state. This state is meaningless and should be avoided.

SuggestedRemedy

There should be loopback states of LOOPBACK_START2 and LOOPBACK_END2 for the node which requests loopback operation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Agree with commenter that two actives nodes requesting loopback at the same time needs to be handled.

Cl **55** *SC* **Figure55-5** *P* **86** *L* # **140**

Hirai, Hideyuki — Sumitomo Electric

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

Figure55-5 does not consider the process while a node is in loopback mode. Therefore, a node in loopback mode transit to SEND_INFORMATION state(upper), and cannot send OAMPDUs except information OAMPDUs.

SuggestedRemedy

A node in loopback mode should be remain in SEND_ANY state. That is Figure55-5 should describe that a node remains in SEND_ANY state, if "loacl_state" and "remote_state" are LB_STABLE, LB_UNSTABLE or LB_COMPLETE.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

While the OAM Editor didn't quite understand the comment, the OAM Discovery state machine has been created to handle both discovery and entering/leaving loopback mode.

Cl **55** *SC* **Figure55-8** *P* **87** *L* # **142**

Hirai, Hideyuki — Sumitomo Electric

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

"Generate Mux:MADI to..." should be "Generate Mux:MADR to..."

SuggestedRemedy

Change MADI to MADR

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

State diagram likely going away per brown_oam_1_1102.pdf.

Cl **55** *SC* **Table 55-1** *P* **78** *L* **1** # **19**

Daines, Kevin — World Wide Packets

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

Font size in Comment column is inconsistent. 9 pt/10 pt.

SuggestedRemedy

Make font sized consistent in table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table 55-1** *P* **78** *L* **3** # **340**

Brown, Benjamin — AMCC

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

There are different fonts in the text of this table

SuggestedRemedy

clean up fonts

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table 55-12** *P* **95** *L* **11** # **417**

Daines, Kevin — World Wide Packets

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

Inconsistency of field names.

SuggestedRemedy

Change "Private_Enterprise_Num" to "Enterprise_Identifier" to be consistent with "Device_Identifier" and "Version_Identifier".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table 55-15** *P* **97** *L* **13** # **372**

Brown, Benjamin — AMCC

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

When bit 7 = 1, how many Variable Value bytes follow? Is it always exactly 1 or 0? The descrtipion of Variable Value says form 1 to 128.

SuggestedRemedy

Specify that exactly 1 byte follows and that its content should be 0x00.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table 55-15** *P* **97** *L* **13** # **418**

Daines, Kevin World Wide Packets

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

Bits are wrong.

SuggestedRemedy

Reword "Description" to read:

When bit 23 = 1, bits 22:16 represent a Variable Error indication. Refer to Table 55-16 for the encoding of bits 22:16.

When but 23 = 0, bits 22:15 represent the length of the Variable Value field in octets. An encoding of 0x00 equals 128 octets. All other encodings represent actual lengths.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table 55-2** *P* **89** *L* **4146** # **367**

Brown, Benjamin AMCC

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

Add references to bit descriptions

SuggestedRemedy

Dying Gasp gets reference to 30.11.x.y.z Link Fault get reference to 30.5.1.1.4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table 55-3** *P* **90** *L* **6** # **368**

Brown, Benjamin AMCC

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

Don't need to keep code 01 reserved

SuggestedRemedy

Collapse this table, so that event notification get code 01...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table 55-3** *P* **90** *L* **7** # **412**

Daines, Kevin World Wide Packets

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

Italics.

SuggestedRemedy

Change "Reserved" to italics", repeat on line 17.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table 55-4** *P* **91** *L* **52** # **414**

Daines, Kevin World Wide Packets

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

Capitalizations.

SuggestedRemedy

Change "loopback" to "Loopback" on line 52.
Change "stable" to "Stable" on line 54.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table 55-7** *P* **93** *L* **1619** # **370**

Brown, Benjamin AMCC

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

Missing description of what the value refers to

SuggestedRemedy

For Maximum_PDU_Rate, replace "4-bit field which conveys maximum rate OAMPDUs will be sent" with "4-bit field that conveys the maximum number of OAMPDUs sent per second"

For Minimum_PDU_Rate, replace "4-bit field which conveys minimum rate OAMPDUs will be sent" with "4-bit field that conveys the minimum number of OAMPDUs sent per second"

Make the same changes to Table 55-11.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table 55-8** *P* **93** *L* **32** # **415**

Daines, Kevin World Wide Packets

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

Inconsistency of field names.

SuggestedRemedy

Change "Private_Enterprise_Num" to "Enterprise_Identifier" to be consistent with "Device_Identifier" and "Version_Identifier".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table 55-9** *P* **93** *L* **47** # **416**

Daines, Kevin World Wide Packets

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

Capitalizations.

SuggestedRemedy

Change "loopback" to "Loopback" on line 47.
Change "stable" to "Stable" on line 49.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table55-16** *P* **97** *L* # **145**

Hirai, Hideyuki Sumitomo Electric

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

There is no specific explanation on each error indication.

SuggestedRemedy

Add a specific description on each error indication, or point a sentence which describe the error indication in detail.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Good point. A little more description is nice to have.

Cl **55** *SC* **Table55-2** *P* **89** *L* # **143**

Hirai, Hideyuki Sumitomo Electric

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

Table55-2,Table55-4(p91), Table55-6(p92),Table55-7 and 9(p93), Table55-10 and 11(p94)
There is no description on reserved fields of the tables above.

SuggestedRemedy

add description to each table that "reserved field should be set to zero when sending a OAMPDU, and should be ignored on reception."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **Table55-5** *P* **92** *L* # **144**

Hirai, Hideyuki Sumitomo Electric

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

"xx" in the table is not understandable.

SuggestedRemedy

Replace "xx" with "Don't care"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** SC P **107** L # **149**
Kramer, Glen Teknovus

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

(At editor's discretion the designation of this comment may be changed to Editorial)

Any sublayer located above (G)MII (media-independent interface) is media-independent. In the title of clause 56 "Optical Multi-Point" the reference to a particular media type is inappropriate.

SuggestedRemedy

1. Rename the clause 56 to "Multi-Point Control"
2. Change all references from Optical Mult-Point (OMP) to Multi-Point Control (MPC)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Although media independence is true in theory, in practice PON control is explicitly tuned to gating of transmission by activation and deactivation of a laser at the end station.
Thus Optical Multi-Point explains the goals achieved by the layer.

Following the paradigm of Clause 43 we receive:
Optical Multi-Point <-> Link Aggregation
Optical Multi-Point Control <-> Link Aggregation Control
Optical Multi-Point Control Protocol (MPCP) <-> Link Aggregation Control Protocol (LACP)
This leaves "Control" out of the Clause name.

For purity of form the clause name to be changed to "Multi-Point"

Cl **56** SC P **113** L **3** # **754**
Dolors, Sala Broadcom

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

The MAC control frames initiated at teh MAC control client have the client interface enabled. Therefore, this sentence is only applicable to MAC control frames initiated in the multiplexing control.

See my earlier comment on line 2.

SuggestedRemedy

Elimante the sentence. It is not correct.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change Client to MAC Client to make sentence correct.

Cl **56** SC P **116** L # **764**
Dolors, Sala Broadcom

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

the definition of the variable multipoint_transmission_in_progress is an AND operation of all TransmitEnables

The state diagram in Figure 56-7 never resets de variables.

The transmitDone coming from the MAC j should disable the TransmitEnable j

SuggestedRemedy

It is very difficult to describe in an isolated state diagram this operation. This should be incorporated in the state diagram of transmit a frame.

TransmitPending is generated by MA_control or MA_DATA
TransmitEnable is set to on by a scheduler

multipoint_transmission_in_progress = AND(TransmitEnable[1..n])

TransmitEnable is turn off by the end of frame transmission signal given by the corresponding MAC.

The process can be put in a state diagram.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See $172
multipoint_transmission_in_progress should be OR(transmission_in_progress[1..n])
Remove multipoint_transmission_in_progress from Figure 56-7.
When and how to turn on and off the TransmitEnable signal is depending upon scheduler, which is implementation dependent and out of EPON scope

Cl **56** SC P **117** L # **765**
Dolors, Sala Broadcom

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

What is the OMP service interface in figure 56-8

Service interfaces are defined by interlayer communication. Within a layer we should define functions or signals.

SuggestedRemedy

Rename OMP.indication to specific signals and for consistency with other boxes show the arrows to the left side of the box to indicate they are output of this box.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Arrows out os sides are variables affected (left - in, right - out), not service interfaces which are top and bottom (bottom - in, top - out).

Cl **56** *SC* *P* **119** *L* # **767**
Dolors, Sala Broadcom

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

Figure 56-10 shows an input signal called "register"

According to later definition it seems it should say "registered"

SuggestedRemedy

replace "register" by "registered"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See #893
Change the input signal called "register" in figure 56-10 to "registered".

Cl **56** *SC* *P* **119** *L* # **768**
Dolors, Sala Broadcom

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

The arrows below without touching the box are confusing.

SuggestedRemedy

TransmitEnable and multipoint_tx_progress are inputs so I would suggest to put them in the right side of the box as the other inputs.

The transmitPending is an output. I would put this at the right side of the box as output

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Relocate the TransmitEnable[j] to the left side of the box in the figure 56-10.
Relocate the transmitPending signal to the right side of the box.
And, eliminate multipoint_transmission_in_progress signal from the figure 56-10 since it is generated by OR(transmission_in_progress[1..n]).

Cl **56** *SC* *P* **119** *L* # **766**
Dolors, Sala Broadcom

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

The laser control signal is a global variable that the parser/multiplexer does not need to know.

The laser control belongs to the Multiplexing control, and the parser uses the TransmitEnable variable to know if it can transmit.

SuggestedRemedy

Eliminate Laser control signal in all section 2.4.1 including the figures and move it to section 56.2.2

Proposed Response *Response Status* **W**

PROPOSED REJECT.
LaserControl is driven by Gate processing block at ONU, not by multiplexing control.
However, the laser control is not needed in OLT, but it is needed in ONU.
Make two separate state diagrams for OLT and ONU.
Remove LaserControl from OLT state diagram.

Cl **56** *SC* *P* **119** *L* **47** # **769**
Dolors, Sala Broadcom

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

The local time is a global variable. It should be moved to Multiplexing control.

Still it can be accessed by all MACs. But this avoids confusion on mismatch of updates of the multiple copies if there is one per MAC.

SuggestedRemedy

Move local time from this section to section 56.2.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment is T and not TR

Cl **56** *SC* *P* **120** *L* **1** # **770**
Dolors, Sala Broadcom

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

Master is a global variable. It should be moved to Multiplexing control.

Having more than one can create confusion on errors because different MACs could potentially have it differently.

SuggestedRemedy

Move Master from this section to section 56.2.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment is T and not TR

Cl **56** *SC* *P* **120** *L* **29** # **771**
Dolors, Sala Broadcom

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

The transmission in progress variable is not needed. The way to detect that the transmission is done is by the signal returned by the MAC transmit done.

If there is a TransmitEnable means there is a transmission in progress. And it finishes by this indication of the MAC.

In figure 56-11 the transmission in progress is set but not used. It seems it can be eliminated

SuggestedRemedy

eliminate the variable

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The multiplexing control must have a way of determining when the selected instance finishes the transmission before it enables other instance for the transmission.
According to Figure 31B-1 in Annex31B, PAUSE operation TX state diagram also checks the transmission_in_progress signal before it starts another tranmission.

Cl **56** *SC* *P* **120** *L* **34** # **772**
Dolors, Sala Broadcom

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

Multipoint_transmission_progress is not used in this block

SuggestedRemedy

eliminate it

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See #771

Cl **56** *SC* *P* **121** *L* # **774**
Dolors, Sala Broadcom

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

Fig 56-11 should only deal with TransmitEnable instead of laser control. This state diagram describes the transmission of a frame when the interface is enabled.

SuggestedRemedy

Eliminate states Laser on and gated and all connecting arrows.

Connect wait and signal states with :

(MA_DATA.request or MA_Control.request) AND TransmitEnablej

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Functions are used for correct operation by the ONU.

Cl **56** *SC* *P* **121** *L* # **775**
Dolors, Sala Broadcom

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

Figure56-11 state send OMP frame sets the time stamp but doesn't uses it

SuggestedRemedy

Add a function to timestamp the Msdu:
timestamp(msdu, local_time)

the definition is:

```
timestamp(msdu, local_time){
   msdu[1..n]=local_time
}
```

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment is T and not TR

Cl **56** *SC* *P* **125** *L* **16** # **779**
Dolors, Sala Broadcom

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

the OMP.inidication(Error) seems to be a management alarm variable instead of a service interface.

SuggestedRemedy

Make this a variable and make the communication to the client through management

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment is T and not TR

Cl **56** *SC* *P* **128** *L* **2** # **781**
Dolors, Sala Broadcom

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

this definitions still need to be modified to avoid the need of more opcodes as agreed on.

SuggestedRemedy

Please add editor's comment indicating pending to modify

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment is T and not TR

Cl **56** *SC* *P* **129** *L* **8** # **782**

Dolors, Sala Broadcom

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

The local time is a global variable. It should be moved to Multiplexing control.

Still it can be accessed by all MACs. But this avoids confusion on mismatch of updates of the multiple copies if there is one per MAC.

SuggestedRemedy

Move local time from this section to section 56.2.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment T and not TR

Cl **56** *SC* *P* **132** *L* **50** # **785**

Dolors, Sala Broadcom

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

There is an indication to the MAC client for every message sent into the wire. Therefore the client can know with these indications if the ONU is registered. There is no need of more messages.

In general, the entire discovery process has too many new messages. But since the state diagrams still need to be split I will not describe all because it will change any one. This one is just an example.

SuggestedRemedy

Eliminate this MAC_control indicate

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Upon break-up of diagrams, editor will determine which message indicators are necessary.

Cl **56** *SC* *P* **139** *L* **10** # **786**

Dolors, Sala Broadcom

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

There is no requirement of periodicity of REPORT messages. The requirement is the periodicity of MPCP control messages. The timer should be reset everytime a MPCP frame is sent.

Therefore, this means option 2 in this editor's is more appropriate

SuggestedRemedy

when state diagrams are modified incorporate option 2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The mechanism supports steady state operation. As the steady state does not include REGISTER_REQ/REGISTER_ACK pairs, only REPORT remains for periodic generation and timouting.

Cl **56** *SC* *P* **149** *L* **32** # **720**

OGURA, Yasuo NTT

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

"A report frame may hold .....": This description is a part of "d) Number of requests." so that there should be a single paragragh and itemize "e)" should be the next description:"Pad/Reserved".

SuggestedRemedy

@It will be a single paragraph from "d) Number of requests." to "as specified in the Number of requests fields".
@Current itemize "e)" should be deleted.
@The next itemize "f)" should be change into the itemize "e)".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **???** *P* **???** *L* **???** # **911**

Tom Murphy Infineon

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

Several burst-mode receiver designs require a hard-wired Reset signal. This is particularly true if fast receiver times are to be implemented, now or in the future. This comment is intended to generate discussion of this topic in the MPCP group.

SuggestedRemedy

Provision for a receiver reset signal in the MPCP

Proposed Response *Response Status* **W**

BIG ITEM FOR DISCUSSION
Currently gating mechanism at OLT does not hold memory.
Accepting this comment would make OLT similar to ONU in that it now requires remembring outstanding grants in a grant table.
Furthermore this would require state of RTT for such table for proper compensation.

Cl **56** *SC* **1.1** *P* **108** *L* **39** # **749**

Dolors, Sala Broadcom

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

Since agreement was reached that only one LLID is used per ONU, then the multiple MACs and clients only are allowed at OLT. Hence it should be specific that this only applies to OLT.

SuggestedRemedy

replace sentence by:

Support of multiple MACs and MAC clients at the OLT

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment is T and not TR

Cl **56** *SC* **1.1** *P* **108** *L* **40** # **750**

Dolors, Sala Broadcom

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

There is no need for dynamic binding between MACs and ports. This is implementation dependent and can be "set" at development time.

A particular implementation supports a fixed number of MACs, and no more.

Something different is the assignment of an LLID number to these MACs.

I think this sentence tries to say: Support of dynamic binding of LLID number to MACs. But I think this is an implementation issue and there is no need to say it.

SuggestedRemedy

Eliminate sentence

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **1.2** *P* **109** *L* # **748**

Dolors, Sala Broadcom

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

Figure 56.1 shows the general layer stack with the MAC control layer and indicating that it is an optional layer. Since this figure represents just the layering of the PON system, I think it will be more useful to indicate the layering of PON and hence call this Multipoint MAC control and eliminate the optional comment.

SuggestedRemedy

Add Multipoint in the Mac control layer box
Eliminate the word optional in the same box

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **1.2** *P* **110** *L* # **751**

Dolors, Sala Broadcom

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

Figure 56-2 needs explanation. We have to give guidelines of why these multiple MACs are needed and how many are needed.

I did write this part but not all the text made it to the draft.
The suggested text below was submitted to the editor.
I do not know why it was not incorporated in the draft, I think it is needed.

SuggestedRemedy

Add the following text:

As depicted in Figure 56-2, the layered system may instantiate multiple MAC entities, using a single physical layer. A different MAC instance is used at the OLT to communicate with an ONU. The individual MAC instances offer a Point-to-point emulation service between the OLT and the ONU. An additional MAC is instanciated to communicate to all ONUs at once. This instance takes maximum advantage of the broadcast nature of the downstream channel by sending a single copy of a frame and this frame is being received by all ONUs. This MAC instance is referred to as Single Copy Broadcast (SCB). The total number of MAC instances and clients an OLT supports is N+1 where N is the total number of ONUs in the network.

The ONU only requires one MAC instance since frame filtering operations are done at the RS layer before reaching the MAC. Therefore, MAC and layers above are Emulation agnostic at the ONU.

Editor's note: To be removed prior to publication. The ONU layer specification is pending on confirmation from the group of defining one LLID per ONU.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Supplied text with additional clarifications should be added.

Cl **56** *SC* **113** *P* **2** *L* # **753**

Dolors, Sala Broadcom

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

MPCP can generates frames without MAC control intervention.

Therefore we need to decide if the MPCP message has priority over a MAC control client frame.

For more tighter reaction of MPCP, I suggest to give multiplexing MAC control frames priority over MAC control client frames.

SuggestedRemedy

Change sentence in line 2-3

"Frames generated... MA_DATA primitive."

by the paragraph:

Frames generated in the Multiplexing MAC control without client intervention (i.e. empty reports) are given priority over MAC control client frames (i.e. Pause), this is, the MAC control initiated frame must be the next frame to be transmitted after completing the trasnmission currently in progress, if any. For the trasnmission of this frame, the Multiplexing control instructs the multiplexer to enable the corresponding MAC interface but not the Client interface. Therefore, no client interface is enabled.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
MAC Control Client does not generate frames, the Client activates primitives inside MAC Control that in turn generate fames.

Cl **56** *SC* **2** *P* **112** *L* # **150**

Kramer, Glen Teknovus

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

Throughout the text "Multiplexing MAC Control", "Multi-Point MAC Control", and "Multipoint MAC Control" is used interchangeably.

SuggestedRemedy

Change all occurances of "Multiplexing MAC Control", "Multipoint MAC Control", to "Multi-Point MAC Control".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **2** *P* **112** *L* **18** # **758**
Dolors, Sala Broadcom

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

This OMP is in the MAC instance. Therefore it can perform the MPCP operations that are MAC instance specific.

SuggestedRemedy

Change definition for the following one:

This block is reponsible for handling the MPCP MAC dependent operations

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change text to read "This block is reponsible for handling the MPCP in the context of the MAC."

Cl **56** *SC* **2** *P* **112** *L* **4** # **759**
Dolors, Sala Broadcom

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

MPCP has global control operations. Since this is the only global block they will need to be defined here.

SuggestedRemedy

Add the following sentence at the end of this paragraph:

In addition, it also performs the MPCP control operations that are global and not MAC dependent

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment is T and not TR

Cl **56** *SC* **2** *P* **112** *L* **51** # **752**
Dolors, Sala Broadcom

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

line 51 and 52 use the word assertion instead of enabled.

Even if this functions/interfaces are asserted the frame cannot passed if it is not allowed.

SuggestedRemedy

Replace "assertion" by "enabling"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Interfaces are enabled, however signals are asserted. Text intended to read as "signal indicating primitive was activated".
Text to be modified for grater clarity.

Cl **56** *SC* **2** *P* **115** *L* **32** # **320**
Khansari, Masoud Centillium Communicat

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

Select function should reset transmitPending[j] before passing the index value to Enable State

SuggestedRemedy

TransmitPending[j] variable is defined but not used in State diagram of Multiplexing Control state machine. Make the require changes in state diagram and description of select() function.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
TransmitPending is reset in state TRANSMIT READY in Figure 56-11

Cl **56** *SC* **2.1** *P* **113** *L* **21** # **756**
Dolors, Sala Broadcom

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

For consistency with MAC control notation "subtype" should be called "opcode". This is not a new field but it is the opcode defined in MAC control

SuggestedRemedy

change "subtype" for "opcode" in this line and everywhere referring the same thing.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment is E and not TR

Cl **56** *SC* **2.1** *P* **113** *L* **29** # **757**
Dolors, Sala Broadcom

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

Not all MAC control frames are generated by a previous MA_Control.request.

An example is a report that doesn't contain a request but it has to be sent to meet timing sync requirements

SuggestedRemedy

Add at the end of sentence c):

or as a result of an MPCP event that generates a frame

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment is T and not TR

Cl **56** *SC* **2.1** *P* **113** *L* **50** # **760**

Dolors, Sala Broadcom

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

MAC handler has not been used so far. For clarity it should use the same description as used so far. For consistency on the description so far this should say MAC interface

SuggestedRemedy

Modify line 50 from : "it enables.... any frames"

to the following:

"It enables the transmission of only one MAC interface such that all other interfaces cannot transmit any frame."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **2.1** *P* **113** *L* **6** # **755**

Dolors, Sala Broadcom

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

For clarity of the operation of the interfaces, the process to guarantee one frame at a time with multiple interfaces is needed.

SuggestedRemedy

Add the text between first and second paragraph in this page (at line 6)

The reception of a frame in MACi enables the ReceiveFrame interface of MACi. Note that only one receive MAC interface will be enabled at any given time since there is only one PHY interface. If the received frame is a data frame the MA_DATA.indication interface of client i interface is enabled. If it is a control frame the MA_CONTROL.indication is enabled. The forwarding of the receiving frame from the enabled MAC interface to the enabled Client interface follows the normal procedures of the MAC control specification. Data frames are directly passed to the enable client interface. Control frames are processed by the MAC control and the corresponding control function is performed before passing the indication to the client.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
There is no contention in the receive path, contention only exists in transmit path.

Cl **56** *SC* **2.2** *P* **113** *L* # **773**

Dolors, Sala Broadcom

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

This section should describe the mechanism that avoids fragmentation. In other words the multiplexing control should enable an interface if the frame can be completely transmitted because it fits in the remaining of the grant.

in fact this is the gate function description in section 3.6

SuggestedRemedy

Move gate operation (section 3.6) in here

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Multiplexing different MACs at OLT is a different task than gating the ONU.
Many comments so far request separate descriptions, unifying these different blocks is counter productive.
Fix the overlab between gate operation and multiplexing control in ONU.
In OLT, the multiplexing control is not related to the gate operation.

Cl **56** *SC* **2.2** *P* **113** *L* **53** # **761**

Dolors, Sala Broadcom

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

The sharing of a PHY is not only for P2PE. SCB also shares a PHY with P2PE.

SuggestedRemedy

Replace last sentence of this paragraph with the following:

The purpose of the multiplexing control is to avoid collision of frames from different MAC clients at the RS layer and below when multiple clients share a single PHY.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **2.2** *P* **114** *L* # **762**

Dolors, Sala — Broadcom

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

The transmit enable and transmit in progress variables must be duplicated to have one per data and one per control.

The mutliplexing control does not have enough information in knowing there is a frame ready in client i. It needs to know if it is a MAC control or data frame.

This can be extended two ways.

1) add another variable FrameType which indicates what type of frame is ready. If both are ready, the control frame will be indicated following the MAC control priority.

2) duplicate the function and have one for data and one for control for each instance.

Since both are just flags anyway. Option 2 gives more information. So I would recommend to add a signal for each interface.

SuggestedRemedy

Have a TransmitPendingData and a TransmitPendingControl for each instance.
Following MAC control priority, the TransmitEnable does not need to be duplicated.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The transmitPending is true if instance is ready to transmit any frame.
Priorization is not handled by multiplexing block, let's leave this to the load balancer function that is implementation dependant.
MAC Control precedence over normal frames is guaranteed per MAC, not across MACs.

Cl **56** *SC* **2.2** *P* **114** *L* # **763**

Dolors, Sala — Broadcom

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

Figure 56-5 has inverted the multipoint_transmission_in_progress and transmission_in_progress sides. The multipoint version is the output of this block and not the input.

SuggestedRemedy

Reverse side of this two variables in the block.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
transmission_in_progress[j] should be the input signal.
The multipoint_transmission_in_progress is also input and generated by transmission_in_progress[1..n]

Cl **56** *SC* **3.3** *P* **122** *L* **46** # **152**

Kramer, Glen — Teknovus

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

OMP Parser/Multiplexor is not a sublayer but a functional block.

SuggestedRemedy

Change "sublayer" to "functional block"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
This change should be done in this line and in all references of this block.

Cl **56** *SC* **3.4** *P* *L* # **789**

Dolors, Sala — Broadcom

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

The capability vector is used on the decision flow of discovery operation. But it is not defined and interpreted by the client. Information can be passed to the client without specification. But if it is involved in the operation decision it must define.

SuggestedRemedy

To guarantee the capability vector must either be defined or eliminated of the decision flow.

Temporarily it should be add an editor's note. And eventually a decision needs to be made on this.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Definition of capability vector left intentionaly vague to allow exchange of 'out-of-band & out-of-scope' information during registration.
Editor will place note in text.

Cl **56** *SC* **3.4** *P* **127** *L* # **780**

Dolors, Sala — Broadcom

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

The concept "end stations" has a meaning of stations behind the ONU. MPCP does not deal with registration of devices behind ONUs.

For consistency of the entire clause "end-stations" should be "ONUs"

SuggestedRemedy

replace "end-station" for "ONU"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Editor will make appropriate changes.

Cl **56** *SC* **3.4.1** *P* **131** *L* **48** # **784**

Dolors, Sala Broadcom

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

An editor's note saying that the contention resolution was still under study was supposed to be added somewhere in the discovery section.

But it is no there.

This note should be maintained until a motion deciding on the contention resolution is passed.

SuggestedRemedy

Add an editor note:

the contention resolution is under study.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Editor will make appropriate changes.

Cl **56** *SC* **3.4.1.4** *P* **131** *L* **39** # **783**

Dolors, Sala Broadcom

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

there is no need than one timer per ONU. Since this is already in a MAC instance, there is no needed of an array of SA.

SuggestedRemedy

Elimanate [SA] reference of this timer

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Section is dealing with an OLT which has need for multiple timers.
Each timer is associated with an ONU attemptimng to register, so this occurs prior to assigning a MAC instance.

Cl **56** *SC* **3.4.1.6** *P* **134** *L* # **156**

Kramer, Glen Teknovus

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

Discovery Processing Slave State Diagram I (Fig. 56-17) employs two contention resolution mechanisms: random delay and binary exponential backoff. Simulation-based analysis revealed that this combination always results in performace worse than just random delay method.

Simulation results were posted on the reflector.

SuggestedRemedy

Remove DEFERRAL state from the Discovery Processing Slave State Diagram I.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Pending group decision on which method to use, editor will make appropriate changes.
Additional cleaning of text required as well.

Cl **56** *SC* **3.6** *P* *L* # **787**

Dolors, Sala Broadcom

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

The gate processing is a global operation and not MAC specific. It should be moved to Multiplexing Control block section 2.2

SuggestedRemedy

move gate operation to section 2.2

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Gating is performed per MAC and is not global.

Cl **56** *SC* **4** *P* **152** *L* # **325**

Khansari, Masoud — Centillium Communicat

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

Destruct option in the flag field of REGISTER_REQ MPCPDU is not sufficiently explained. For example, it is not clear if OLT has to acknowledge this message and if yes how.

Similarly Forced registeration option in the flag field of REGISTER MPCPDU. Is it necessary for ONU to acknowledge this? What if ONU never receives this message? Does OLT retransmit another REGISTER message?

SuggestedRemedy

Verify all the corner cases in the case of Destruct and Forced registeration options and include them in the state diagrams of Figure 56-16 and 56-17.

Figures 5-16, 5-17, 5-18 regarding the master's and slave's discovery procedure requires a major over-hual. At moment, it is not clear that we have covered all the corner cases and the presentation of these diagrams make this even more difficult.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Editor will make appropriate changes to text and diagrams to clarify.
For the record, deregistration does not rewuire acknowledgement, as the OLT unilaterally stops gating the LLID following deregistration. In case messgae is not received, action through error state due to lack of gates will reset the ONU.

Cl **56** *SC* **4.2** *P* **146** *L* # **154**

Kramer, Glen — Teknovus

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

The standard currently presents an inconsistent view on the MPCP. On the one hand STF made sure that scheduling algorithm remain vendor-specific. On the other hand formats of GATE and REPORT messages are fixed and do not allow any algorithm-specific information to be passed between scheduler (OLT) and consumers (ONUs). Unavoidably, once and again new proposals would appear calling for custom fields to be included in the message format.

That inconsistency must be resolved.

SuggestedRemedy

I see two options.

1. Allow custom fields to be included in the message format. The fields would have Type-Length-Value format. Type should be unique (use vendor ID?)

2. Allow OLT and ONUs by mutual agreement to switch to custom message format. This option would require a "format ID" or "rev ID" field in the message.

(This is not a specific solution. Provided that the STF has a chance to discuss this issue and identify better approach, the commenter may/will withdraw this comment and resubmit a new one with only one solution)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See 635
We are not dealing with proprietary protocols, rather with a standard protocol. Thus option 2 as described is not relevant to this group.
In order to allow custom fields to be exchanged in a standadized fashion, a TLV mechanism is to be defined.
Mechanism requires:
1) Vendor identification during discovery sequence (TBD)
2) 1 byte type/length field to be interpreted as:
4 most significant bits - type
4 least significant bits - length
type value definitions:
0 - no field present, always paired with 0 length
0-7 reserved
63 extend, first byte of payload is extension of type (to values 16 - 271)
8 - 14 to be interpreted according to vendor
15 extend, first byte of payload is extension of type (to values 272 - 527) to be interpreted according to vendor

Cl **56** *SC* **4.2** *P* **146** *L* # **153**

Kramer, Glen — Teknovus

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

For protocol robustness GATE and REPORT messages should be symmetrical. If the REPORT reports 8 queue lengths, so should the GATE be able to assign transmission lengths for 8 queues.

THERE IS NO LAYERING VIOLATION IN DOING SO!

Here is the suggested mechanism:
1. Scheduler (MAC Control Client) in OLT creates a GATE message with 8 slot lengths - LENGTH[0..7] and a total length TOTAL_LENGTH

TOTAL_LENGTH = LENGTH[0] + ...+ LENGTH[7]

2. ONU receives the GATE. MPCP will read the TOTAL_LENGTH and program aggregated slot. MPCP indicates GATE message to MAC Control Client.

3. MAC Control Client makes sure (optionaly) that each queue i transmits what is specified by LENGTH[i].

As one can see, queue assignemnt and selection is done in the MAC Control Client. GATE message is only a transport for this information, similarly to REPORT transporting it in the opposite direction.

What if it is not done? Then either ONU's algorithm should be standardized, so that OLT knows exactly what ONU will do (i.e, priority queueing, wighted fair queueing, deficit-based queueing, etc.). Or else both the OLT and ONU should be SLA-aware to make sure that (a) OLT grants a proper slot to the ONU, and (b) ONU divides it between queues according to SLAs.

SuggestedRemedy

Modify GATE format to include slot_lengths for up to 8 queues and the total length.

GATE format slide will be submitted to the STF editor.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
There is no symmetry between GATE and REPORT operation.
MAC layer opens and closes transmitter, it is responsibility of higher layers to implement QoS. Negotiation of SLA parameters are clearly outside the scope of this standard.
Gating function is simple and consistant with Baseline and all discussions leading to Baseline.
Proposals of incorporating QoS into the MAC layer have caused great pain in the past, luckily we are over them.
Further, packing of multiple grants into a single GATE would not be possible, greatly increasing overheads and reducing efficiancy.

Cl **56** *SC* **4.5** *P* **153** *L* **6** # **788**

Dolors, Sala — Broadcom

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

The MAC should not be destroyed when an LLID is de-registered. It just becomes inactive. The mac still exists. This simplies the description and does not change functionality.

Why is this destruct indication defined? this seems to be a unregister operation. It would be helpful to change the name destruct for unregister or something similar to describe the functionality.

SuggestedRemedy

Eliminate the sentence "subsequently the MAC is destroyed.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
"Destroy" terminology to be changed to "Deallocated" terminology.

Cl **56** *SC* **56** *P* *L* # **99000**

Diab, Wael William — Cisco Systems

Comment Type **TR** *Comment Status* **A** *D1.0*

There is no mention on the constraint for the local time stamping. I believe that there is an inherent assumption that the delay throuh the MAC & Phy is relatively constant. This needs to be explicitly stated in the draft.

SuggestedRemedy

Please add a timing constraint for the time stamping mechanism to eliminate any variability through the MAC and Phy. For instance, a min and max time between processing to trnsmition.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
Transmission/reception delay can not be distinguished from propagation delay.
Specification needs to constrain delay variations not necesseraly delay.
D1.0 #672

Cl **56** *SC* **56** *P* **107** *L* **1** # **918**

Tom Mathey — Independent

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

The Optical Multi-Point clause is completely missing a system level topology clause.

SuggestedRemedy

Add. See existing 802.3 topology clauses for guidance. Include such items as number of splices, splice location vs link length, db losses, start-up and turn-off limitations, test parameters, min/max distances between splices and/or groups of splices, etc. Include test criteria.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Need volunteer to draft topology sub clause

Cl **56** *SC* **56.1** *P* **111** *L* **53** # **700**

OGURA, Yasuo NTT

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

It is hard for me to understand how OLT and ONU process a Discovery, Gate and Report.

SuggestedRemedy

How about add some "Sequence chart"s which is written in Baseline document .
For example, make a new chapter:"56.1.5 Sequence Chart".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Text describing the protocol functionality is needed at beginning.
Please supply text if you have it.

Cl **56** *SC* **56.1 &2** *P* *L* # **994**

Ajung Kim Samsung Elec

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

Most of the confusion and misinterpretations arise from explaining two different systems (OLT, ONU) by one universal model and diagram.
For example, the objective b) in 56.1.1 applies only to OLTs, and it was neither an objective, nor in draft 1.0.

SuggestedRemedy

Split the state and block diagrams for ONU and OLT, reflecting the facts that;
- the objective b) is supposed to be 1LLID/ONU as a result of the Sep. meeting.
- LaserControl is applicable only to ONUs, as OLT PMD has no interface for the LaserControl.
- The parts referring to 'multiple clients and underlying MACs' in Muliplexing MAC control can apply only to OLTs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.1.1** *P* **108** *L* **39** # **598**

Bemmel, Vincent Alloptic

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

Please refer to Draft 1.0 comment #515. It was agreed to rewrite the objective:
"b) Support multiple LLID per physical ONU"
in order to reflect a single LLID per ONU.

However, the new text:
"b) Support multiple MAC and MAC Clients"
does NOT address the desired objective. The issue at hand is the # LLIDs per ONU.

SuggestedRemedy

Per the Draft 1.0 review, please modify the text to reflect a single LLID per ONU.

Replace
"b) Support multiple MAC and MAC Clients"

with:
"b) support a single LLID per ONU"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
It was agreed to support a single LLID per ONU but there is still the need of a multiple MACs and MAC clients at the OLT

Suggest to modify b) to "Support multiple MAC and MAC Clients at the OLT"
And add "support a single LLID per ONU" as a new item in the list

Cl **56** *SC* **56.1.2** *P* **110** *L* **4** # **599**

Bemmel, Vincent Alloptic

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

ONU model is missing

SuggestedRemedy

Add ONU Layered system diagram

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The ONU layer model is the same as OLT. What varies is the number of MACs in the ONU. And this is just a special case of the picture given. However, it should explicitly say that the ONU only require one MAC.

This comments is also addressed in comment

Suggestion: Add text.
Propose use text recommended in comment 751.

Cl **56** *SC* **56.1.3** *P* *L* # **936**
Jaeyeon Song Samsung

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

Figure 56-3, the interface of MAC Control Client and Control multiplexeris not clear.
It is related to Control multiplexer state diagram(56.2.4.1), too.

SuggestedRemedy

Clarify the interface and show in the diagram

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.1.3** *P* **111** *L* **30** # **950**
Chan Kim ETRI

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

Most of the important functions in generating grants, or using grants is all performed aggregate for all links. This holds true in OLT and ONU(when ONU has multiple MAC instances)
So OMP should better be represented as a common block for all instantiated emulated links. not many instantiation.

SuggestedRemedy

represent the functional block diagram of optical multipoint as a single entity with many instantiated service interfaces up and down.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Having a single istance for each MAC simplifies the document structure.

Cl **56** *SC* **56.1.3** *P* **111** *L* **4** # **597**
Bemmel, Vincent Alloptic

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

It is not very clear how/whether the different functions shown in figure 56-3 apply to the OLT vs. the ONU.

The behavior is different and needs to be explicitely discussed in the context of OLT vs. ONU.

SuggestedRemedy

Throughout Clause 56, add OLT vs. ONU clarifications whenever a function is being discussed.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Please suggest locations and text.

Cl **56** *SC* **56.1.4** *P* **111** *L* **45** # **392**
Brown, Benjamin AMCC

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

This section describes what conventions are used for the state machines. I recommend these conventions be reviewed and the state machines cleaned up accordingly.

SuggestedRemedy

Clean up the state machines according to the conventions cited.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Ben can you point out where state machines deviate from conventions?

Cl **56** *SC* **56.1.4** *P* **111** *L* **46** # **388**
Brown, Benjamin AMCC

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

"is comprised of" doesn't make sense

SuggestedRemedy

Replace all instances of "is comprised of" with "comprises"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.2** *P* **112** *L* # **606**
Bemmel, Vincent Alloptic

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

Please clarify the operation at the ONU as well. E.g., it is not clear from the text that at the ONU the number of parsers/mux instances is equal to one.

SuggestedRemedy

Add under the paragraph of line 23 the following:

"At the ONU, a single MAC instance is used to communicate with each MAC instance at the OLT. In that case, the Multiplexing MAC Control contains only one instance of the Parser/Multiplexer function."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.2** *P* **112** *L* **10** # **390**

Brown, Benjamin AMCC

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

Is there 1 copy of Multiplexing MAC Control or 1 per MAC? Figure 56-4 makes it look like just 1 copy but the text makes it sound like there is 1 copy per MAC.

SuggestedRemedy

Please clarify

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See the line 22, page 112 "... the layered system may instantiate multiple MAC entities, using a single Multiplexing MAC Control"

Cl **56** *SC* **56.2** *P* **112** *L* **14** # **391**

Brown, Benjamin AMCC

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

The description for bullet b (by the way, the bullet numbering/lettering needs to be cleaned up) isn't a proper sentence, or at least I can't understand it.

SuggestedRemedy

Please clean up the sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.2** *P* **112** *L* **6** # **389**

Brown, Benjamin AMCC

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

What is a handler?

SuggestedRemedy

Define what a handler is to those of us not accustomed to software terms.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "MAC handlers" by "MACs"

Cl **56** *SC* **56.2.1** *P* *L* # **937**

Jaeyeon Song Samsung

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

In Figure56-3, Figure 56-4, Figure 56-6, 'multiplexing MAC Control' in the title.

SuggestedRemedy

Not multiplexing MAC Control , but multipoint MAC Control

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
The multipoint MAC Control is proper.

Cl **56** *SC* **56.2.1** *P* **112** *L* **20** # **732**

OGURA, Yasuo NTT

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

In the "Multiplexing Control", there is not the mention when multiple transmit request happen at the same time.

SuggestedRemedy

How about add following description.
"Scheduling algorism is out of scope of 802.1ah in the case of multiple transmit request happen at the same time".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
"Scheduling algorithmm is implementation dependant, and is not specified for the case where multiple transmit request happen at the same time".

Cl **56** *SC* **56.2.1** *P* **113** *L* **2** # **600**

Bemmel, Vincent Alloptic

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

Typo:
"Frames generated at the MAC Control are given priority..."

SuggestedRemedy

"Frames generated at the MAC Control Client are given priority..."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
MAC Control client does not generate frames, it only invokes primitives at the MAC Control layer which in turn generate frames.

Cl **56** *SC* **56.2.1** *P* **113** *L* **20** # **393**

Brown, Benjamin AMCC

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

bullet b) the frame should be parsed according to the DA as well as the length/type

SuggestedRemedy

Add DA into this description

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.2.2** *P* *L* # **938**

Jaeyeon Song Samsung

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

OMP_n function block communicates with the Multi point Gating Control using...

SuggestedRemedy

OMP_n function block communicates with the Multiplexing Control using...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.2.2** *P* **114** *L* **17** # **900**

Sio Peng GOI Institute for Communic

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

In Figure 56-6, the blocks are Instance n and Multiplexing Control. And they communicate with transmitEnable and transmitPending.

SuggestedRemedy

Change to :Multiplexing MAC Control instance n communicates with the Multiplexing Control using transmitEnable[j] and transmitPending[j] state variables...

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This is just one to one mapping between each instance and transmitEnable / transmitPending signals.

Cl **56** *SC* **56.2.2** *P* **114** *L* **17** # **734**

OGURA, Yasuo NTT

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

In the description,"transmitEnable[j] and transmission_in_progress[j]" should be a "transmitEnable[n] and transmission_in_progress[n]".Because they are used by OMP_n block.

SuggestedRemedy

How about change "transmitEnable[j] and transmission_in_progress[j]" into "transmitEnable[n] and transmission_in_progress[n]"?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Use of same index makes text clearer.

Cl **56** *SC* **56.2.2.1.2** *P* **115** *L* **1** # **394**

Brown, Benjamin AMCC

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

Using separate sections for Variables/Constants/Functions etc. can lean to redundancy.

SuggestedRemedy

Combine all the Variables/Constants/Functions etc. for each group of state machines.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Grops for joint definition: Control Parser + Control Multiplexer

Cl **56** *SC* **56.2.2.1.2** *P* **115** *L* **10** # **395**

Brown, Benjamin AMCC

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

Mixing ON/OFF and TRUE/FALSE

SuggestedRemedy

Pick the values for a variable and be consistent with them

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.2.3.1.6** *P* **95** *L* **13** # **99001**

Jonathan Thatcher World Wide Packets

Comment Type **TR** *Comment Status* **A** *D1.0*

Logic needs to be completely specified. For example, to the left of the "PARSE" block there must be Length_Type == MAC Control and !(subtype in (GATE,REPORT,...

Better to explicitly describe the logic than use "else."

SuggestedRemedy

Scrub and fix all state diagrams

Proposed Response *Response Status* **U**

ACCEPT. Same as #174
D1.0 #697

Cl **56** *SC* **56.2.4** *P* *L* # **939**

Jaeyeon Song Samsung

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

Figure 56-8 Control parser/multiplexer service interface
Figure 56-10 Control parser/multiplexer service interface
Control Parser and multiplexer is divided into 2 diagrams ; fig56-8, fig 56-10

SuggestedRemedy

-Figure 56-8 Control parser/multiplexer service interface
--> Figure 56-8 Control parser service interface
-Figure 56-10 Control parser/multiplexer service interface
--> Figure 56-10 Control multiplexer service interface

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See #894 #895

Cl **56** *SC* **56.2.4** *P* **118** *L* **33** # **903**

Sio Peng GOI Institute for Communic

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

Message from MAC Control client is MA_CONTROL.request.

SuggestedRemedy

Given multiple MA_DATA.request from MAC Client, and MA_CONTROL.request from the MAC Control Client,...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
MAC Control functions eventually perform TransmitFrame procedures, it is the intent to demonstrate that here.
Better wording is sought.

Cl **56** *SC* **56.2.4** *P* **119** *L* **10** # **893**

Sio Peng GOI Institute for Communic

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

The variable "register" in Figure 56-10 is not consistent with that defined in Clause 56.2.4.1.2

SuggestedRemedy

Rename the variable "register" in Figure 56-10 to "registered"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See #767

Cl **56** *SC* **56.2.4.1** *P* **119** *L* **24** # **741**

OGURA, Yasuo NTT

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

SuggestedRemedy

The title:"Control Parser/Multiplexer state diagram" of the section 56.3.3.1, it should be a "Control Multiplexer state diagram".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Should be 56.2.4.1

Cl **56** *SC* **56.2.4.1.6** *P* *L* # **940**

Jaeyeon Song Samsung

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

Figure 56-11, it seems to be a GATED state if TxAllowed signal would be true. In other words, TxAllowed signal can decide GATED or not-GATED. It will give a confusion of meaning.
In addition, the definition of GATE state is not clear.

SuggestedRemedy

Remove of the GATE state, TxAllowed signal.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Can not remove states as they are requied for ONU.
Will add clarifying text.
See #973

Cl **56** *SC* **56.2.4.1.6** *P* *L* # **941**
Jaeyeon Song Samsung

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

Figure 56-11, the location of 'transmitPending=false' is not correct.

SuggestedRemedy

it should be in CLEAN state. In other words, changing the value after transmission is better.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.2.4.1.6** *P* **121** *L* **Figure 56-** # **972**
Jin Kim Samsung Electronics

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

Since the laser is always on in OLT, OLT does not have to have a LaserControl.

SuggestedRemedy

Separate Figure 56-11 into OLT and ONU, and remove LaserControl from OLT state diagram.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.2.4.1.6** *P* **121** *L* **Figure 56-** # **973**
Jin Kim Samsung Electronics

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

It seems like TXAllowed and transmitEnable are duplicated signals.

SuggestedRemedy

Remove TXAllowed signal.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
TXAllowed is used in ONU
transmitEnable in OLT
signals derived from different locations and serve different purposes.
Work required to clarify.
See #940

Cl **56** *SC* **56.2.4.1.6** *P* **121** *L* **Figure 56-** # **974**
Jin Kim Samsung Electronics

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

The multipoint_transmission_in_progress should be determined by state of all transmission_in_progress[j] signals. Therefore, there is no necessary of checking both multipoint_transmission_in_progress and transmission_in_progress signals in CLEAN state.

SuggestedRemedy

Remove transmission_in_ progress signal in CLEAN state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove multipoint_transmision_in_progress in CLEAN state

Cl **56** *SC* **56.2.4.1.6** *P* **121, 119** *L* **Figure 56-** # **975**
Jin Kim Samsung Electronics

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

It is not clear how each instance know that there is transmit pending in the MAC Client.

SuggestedRemedy

Remove transmitPending signal and SIGNAL state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Each instance is aware by receiving MA_DATE.request primitives.
Text should be added to clarify

Cl **56** *SC* **56.2.6.1.6** *P* **113** *L* **11** # **99002**
Bharati, Barnali Wipro Technologies

Comment Type **TR** *Comment Status* **A** *D1.0*

In 'PERIODIC TRANSMISSION' state should there not be a check if variable 'register == true'? So that no report is sent untill registration is complete or if the ONU has been deregistered.

SuggestedRemedy

Proposed Response *Response Status* **U**

ACCEPT.
D1.0 #188 discovery

Cl **56** *SC* **56.3** *P* **122** *L* **3** # **396**

Brown, Benjamin AMCC

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

This section describes how the mechanism for coordinating the synchronization of multiple MACs using the OMP procedures is outside the scope of the document. Isn't this function integral to the success of P2MP?

SuggestedRemedy

Am I missing something here?

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Similar to the load balancer function for Link Aggregation that is an integral part of a functioning device, th efunciton itself is not defined in a standard.
Thus the bandwidth allocation function fo allocation of bandwidth between subscribers is not defined.

Cl **56** *SC* **56.3** *P* **122** *L* **3** # **776**

Dolors, Sala Broadcom

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

There is common control operation and state in MPCP. This was approved in the baseline and ratified with the refined layer model.

SuggestedRemedy

take out the sentence in line 3

replace the "may be" in line 2 for "is"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment is T and not TR

Cl **56** *SC* **56.3.1** *P* **122** *L* **10** # **601**

Bemmel, Vincent Alloptic

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

This section mixes OLT and ONU functions which makes it confusing. It is e.g., not clear whether 'MAC gating' is done within the OLT, or between ONUs (TDMA).
Different functions have different interpretations in the OLT vs. ONU.

SuggestedRemedy

Rewrite section to clearly identify what is at the ONU vs OLT.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.1** *P* **122** *L* **25** # **397**

Brown, Benjamin AMCC

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

What is a network feeder?

SuggestedRemedy

Add a description for "network feeder" or use a different term.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Will add a picture of a PON and show the components in Annex 64A. Term will be clarified.

Cl **56** *SC* **56.3.1** *P* **122** *L* **28** # **696**

Diab, Wael William Cisco Systems

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

The specification calls for a constant delay through the MAC and Phy to maintain the correctness of the timestamping mechanism.

This is a valid requirement, however, a more numeric treatment of the meaning of "constant" is needed.

SuggestedRemedy

Add a section that deals with the numerical accuracy of "constant delay". This would be helpful to the reader and would allow for compliance testing.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
A section describing the ranging process and the need of this constant delay will clarify the meaning.

Cl **56** *SC* **56.3.1** *P* **122** *L* **48** # **777**

Dolors, Sala Broadcom

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

the network is only maintain in one place. The global place is multiplexing control.

SuggestedRemedy

Eliminate sentence in line 48 and move it to section 2.2. Another comment already relates to this.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
When moving the timer to a global site, parsing of MPCP is still performed by OMP block thus description is correct and text should not be changed.

Cl **56** *SC* **56.3.3** *P* **124** *L* **1** # **778**

Dolors, Sala — Broadcom

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

The indications OMP.request and OMP.indication interact with a client. Therefore they have to follow exact definition of clause 2 service interface.

I am not sure why they are not exactly the clause 2 interface.

SuggestedRemedy

Please clarify.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See #151
OMP interfaces are not client interfaces rather an abstraction of an internal interface.
Comment is T and not TR

Cl **56** *SC* **56.3.3.1.3** *P* **124** *L* **30** # **398**

Brown, Benjamin — AMCC

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

These functions aren't required if the timer conventions of 14.2.3.2 are used, as stated in 56.1.4.

SuggestedRemedy

Remove these functions and use the conventions of 14.2.3.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.3.1.6** *P* *L* # **942**

Jaeyeon Song — Samsung

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

Figure 56-13, in PARSE INDICATION state, the order and fields assignment is not correct ; Timestamp is in front of opcode?

SuggestedRemedy

-subtype=m_sdu[0:1]
-timestamp=m_sdu[2:5]
-m_sdu=m_sdu[6:50]

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.3.1.6** *P* **126** *L* **9** # **951**

Chan Kim — ETRI

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

the case where the keep alive time out is not important is when it is for OLT or when the ONU is not registered yet. (here we assume that me == broadcast_ID means that the ONU is not yet registered)

SuggestedRemedy

how about changing it to
if not (Master or me == boardcast_ID). it should be 'or' not 'and'.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
For the OLT timeout is performed per port to discover ONUs that have disappeared.

Cl **56** *SC* **56.3.4** *P* **127** *L* **25** # **399**

Brown, Benjamin — AMCC

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

Discovery appears (based on the 3 pages of state diagrams) to be a fairly complicated process. It deserves significantly more text description than is currently available

SuggestedRemedy

Add text description for Discovery.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
New text and updated diagrams will be added.

Cl **56** *SC* **56.3.4.1** *P* **128** *L* **25** # **592**

Murakami, Ken — Mitsubishi Electric Cor

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

The definition of length parameter in MA_CONTROL.request from Discovery Process to Gate Process at the TX side is not clear.

SuggestedRemedy

On the OLT side, not only the length of allocated discovery window but also the length of discovery gate should be indicated by the client.
Two types of MA_CONTROL.request (create_discovery_window) should be specified. One is for OLT, another is for ONU.
MA_CONTROL.request (create_discovery_window) primitive for the OLT should have additional parameter grant_length which indicates the length of the discovery gate in time_quanta. This parameter is mapped into length parameter in A_CONTROL.request primitive in SEND REGISTER WINDOW state.
The client calculates the length of the discovery gate based on the length of allocated discovery window, the round trip propagation delay of the farthest ONU, and the length of REGISTER_REQ including IPG and preamble.
Besides MA_CONTROL.request (create_discovery_window), MA_CONTROL.request primitive in SEND REGISTER WINDOW state should be defined.
Please see the attatched file.
The file name is murakami_1_1102.pdf.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.4.1** *P* **133** *L* **33** # **593**

Murakami, Ken — Mitsubishi Electric Cor

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

The following processes are not clear in D1.1.
- RX of REGISTER indicating Nack
- TX of REGISTER_ACK indicating Failure
- RX of REGISTER_ACK indicating Failure

SuggestedRemedy

Add the flag check process in Figure 56-17.
Add the process to issue OMP.request of REGISTER_ACK indicating failure in NACK state in Figure 56-17.
Add the process to receive REGISTER_ACK indicating failure in COMPLETE DISCOVERY state in Figure 56-16.
Add the definition of MA_CONTROL.indication which indicates denied discovery process in section 56.3.4.1.5.
Please see the attatched file.
The file name is murakami_2_1102.pdf.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.4.1.1** *P* **128** *L* **42** # **952**

Chan Kim — ETRI

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

"register_msg timer" was mistakenly placed in the text.

SuggestedRemedy

remove "register_msg timer".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.4.1.2** *P* **129** *L* **51** # **953**

Chan Kim — ETRI

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

To use the term "sublayer" like in "Discovery Processing sublayer" might not be adequate. There are several instances in the document.

SuggestedRemedy

how about using "discovery processing block" ?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Editor will find better terminology and make appropriate changes.

Cl **56** *SC* **56.3.4.1.2** *P* **141** *L* **14** # **744**

OGURA, Yasuo — NTT

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

In the description of grant_list, although the statement of insertion is written, there is no statement of deletion.

SuggestedRemedy

How about add a following statement.
"Each time a grant window starts, the current grant element is removed from the list."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Deletion is performed by function remove_list

Cl **56** *SC* **56.3.4.1.3** *P* **129** *L* **51** # **954**

Chan Kim ETRI

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

exponent correct?

SuggestedRemedy

how about using exp(base,exponent)?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Although exponent is correct, exp is shorter and holds same degree of intelligibility

---

Cl **56** *SC* **56.3.4.1.3** *P* **130** *L* **28** # **701**

OGURA, Yasuo NTT

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

I heard of that there was an idea that ONU and OLT will auto-negociate a timing in ONU using a "CapabilityVector". It's value means the time between receiving Grant until being able and being send a Ethernet Packet in the ONU.There is no description of this "negociation mehcanism".

SuggestedRemedy

If this topic is out of scope of EFM, how about add some description to explain this mechanism in the tail of "56.3.4.1.3 FunctionsÅFSuported_Capabilities()".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Negoriation of these parameters is performed using Turn On Delay, Turn Off Delay, AGC Settling Time, and CDR Lock Time parameters.
Text will be added to describe interaction, volunteers are welcome.

Cl **56** *SC* **56.3.4.1.4** *P* **131** *L* **42** # **955**

Chan Kim ETRI

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

to arrival => since arrival
whom must => who must

SuggestedRemedy

as shown in comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.4.1.4** *P* **131** *L* **53** # **956**

Chan Kim ETRI

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

since the grant duration includes the idle period and laser turn on,off time, the maximum random delay should consider those values.

SuggestedRemedy

it should read,
discovery window size less the REGISTER_REQ MPCPDU frame size less the idle period and laser turn on and off time.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.4.1.5** *P* **132** *L* **34** # **957**

Chan Kim ETRI

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

what if we don't know the MAC address of the ONU before registration?
so the DA parameter should be removed. and it can be extracted later from the register_req message.

SuggestedRemedy

remove the DA argument from the MA_CONTROL.request(create_discovery_window,..).

Proposed Response *Response Status* **W**

PROPOSED REJECT.
ONU MAC address is NEVER known prior to registration.
DA is multicast address used for MAC Control.
Further all Ethernet frames contain a Destination Address (DA).

Cl **56** *SC* **56.3.4.1.5** *P* **133** *L* **13** # **958**

Chan Kim ETRI

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

used only in ONU. the service interface diagram of Fig.56-15 might better be divided for OLT and ONU.

SuggestedRemedy

divide the service interface for OLT and ONU.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Diagrams will be split.

Cl **56** *SC* **56.3.4.1.6** *P* **134** *L* **13** # **959**

Chan Kim ETRI

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

do we really need to specify this 'and me = broadcast ID'?
It's either that the master has always the broadcast ID or it has any value(less probable)

SuggestedRemedy

specify that OLT have 'FFFF' as LLID or OLT has no LLID.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Me variable holds context of MAC in Multipoint MAC Control, it can hold any LLID when associated with a P2PE port.

Cl **56** *SC* **56.3.4.1.6** *P* **134** *L* **16** # **960**

Chan Kim ETRI

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

In SEND_REGISTER WINDOW state, own_id should be replaced with broadcast LLID and the DA should contain later-specified special multicast ID.(link constrained)

SuggestedRemedy

change own_id to broadcast_ID. and add a DA which value will be fixed later.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Text needs to clarify OLT-ID and Broadcast-ID.

Cl **56** *SC* **56.3.4.1.6** *P* **134** *L* **34** # **961**

Chan Kim ETRI

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

In the CHECK DESTRUCT ID state, it reads "if me != broadcast_ID". why do we check my ID when register_req with destruct flag?

SuggestedRemedy

change 'me' to 'received LLID'
and regardless of the result of this check, the state should go to the idle state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Transition to END would be changed to transition to state where LLID is freed.
Updated diagrams will clarify.

Cl **56** *SC* **56.3.4.1.6** *P* **134** *L* **40** # **962**

Chan Kim ETRI

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

In REGISTER state, the list of items temporally latched from the received REGISTER_REQ doesn't go with the message definition. There is not number of requested ports now.

SuggestedRemedy

fix it for the changed format.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.4.1.6** *P* **134** *L* **48** # **963**

Chan Kim ETRI

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

the first flag means that the ONU is requesting registratoin In FIRST OR ADDITIONAL state, the current diagram shows that the state transition is different accorindg to the first_flag checking. But the first_flag shows the the registration is the first one of an ONU.
So, it has nothing to do with whether we'll have another REGISTER_REQ messages coming from others ONUs or not.

SuggestedRemedy

change the diagram so that it jumps to INSIDE REGISTER WINDOW' state in either case.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
First_flag is to be removed due to support of single registration per ONU.

Cl **56** *SC* **56.3.4.1.6** *P* **136** *L* **47** # **964**

Chan Kim ETRI

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

The 'DEREGISTER' state is entered from two states. But when it is entered after receiving the REGISTER message with fail indication, the ONU doesn't have to send the REGISTER_REQ with deregister flag.

SuggestedRemedy

make the arrow for choise 2 of the switch statement of ARRIVING REGISTER 2 state go to the initial WAIT state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.5** *P* **137** *L* **1** # **400**

Brown, Benjamin AMCC

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

While not as complicated as Discovery, this section also deserves more text description than is currently available.

SuggestedRemedy

Add text description for Report Processing.

The same thing applies to Gate Processing

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
more description will help, input required

Cl **56** *SC* **56.3.5** *P* **137** *L* **6** # **702**

OGURA, Yasuo NTT

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

When OLT receive a REPORT MPCPDU, in the higher layer, it should re-calculate a RTT with the timestamp of the REPORT MPCPDU.

SuggestedRemedy

As a statement of "Report processing", there should be a description the need of RTT recalculation with REPORT MPCPDU.
For example, how about add a following description?
"In the higher layer, OLT should calculate a RTT with the timestamp of the REPORT MPCPDU and update it automatically."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
RTT vigilance monitoring should be performed in OMP block modifying Figure 56-13 and accompanying text in state UPDATE TIMER for the OLT case, as this is symmetrical to the local time setting performed by the ONU

Cl **56** *SC* **56.3.6** *P* *L* # **637**

Miyoshi, Hidekazu Sumitomo Electric Indu

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

Associated modifications for the extension of the gate message to set thresholds. A presentation, miyoshi_p2mp_exGate.pdf, will be submitted.

SuggestedRemedy

Add the arrow of MA_CONTROL.indication(thresholds) from the Gate processing block in figure56-21 on page 140.

Add the following description in 56.3.6.1.5 Messages.
MA_CONTROL.indication(thresholds)
The service indication issued by the Gate Process to notify the MAC Control client and higher layers that the OLT has requested to set or reset thresholds.

Change "MA_CONTROL.request(grant,local,n,start[4],length[4],discovery,force_report)" to "MA_CONTROL.request(grant,local,n,start[4],length[4],discovery,force_report,thresholds)" in 56.3.6.1.5 Messages.

Add the following statement in the PROGRAM state in figure 56-22 on page 144.
If thresholds <> NULL
MA_CONTROL.indication(thresholds)

Change
"OMP.indicate(n*(start,length),discovery,force_report)" to
"OMP.indicate(n*(start,length),discovery,force_report,thresholds)" in figure 56-22 on page 144.

Proposed Response *Response Status* **W**

Pending presentation

Cl **56** *SC* **56.3.6** *P* **139** *L* **38** # **965**

Chan Kim ETRI

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

rather than directly describing state diagram, explaining the essential ideas in words might be helpful.
for example, whether the gate convers the idle period and laser on/off time or not is not indicated. (it is assumed that the gate covers all transmission of an ONU including idle period and laser on/off time. but parts of the state diagram seems to be confused in this.)

SuggestedRemedy

clearly indicate whehter the gate covers idle pattern transmission time and laser turn-on and off time for ONU or not.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.6.1** *P* **126** *L* **13** # **99003**

Jonathan Thatcher World Wide Packets

Comment Type **TR** *Comment Status* **A** *D1.0*

There are a number of references to a phantom "higher-layer-entity" within the clause.

SuggestedRemedy

Unmask the phantom. Describe, reference, or otherwise expose this "entity."

Proposed Response *Response Status* **U**

ACCEPT.
Naming convention would be made consistent using "MAC Client" or "MAC Control Client"
D1.0 #689

Cl **56** *SC* **56.3.6.1.2** *P* **141** *L* **6** # **949**

Tae-Whan Yoo ETRI

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

There are various ways to realize multiple MAC and MAC Control layers. Specifyng the recipient of the grant with the destination MAC address DA, which is ONU's MAC address, could restrict the implemenation freedom.

SuggestedRemedy

We suggest that the 48-bit subfield "DA" in the structure of current_grant be replaced with the 16-bit "LLID".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This mechanism is not used to realize multiple MACs.
It holds the DA that was received in the GATE that arrived, as it is derived information it is not restrictive in any way.
The DA is then used to distinguish between a unicast grant, and a multicast grant.
Further the state is held inside a context of a single LLID.

Cl **56** *SC* **56.3.6.1.2** *P* **142** *L* **12** # **708**

OGURA, Yasuo NTT

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

Until "IDLE_timer" has been expired, there is a description that ONU should transmit an IDLE pattern only.But there is no description in the "56.3.6.1.2 Variables:laser_off_time".

SuggestedRemedy

How about add the following description after the end of the description of "laser_off_time".
"During the laser_off_time, any data patterns can be transmitted."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
During the laser_off_time the MAC is inactive, therefore the PCS transmits IDLE sequences.
It is not permited to the MAC to transmit arbitrary data patterns.

Cl **56** *SC* **56.3.6.1.2** *P* **142** *L* **4** # **707**

OGURA, Yasuo NTT

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

In the "56.3.6.1.4 Timers:IDLE_timer", there is description that:"when oly IDLE symbol-pairs are transmitted".But there is no description in the "56.3.6.1.2 Variables:IDLE_time".

SuggestedRemedy

How about add the following description after the end of the description of "IDLE_time".
"During the IDLE_time, only IDLE patterns can be transmitted."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.6.1.6** *P* **144** *L* **1** # **602**

Bemmel, Vincent Alloptic

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

use seperate OLT vs. ONU diagrams

SuggestedRemedy

use seperate OLT vs. ONU diagrams

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.6.1.6** *P* **144** *L* **37** # **967**

Chan Kim ETRI

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

In the state 'SORT'. it checks if the time left until the start time can conver the required idle time and turn-on/off time. But,
why do we need to check this? haven't we decided that the grant duration includes the idle period and turn-on.off delay?

SuggestedRemedy

remove the line for checking the time left.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The check is performed to ensure that there is enough time to turn on and off the laser

Cl **56** *SC* **56.3.6.1.6** *P* **144** *L* **5** # **966**

Chan Kim ETRI

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

The statemachines of OMP are generally unnecessarily not-easy-to-understand. rather than having one state, expressing in several sequention states would be better. The gate processing should be divided for receiving and consuming. Because receiving a gate from the OLT, and using the received gate can occur at the same time. The two processes should have separate state space.

SuggestedRemedy

separate the state diagram of Gate Processing to ones for OLT and ONU. Also, receiving the gate and consuming the gate can be separated for ONU.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.3.6.1.f++** *P* **126** *L* **25** # **99004**

Jonathan Thatcher World Wide Packets

Comment Type **TR** *Comment Status* **A** *D1.0*

Description of "Assigned Ports List" (per Figure 56-22) is missing.
Also, suggest dropping the "s" off of "Ports" everywhere.

SuggestedRemedy

Add description

Proposed Response *Response Status* **U**

ACCEPT.
D1.0 #690

Cl **56** *SC* **56.3.7.1** *P* **128** *L* **33** # **99005**

Jonathan Thatcher World Wide Packets

Comment Type **TR** *Comment Status* **A** *D1.0*

Validation of correct registration is an appropriate goal of the registration process. Registration data sent in the "Registration PDU" should be returned in the "Registration Ack" PDU.

Note, the frequency of registration should not be sufficient to impact overall performance. Saving a few bytes is not worth not being able to validate correct reception.

SuggestedRemedy

Add Capability vector, Assigned port list, etc.

Proposed Response *Response Status* **U**

ACCEPT.
D1.0 #688

Cl **56** *SC* **56.4** *P* **144** *L* # **635**

Miyoshi, Hidekazu Sumitomo Electric Indu

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

Since the size of MPCP messages is fixed to 64 Byte, information which can be conveyed through MPCP messages is limited. However various types of data may need to be exchanged via MPCP messages for higher efficiency, QoS policy and/or other reasons. In this sense, it would be significant benefits for us to allow MPCP messages to exchange diverse data as additional information.

A file, miyoshi_p2mp_addInfo.pdf, is attached for discussion.

SuggestedRemedy

Define the additional information fields in MPCP messages as optional.

Following is one possible definition of the field.
1: The Number of additional field (8 bits) indicates the number of sets of the code_length field and the add_data field.
2: Bit 0-3 of the code_length field (8 bits) identifies the specific data type embedded in the add_data field. Bit 4-7 of the code_length field specifies the size of the add_data field in byte.
3: The add_data field conveys various types of data identified by the code field.

All MPCP messages may hold multiple sets of the code_length and add_data fields as indicated by the number of additional field. This is an optional field, and a peer may ignore this field.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #154
In order to allow custom fields to be exchanged in a standadized fashion, a TLV mechanism is to be defined.
Mechanism requires:
1) Vendor identification during discovery sequence (TBD)
2) 1 byte type/length field to be interpreted as:
4 most significant bits - type
4 least significant bits - length
type value definitions:
0 - no field present, always paired with 0 length
0-7 reserved
63 extend, first byte of payload is extension of type (to values 16 - 271)
8 - 14 to be interpreted according to vendor
15 extend, first byte of payload is extension of type (to values 272 - 527) to be interpreted according to vendor

Cl **56** *SC* **56.4.2** *P* **146** *L* # **636**

Miyoshi, Hidekazu — Sumitomo Electric Indu

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

Threshold values set in queues in ONU affect upstream bandwidth efficiency. There is, however, no standard mechanism to convey thresholds from OLT to ONU, which can lead to an interoperability issue. I propose a mechanism by extending the gate message.

A presentation, miyoshi_p2mp_exGate.pdf, will be submitted.

SuggestedRemedy

Add the following statements.

Number of thresholds. This field specifies the number of sets of threshold_flag and threshold_value fields in the Gate message.
x) Threshold_flag. The threshold_flag field is an optional 8 bit field that contains information for the threshold as shown below.
Bit 0: action. The action flag field indicates the action, set or reset, for the threshold specified by the queue number and threshold id fields.
Bit 1-3: queue number. The queue number field specifies the queue to which the threshold is set or reset.
Bit 4-7: threshold id. The threshold id field identifies the threshold.
x) Threshold_value. The threshold_value field is an optional 16 bit field that conveys the value of threshold. The granularity of threshold is 2 octets.

Proposed Response *Response Status* **W**

Pending presentation

Cl **56** *SC* **56.4.2** *P* **146** *L* # **634**

Miyoshi, Hidekazu — Sumitomo Electric Indu

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

When ONU reports multiple boundaries for each queue, and OLT and ONU use different scheduling algorithms for selecting transmission packets, ONU may not decide the bandwidth allocation properly as expected by OLT, which can cause policy violation and/or slot assignment loss.

For example, if we assume that (1) ONU sends a report of QH={300,100} and QL={350,150}, (2) OLT chooses 300 for QH and 150 for QL, and (3) OLT grants 450 (300+150=450) to ONU, there would be no way for the ONU to send packets properly: ONU may interpret 450 as 100 from QH and 350 from QL. In addition, OLT never knows its policy was violated: OLT doesn't know the ONU's decision for selecting transmission packets.

A file, miyoshi_p2mp_qgrant.pdf, is attached for discussion.

SuggestedRemedy

Add an optional field indicating grant length per queue as shown below.

Grant bitmap. This is an 8 bit flag register that indicates which queues are represented in this REPORT MPCPDU.
Queue_grant[i]. Length of the signaled grant for priority queue #i, this is an 16 bit unsigned field. The length is counted in 16 bit time increment.

This mechanism works as follows.
1. Scheduler (MAC Control Client) in OLT creates a GATE message with 8 slot lengths, QUEUE_GRANT[0..7], each indicates grant length for a priority queue, and total grant length.
2. ONU receives the GATE. MPCP will read the TOTAL_GRANT and program aggregated slot. MPCP indicates GATE message to MAC Control Client.
3. MAC Control Client makes sure (optionally) that each queue transmits what is specified by QUEUE_GRANT[i].

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See #153

Cl **56** *SC* **56.4.2** *P* **146** *L* **36** # **746**

OGURA, Yasuo — NTT

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

SuggestedRemedy

In the item "a)", "GRANT MPCPDU" should be a "GATE MPCPDU".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.4.2** *P* **146** *L* **37** # **603**

Bemmel, Vincent — Alloptic

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

'GRANT MPSPDU' should be 'GATE MPCPDU'

SuggestedRemedy

Replace 'GRANT MPSPDU' with 'GATE MPCPDU'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.4.2** *P* **147** *L* **24** # **968**

Chan Kim — ETRI

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

The force_report flag is to ask the ONU to issue a REPORT message at the corresponding grant period

SuggestedRemedy

is it after the grant period or at the begining of the grant period? We have to decided. It is not clearly expressed.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Text better describing force_report behaviour would be added.
In general, it is the Client's responsibility to generate REPORTs, as such their behavior may or may not be synchronized with the Gating process.

Cl **56** *SC* **56.4.2** *P* **147** *L* **25** # **729**

OGURA, Yasuo — NTT

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

There is no description in the case of "Force Report flag = 0". I think of that ONU can decide it send a REPORT MPCPDU or not.

SuggestedRemedy

For example,how about add the following description the end of the description:"the Force report flag fields".
"When 'Force Report flag = 0' is set, ONU may send a REPORT MPCPDU or not."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Please not that the Client may send REPORT arbitrarily, as REOPRTs are neither generated nor blocked by the MAC Control

Cl **56** *SC* **56.4.2** *P* **147** *L* **25** # **718**

OGURA, Yasuo — NTT

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

There is no description when ONU will not send a REPORT MPCPDU in the "GATE description".

SuggestedRemedy

How about add the following description.
"If ONU has no traffic in the buffer and force_report_flag == 1, it will send a REPORT MPCPDU with empty content. If force_report_flag == 0, ONU may send a REPORT MPCPDU, but it should send IDLE symbol pairs when not sending a REPORT MPCPDU."

There is some detail proposals in the attached file:"ogura-51e.ppt".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
REPORT generation is the responsibility of the higher layers, even when force_report == 1.
It is not possible for MPCP to know how to generate a valid report.
Further queue population is not known to MPCP and thus it can not make decisions based on queue population.
Further proposal to transmit IDLEs whenever not sending a REPORT, in effect reserving the location of a REPORT inside the grant, wastes bandwidth.

Cl **56** *SC* **56.4.2** *P* **147** *L* **26** # **970**

Chan Kim — ETRI

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

how about putting a reserved byte after number of grants/flags?
This will make the boundaries of the fields 16 bit aligned.

SuggestedRemedy

put a reserved byte after the "number of grants/flags" field of GATE message.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Ethernet protocols do not require alignment for mandatory fields, reserved fields waste limited frame size.

Cl **56** *SC* **56.4.2** *P* **147** *L* **26** # **969**

Chan Kim ETRI

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

how about explicitly specifying that the grant length includes the idle period and turn-on/off time? Because it's so simple and clear.

SuggestedRemedy

specify if the grant time contains the idle period and laser turn-off/on time.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Additional text would explicitly state the composition of the grant includes the laser on/off delay and required idle period in addition to the period allocated for PDU transmission.

Cl **56** *SC* **56.4.2** *P* **147** *L* **26** # **745**

OGURA, Yasuo NTT

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

When OLT will pack multiple grants int a GATE MPCPDU, it will set them with time-sequencial order. I feel the behavier simple.

SuggestedRemedy

In the description "d) Grant#n Start Time", how about add the following statement.
"According to the value of the Start Time, OLT should set Grant#1...4 with time-sequencial order."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
GATEs are generated outside of MPCP, and arenot controlled by it. It might be beneficial to the GATE generation algorithm not to work sequentially.

Cl **56** *SC* **56.4.2** *P* **147** *L* **40** # **897**

Sio Peng GOI Institute for Communic

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

The Pad/Reserved field length differs from that in Figure 56-24

SuggestedRemedy

Change the length of the Pad/Reserved field to varies in length from 11 to 33 accordingly

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Comment is T not E

Cl **56** *SC* **56.4.3** *P* **149** *L* **30** # **604**

Bemmel, Vincent Alloptic

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

The term "Number of Requests" is confusing. This is still ONE request, containing multiple reported queue sets. We could use a better name.

SuggestedRemedy

"Number of Queue Sets"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change Fig. 56-25, as well.

Cl **56** *SC* **56.4.3** *P* **149** *L* **31** # **719**

OGURA, Yasuo NTT

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

d) "This field specifies the the number of requests" :The first "the" should be deleted.

SuggestedRemedy

After being modified, "d) Number of requests. This field specifies the number of ....."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.4.3** *P* **149** *L* **34** # **721**

OGURA, Yasuo NTT

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

P.149 L.34 f)"Pad/Reserved2" : "2" should be deleted.

SuggestedRemedy

After being modified, "f) Pad/Reserved. This is an empty field .....".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.4.3** *P* **149** *L* **36** # **722**

OGURA, Yasuo NTT

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

"Length from 7 0 to 39": The number should be a "0 -39" so that "7" should be deleted.

SuggestedRemedy

After being modified, "and accordingly varies in length 0 to 39."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
The value of padding length in Table 56-25 should correspond to the value given in p. 149 line 36.

Cl **56** *SC* **56.4.4** *P* **152** *L* **14** # **971**

Chan Kim ETRI

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

how about putting a reserved byte after the flags in register_req message to make them 16 bit aligned?

SuggestedRemedy

put a reserved byte after the Flags field of REGISTER_ACK message.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Ethernet protocols do not require alignment, reserved fields waste limited frame size.

Cl **56** *SC* **56.4.5** *P* **153** *L* **30** # **724**

OGURA, Yasuo NTT

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

In the item "l)", "Echoed urn off delay" should be a "Echoed turn off delay".

SuggestedRemedy

After being modified, "l) Echoed turn off delay.".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.4.5** *P* **153** *L* **6** # **605**

Bemmel, Vincent Alloptic

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

Table 56-5 has the following definition: "'Destruct' is a request to destroy the port and free the LLID. Subsequently, the MAC is destroyed"

Notice that the REGISTER is sent from the OLT to the ONU upon receiving a REGISTER_REQUEST. At this point the ONU is not registered yet, and hence this definition is not correct.

SuggestedRemedy

Remove "Destruct" from table 56-5

Proposed Response *Response Status* **W**

PROPOSED REJECT.
REGISTER message with destruct flag is sent when ONU is registered.

Cl **56** *SC* **56.4.6** *P* **154** *L* **52** # **725**

OGURA, Yasuo NTT

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

In the item "a)", "REGISTER MPCPDU" should be a "REGISTER_ACK MPCPDU".

SuggestedRemedy

After being modified, "a) Opcode. The opcode for the REGISTER_ACK MPCPDU is 00-06".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56-16** *P* **134** *L* # **905**

Sio Peng GOI Institute for Communic

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

timer ONU_timer is set in REGISTER state but not cleared anywhere.

SuggestedRemedy

in COMPLETE DISCOVERY state, add:remove(ONU_timer[MAC])

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure 56-1** *P* **109** *L* # **899**

Sio Peng GOI Institute for Communic

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

GMII not shown in Figure 56-1. P2MP not mentioned.

SuggestedRemedy

Remove GMII=.... Add P2MP=Point-to-Multipoint.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add a GMII pointer in the figure the same as MDI
P2MP is not mentioned in the figure. So I do not see the need of adding it.

Cl **56** *SC* **Figure 56-10** *P* **119** *L* **12** # **894**

Sio Peng GOI Institute for Communic

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

Figure 56-10 should be Control Multiplexer

SuggestedRemedy

Change all Control Parser/Multiplexer to Control Multiplexer

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure 56-11** *P* **108** *L* # **99007**

Bharati, Barnali — Wipro Technologies

Comment Type **TR** *Comment Status* **A** *D1.0*

State 'CHECK DESTRUCT ID' can appear before 'INDICATE DEREGISTER', otherwise it might lead to unnecessary indication.

SuggestedRemedy

Proposed Response *Response Status* **U**

ACCEPT.
D1.0 #185

Cl **56** *SC* **Figure 56-11** *P* **108** *L* # **99006**

Bharati, Barnali — Wipro Technologies

Comment Type **TR** *Comment Status* **A** *D1.0*

OMP indication REGISTER_ACK can arrive in the 'INSIDE REGISTER WINDOW' state before timeout of 'register_window_size'. This is missing.

SuggestedRemedy

Arrival of REGISTER_ACK in the 'INSIDE REGISTER WINDOW' state, should trigger a state change to 'COMPLETE DISCOVERY'

Proposed Response *Response Status* **U**

ACCEPT.
See #181
D1.0 #182 discovery

Cl **56** *SC* **Figure 56-11** *P* **108** *L* **25** # **99008**

Bharati, Barnali — Wipro Technologies

Comment Type **TR** *Comment Status* **A** *D1.0*

ONU_timer[SA] can expire in the 'INSIDE REGISTER WINDOW' state.

SuggestedRemedy

On expiry of 'ONU_timer' in state 'INSIDE REGISTER WINDOW', state can change to IDLE state.

Proposed Response *Response Status* **U**

ACCEPT.
Comment is valid.
Solution confuses IDLE state which is an OLT state (performing discovery or not) with the ONU state goverened by the timer.
Should consider adding additional state-machine with ONU perspective
D1.0 #181 discovery

Cl **56** *SC* **Figure 56-11** *P* **108** *L* **35** # **99009**

Bharati, Barnali — Wipro Technologies

Comment Type **TR** *Comment Status* **A** *D1.0*

If OLT ever receives an OMP.indication (subtype=REGISTER_REQ, destruct_flag=true, SA=broadcast_ID), OLT need not call END function. As this would require a reset of the state machine.

SuggestedRemedy

OLT can just ignore the indication and transit to 'IDLE' state.

Proposed Response *Response Status* **U**

REJECT.
This is exactly what happens in state CHECK DESTRUCT ID in figure 56-11
D1.0 #184

Cl **56** *SC* **Figure 56-11** *P* **121** *L* # **317**

Khansari, Masoud — Centillium Communicat

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

Variable "transmitEnable" is never reset to FALSE.

SuggestedRemedy

Clearly identify this in the state diagram and definition of "transmitEnable" in Page 120. One solution is to set this variable FALSE in the "CLEAN" state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See #172

Cl **56** *SC* **Figure 56-11** *P* **121** *L* # **321**

Khansari, Masoud — Centillium Communicat

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

requst should read "request" in GATED--> SIGNAL and TRANSMIT READY-->SEND DATA FRAME state transitions

SuggestedRemedy

Make the appropriate changes

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure 56-11** *P* **121** *L* # **318**
Khansari, Masoud Centillium Communicat

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

Variable TXAllowed is not defined in the list of variables for this state diagram

SuggestedRemedy

Clearly define TXAllowed in 56.2.4.1.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
see #173

Cl **56** *SC* **Figure 56-11** *P* **121** *L* **16** # **173**
Bharati, Barnali Wipro Technologies

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

TXAllowed is missing from the variable list.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See #318

Cl **56** *SC* **Figure 56-11** *P* **121** *L* **25** # **172**
Bharati, Barnali Wipro Technologies

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

Once transmitEnable[j] is set to 'On' in multiplexing control state diagram so that only one MAC controller instance may be able to transmit, it needs to be reset to flase (or off) in fig 56-11.

SuggestedRemedy

transmitEnable needs to be set to flase (or off) in 'CLEAN' state in Fig 56-11

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure 56-12** *P* **123** *L* # **906**
Sio Peng GOI Institute for Communic

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

In Figure 56-3, OMP Parser and Multiplexer are 2 separate blocks while here it is still in 1 block.

SuggestedRemedy

Split into a OMP Parser and a OMP Multiplexer, just like Control Parser and Control Multiplexer.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure 56-13** *P* **126** *L* # **904**
Sio Peng GOI Institute for Communic

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

State WAIT FOR RECEIVE exit trigger:timeout() should have a timer as input, not a constant

SuggestedRemedy

Change timeout(max_time_between_omp) to timeout(omp_timer)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure 56-13** *P* **126** *L* # **322**
Khansari, Masoud Centillium Communicat

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

Transition OMP TIMEOUT -> ERROR STATE should read "true" instead of "UCT"
Transition OMP TIMEOUT -> WAIT FOR RECEIVE should read "flase" instead of "else"

SuggestedRemedy

Make the appropriate changes.

There are many instances within state diagrams that "else" is used instead of "false", etc. e.g. in Figure 56-16 transition from CHECK DESTRUCT ID to IDLE should read "false" and not "else". Please clean up the state diagrams.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure 56-13** *P* **126** *L* **20** # **174**

Bharati, Barnali — Wipro Technologies

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

Rather than set_timer, it would be more appropriate to call this function reset_timer. So that old timer made to reset rather than creating a fresh timer all the time.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Timer functions to be rewritten using conventions of 14.2.3.2

Cl **56** *SC* **Figure 56-17** *P* **135** *L* # **155**

Kramer, Glen — Teknovus

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

Transition from state REGISTERING to state CHECK UNICAST should be marjed as MA_CONTROL.indication, rather than MA_CONTROL.request

SuggestedRemedy

Change "indication" to "request"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure 56-18** *P* **136** *L* **12** # **175**

Bharati, Barnali — Wipro Technologies

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

Upon reception of OMP.indication (subtype=REGISTER, destruct_flag=true), transition from 'ARRIVING REGISTER 2' to 'DEREGISTER' state is triggered (see 2 true). This will send another REGISTER_REQ with destruct_flag set to true, instead of an REGISTER_ACK

SuggestedRemedy

May create a new state 'DEREGISTER_ACK' and actions in this new states are:
1) OMP.request (SA, DA, subtype=REGISTER_ACK, destruct_flag = true)
2) Registered = flase

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Will fix in updated diagrams as state ARRIVING REGISTER 2 is to be removed due to support of single registration per ONU.

Cl **56** *SC* **Figure 56-18** *P* **136** *L* **30** # **176**

Bharati, Barnali — Wipro Technologies

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

Actions in both 'ACK' and 'SUBSEQUENT ACK' states are same.

SuggestedRemedy

There is not need of two different states. State 'SUBSEQUENT ACK' can be removed

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Will fix in updated diagrams, state SUBSEQUENT ACK is to be removed due to support of single registration per ONU.

Cl **56** *SC* **Figure 56-18** *P* **136** *L* **47** # **177**

Bharati, Barnali — Wipro Technologies

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

Currently if additional registration is deregistered, states moves from 'REGISTERED WAIT' to 'DEREGISTER' to 'ZERO STATE 2', and variable 'registered' is set to flase. This should not be done unless all registration (first and the additional) has been deregistered.

SuggestedRemedy

There should be a mechanism of knowing if all registrations has been deregistered

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Mechanism is to support only a single registration per ONU.

Cl **56** *SC* **Figure 56-2** *P* **110** *L* **3** # **386**

Brown, Benjamin — AMCC

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

Where is the reference to Figure 56-2?

SuggestedRemedy

Add a reference to this figure and some descriptive text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 751 for suggested text

Cl **56** *SC* **Figure 56-20** *P* **139** *L* # **323**

Khansari, Masoud Centillium Communicat

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

There is no need for "Master == flase" condition checking in PERIODIC TRANSMISSION state.

SuggestedRemedy

periodic_timer is only set when transmitting a REPORT, which happens when Master == flase.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Addition of check for Master == True required in Report processing to make sure OLT does not send REPORT

Cl **56** *SC* **figure 56-22** *P* **64** *L* **34** # **818**

Maislos, Ariel Passave

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

SORT block does not calculate correctly the required offset until the start of grant, and condition check does not correctly compensate for elapsed time and overheads.

SuggestedRemedy

Change text of SORT block to:
current_grant = min_extract(start, grant_list)
time = min(current_grant.length, max(current_grant.start - local_time+current_grant.length), 0))
if time > laser_on_time + IDLE_time + laser_off_time
  set_timer(grant_start, max(current_grant.start - local_time, 0))
else repeat block while !empty(grant_list)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure 56-3** *P* **111** *L* # **898**

Sio Peng GOI Institute for Communic

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

Messages are sent from the OMP Multiplexer to clients

SuggestedRemedy

There should be a link from OMP Multiplexer to the MAC Control Clients to reflect this.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
All function blocks issue MA_CONTROL primitives as shown by arrows in upper left corner of Figure 56-3
The interface should be clarified.

Cl **56** *SC* **Figure 56-3** *P* **111** *L* **4** # **387**

Brown, Benjamin AMCC

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

The arrow from the Control Parser to the MAC should point towards the MAC - see Figure 2-1b.

SuggestedRemedy

Change direction of arrow from Control Parser to MAC.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure 56-5** *P* **114** *L* # **901**

Sio Peng GOI Institute for Communic

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

transmission_in_progress is not output of Multiplexing Control block, instead it determines Multiplexing Control input multipoint_transmission_in_progress.

SuggestedRemedy

Remove transmission_in_progress[1..n].

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See #768
The transmission_in_progress is the input of multiplexing control block and is required to determine the multipoint_transmission_in_progress signal.

Cl **56** *SC* **Figure 56-8** *P* **100** *L* **11** # **99010**

Bharati, Barnali Wipro Technologies

Comment Type **TR** *Comment Status* **A** *D1.0*

In state 'OMP TIMEOUT', the condition 'if not (Master and me == broadcast_ID)' would force OLT to go to ERROR state in case only one ONU was present and this ONU has sent a REGISTER_ACK with destroy flag set. So no more messages would come from the ONU. This would result in timeout of omp_timer and OLT would transit to ERROR STATE. Not desirable (I presume, variable 'me' would have proper MAC address)

SuggestedRemedy

Could 'me == broadcast_ID' be removed from the condition?

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
Change UCT transition to True, change else transition to False
Condition is required as OLT would not terminate it's broadcast-llid where is performs discovery. All other LLIDs are currently terminated.
Under proposed layering models, END state would be replaced with 'return to available LLID pool' state
D1.0 #177 discovery

Cl **56** *SC* **Figure 56-8** *P* **117** *L* # **151**
Kramer, Glen Teknovus

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

Control Parser belongs to an opcode-independent part of Multi-Point MAC Control (see analogy with clause 31.5). As such, it should only generate MA_DATA and MA_CONTROL indications, but not OMP.indication.

SuggestedRemedy

Remove OMP.indication from the Fig. 56-8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
OMP.indication is a place-holder for internal communication with the MPCP block.
Change the name and description of OPM.indication to something that resembles a function or signal name. The OPM.indication is not a service primitive.

Cl **56** *SC* **Figure 56-8** *P* **117** *L* # **902**
Sio Peng GOI Institute for Communic

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

Control Parser's output to OMP Parser/Multiplexer should be MA_CONTROL.indication rather than OMP.indication

SuggestedRemedy

Remove OMP.indication

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See #151
The MA_CONTROL.indication should be the interface to the MAC Control Client.

Cl **56** *SC* **Figure 56-8** *P* **117** *L* # **895**
Sio Peng GOI Institute for Communic

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

Figure 56-8 should be Control Parser

SuggestedRemedy

Change Control Parser/Multiplexer to Control Multiplexer in caption

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure 5-9** *P* **118** *L* # **319**
Khansari, Masoud Centillium Communicat

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

Transition from "WAIT FOR RECEIVE" to "PARSE" states should be clarified

SuggestedRemedy

Transition occurs when "ReceiveFrame" signal of MAC service interface is set.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Add "ReceiveFrame" signal of MAC service interface.

Cl **56** *SC* **Figure56-10** *P* **119** *L* **12** # **740**
OGURA, Yasuo NTT

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

SuggestedRemedy

The center of the block:"Control Parser/Multiplexer" of the Figure56-10, it should be a "Control Multiplexer".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure56-10** *P* **119** *L* **22** # **739**
OGURA, Yasuo NTT

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

SuggestedRemedy

The title:"Control Parser/Multiplexer Service Interface" of the Figure56-10, it should be a "Control Multiplexer Service Interface".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure56-11** *P* **121** *L* **24** # **735**
OGURA, Yasuo NTT

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

There is a description it turn "transmitEnable" ON, but no description it turn "transmitEnable" OFF.

SuggestedRemedy

In the top of the block:"CLEAN", how about add "transmitEnable = OFF".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See #172

Cl **56** *SC* **Figure56-13** *P* **126** *L* **28** # **713**

OGURA, Yasuo NTT

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

In the D1.1, ONU will turn the Laser ON everytime when the "start_time" has come.Even if it would not send a "REGISTER_REQ" because of it's "Backoff_wait".It is very bad specification when multiple ONUs are going to do AutoDiscovery at the same time.All ONUs will turn it's Laser ON at the same time, OLT may not be able to process Discovery successly so that it will detect collisions everytime.

SuggestedRemedy

OLT can trun Laser ON/OFF Only in the "GateProcess state Diagram", so that OLT can not tunr Laser OFF when it deside not sending a REGISTER_REQ in the "DiscoveryProcess state Diagram".
I think of that it is good way to solve this problem that:

@Discovery GATE:
How about treat it in the only "DiscoveryProcessing state diagrm".
"DiscoveryGATE" --> OLT send to "DiscoveryProcess", while
"NormalGATE" --> OLT send to "GateProcess" in the OMP parser.

There is some detail proposals in the attached file:"ogura-49e.ppt".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Based on ogura-49e2.pdf and additional compensation for laser turn on delay, editor will appropriately fix diagrams.

Cl **56** *SC* **Figure56-15** *P* **128** *L* **19** # **709**

OGURA, Yasuo NTT

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

There is an arrow which name is "Gate.request(grant)".
This comment has already been acceptted in the D1.0-No.192.

SuggestedRemedy

I think of that this arrow is "MA_Control.request(gate)" and the direction of arrow should be inverse.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure56-16** *P* **134** *L* **27** # **704**

OGURA, Yasuo NTT

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

In the center of this figure, there is an arrow:" OMP.indication(DA,SA, subtype= REGISTER_REQ, requested_port, ...).

SuggestedRemedy

How about delete "requested_port"?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Updated diagrams will fix and clarify.

Cl **56** *SC* **Figure56-16** *P* **134** *L* **5** # **703**

OGURA, Yasuo NTT

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

When OLT receive a REGISTER_REQ, it calculate a RTT. But there is not calculate a RTT when it receivea REGISTER_ACK.

SuggestedRemedy

In the next line of the "if(state= find_state(SA))<>null", there should be the "state.RTT = timestamp - localtime".Please check the attached file:"ogura-21e.ppt".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Updated diagrams will fix and clarify.

Cl **56** *SC* **Figure56-17** *P* **135** *L* **12** # **710**

OGURA, Yasuo NTT

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

In the block of the "DEFFERAL",there is "Backoff = max(max_defferal, Backoff+1)".I think of that Backoff is almost equal "10", and the value of Backoff_wait is between 0 and 2^10, so that this equation cannot limit the each value of "Backoff" and "Backoff_wait".
This comment has already been accepted in the D1.0-No.169.

SuggestedRemedy

How about change to following equation.
"Backoff = min(max_defferal, Backoff+1)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure56-17** *P* **135** *L* **35** # **714**

OGURA, Yasuo NTT

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

In the D1.1, ONU will turn the Laser ON everytime when the "start_time" has come.Even if it would not send a "REGISTER_REQ" because of it's "Backoff_wait".It is very bad specification when multiple ONUs are going to do AutoDiscovery at the same time.All ONUs will turn it's Laser ON at the same time, OLT may not be able to process Discovery successly so that it will detect collisions everytime.

SuggestedRemedy

OLT can trun Laser ON/OFF Only in the "GateProcess state Diagram", so that OLT can not tunr Laser OFF when it deside not sending a REGISTER_REQ in the "DiscoveryProcess state Diagram".
I think of that it is good way to solve this problem that:

@Laser Control:
How about control from the "DiscoveryProcessing" and "GateProcessing".
Only NormalGATE:OLT turn on/off from "GateProcessing", and
DiscoveryGATE: OLT turn on/off from "DiscoveryProcessing".

There is some detail proposals in the attached file:"ogura-49e.ppt".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Based on ogura-49e2.pdf and additional compensation for laser turn on delay, editor will appropriately fix diagrams.

Cl **56** *SC* **Figure56-18** *P* **136** *L* # **706**

OGURA, Yasuo NTT

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

In the Baseline document descriptions, I think of that ONU will process following behavior.

ONU send a REGISTER_ACK MPCUDU. --> It receive a Normal-Gate MPCPDU as the 1st GATE. : It means a success of AutoDiscovery process.
ONU send a REGISTER_ACK MPCUDU. --> It receive a Disovery-GATE MPCUDU as the 1st GATE. : It is a failure of AutoDiscovery process.

But there is no description in the Figure56-18;"Discovery Processing Slave State Diagram2".

SuggestedRemedy

How about check and update the Figure56-18.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
In case of failure 2 methods are used:
1) OMP timeouts at the ONU as no MPCP messages are sent to the ONU's LLID
2) A unicast REGISTER might be sent by the OLT before timeout expires.

Cl **56** *SC* **Figure56-18** *P* **136** *L* **30** # **705**

OGURA, Yasuo NTT

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

There is the block:"ADDITIONAL REG".I heard of that it is deleted to add some LLIDs after registration has finished.

SuggestedRemedy

How about delete the block:"ADDTIONAL REG"?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure56-18** *P* **136** *L* **50** # **728**

OGURA, Yasuo NTT

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

In the block of "ACK", there is a "OMP.request()".
The 4th parameter:"accepted_capability", it seems starnge for me. Is it "suportted_capability"?

SuggestedRemedy

After being modified, "OMP.request(SA, DA, subtype=REGISTER_ACK, supportted_capability(master_capability),)".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure56-2** *P* **110** *L* **8** # **736**

OGURA, Yasuo NTT

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

There is a "Multipoint MAC Control" in the Figure56-2. But there is a "Multiplexing MAC Control" in the Figure56-6.Are they same meaning?
I think it is Yes. Because there is a "Operation of the Multiplexing MAC Control sublayer, and the OMP sublayer ....." in the body of Draft1.1, it's location is P.110 L1.

SuggestedRemedy

If they are the same meaning, how about change words "Multipoint MAC Control" into "Multiplexing MAC Control"?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
There is no consistency naming the blocks.
Fig 56-4 and 56-6 and corresponding text should replace "multiplexing MAC control" for "Multipoint MAC control"
(The multipoint MAC control does more than multiplexing.)

Cl **56** *SC* **Figure56-22** *P* **144** *L* **13** # **715**

OGURA, Yasuo NTT

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

In the D1.1, ONU will turn the Laser ON everytime when the "start_time" has come.Even if it would not send a "REGISTER_REQ" because of it's "Backoff_wait".It is very bad specification when multiple ONUs are going to do AutoDiscovery at the same time.All ONUs will turn it's Laser ON at the same time, OLT may not be able to process Discovery successly so that it will detect collisions everytime.

SuggestedRemedy

Only NormalGATE:OLT should turn on/off from "GateProcessing", and DiscoveryDATE:OLT should turn on/off from "DiscoveryProcessing".

If this idea will come true, we should delete some descriptions about DiscoveryGATE from the Figure56-22.In the block of "START_TX", there is "if" statement:" if (current_grant.discovery) MA_CONTROL.request(.....)".
I think of that it should be deleted.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Requires review of interaction between discovery/gating block for backoff.

Cl **56** *SC* **Figure56-22** *P* **144** *L* **14** # **727**

OGURA, Yasuo NTT

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

In the bottom of the block:"START_TX", there is "GRANT.indication()".

This comment has already been accepted in the D1.0-No.195.

SuggestedRemedy

It should be "MA_CONTROL.indication()", I suppose.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure56-22** *P* **144** *L* **31** # **717**

OGURA, Yasuo NTT

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

From WAIT to PROGRAM, "MA_CONTROL.request() with local=true": I cannot understand when and how to use this primitive.In the "56.3.5.1.5 Messages" there is "the grants are intended for local consumption", but I cannot have any images how to use it.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Local gating is to be removed for Draft 1.2

Cl **56** *SC* **Figure56-22** *P* **144** *L* **37** # **711**

OGURA, Yasuo NTT

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

In the baseline document:"haran_1_0302.pdf", there is a description that OLT may overlap the end of ONU1-grant and the head of ONU2-grant.If these grants are allocated to the same ONU1.
Can OLT allocate grants with overlaping?

If they are overlapping, there is not so much margin between two grants, so that the condition:"if time > laser_on_time + IDLE_time + laser_off_time" will not be true.

SuggestedRemedy

In the SORT block, we should consider the condition of "if" statement.
If two grants are overlapping, it seems difficult to make a inequation with some parameters such as laser_on_time, IDLE_time , laser_off_time.

How about check the margin is greater than IPG(inter packet gap).

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The mechanism described in the SORT block deals with the ONU and not the OLT.

Cl **56** *SC* **Figure56-22** *P* **144** *L* **38** # **716**

OGURA, Yasuo NTT

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

In the D1.1, ONU will turn the Laser ON everytime when the "start_time" has come.Even if it would not send a "REGISTER_REQ" because of it's "Backoff_wait".It is very bad specification when multiple ONUs are going to do AutoDiscovery at the same time.All ONUs will turn it's Laser ON at the same time, OLT may not be able to process Discovery successly so that it will detect collisions everytime.

SuggestedRemedy

Only NormalGATE:OLT should turn on/off from "GateProcessing", and DiscoveryDATE:it should turn on/off from "DiscoveryProcessing".

If this idea will come true, we should delete some descriptions about DiscoveryGATE from the Figure56-22.In the block of "START_TX", there is "if" statement:" if (!discovery) MA_CONTROL.indication(.....)".
I think of that it should be deleted.

Proposed Response *Response Status* **W**

duplicate #715

Cl **56** *SC* **Figure56-22** *P* **144** *L* **39** # **712**

OGURA, Yasuo NTT

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

Inside of the state:"PROGRAM", ther is a variable:"if request_report".

This comment has already been accepted in the D1.0-No.196.

SuggestedRemedy

I think of that it should be a "if force_report".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure56-24** *P* **148** *L* # **747**

OGURA, Yasuo NTT

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

On Figure56-24:"GATE MPCPDU", there is the octet-length on the right-side of each field.For example, Grant#1 Start time --> 2, Grant#1 Length --> 4.
But the length is wrong.Start time should be 4 octets and Length should be 2 octets, so that Grant#1 - Grant#4, Number of octets is inverted "Start time" and "Length".

SuggestedRemedy

Grant#1: "Start time" should be "4" and "Length" should be "2".
Grant#2...4: "Start time" should be "0/4" and "Length" should be "0/2".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure56-25** *P* **150** *L* **35** # **723**

OGURA, Yasuo NTT

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

On Figure56-25:"REPORT MPCPDU", there is the octet-length on the right-side of each field.There is the number of bytes of "Pad/Reserved" as "0-38". It should be "0-39".

SuggestedRemedy

"Pad/Reserved" --> "0-39".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See # 722

Cl **56** *SC* **Figure56-28** *P* **156** *L* **25** # **726**

OGURA, Yasuo NTT

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

On the Figure56-28, "Pad/Reserved2": The character "2" should be deleted.

SuggestedRemedy

After being modified, "Pad/Reserved".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure56-5** *P* **114** *L* **9** # **742**

OGURA, Yasuo NTT

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

On figure 56-5, even though multiplexing control reads and writes the "multipoint_transmission_in_progress" variable, the arrow of the variable has only one direction (input).

SuggestedRemedy

The arrow of "multipoint_transmission_in_progress" should be changed to both directions (input and output).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Figure56-5** *P* **114** *L* **9** # **733**

OGURA, Yasuo NTT

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

I think of that the vector:"transmission_in_progress[1..n]" should be deleted from this figure. Because each instance does not use for comunication in the figure 56-6.

SuggestedRemedy

How about delete the vector:"transmission_in_progress[1..n]" from Figure 56-5:"Multiplexing Control Service Interfaces"?

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Transmission_in_progress is used in Figure 56-11
Add transmission_in_progress[1..n] signal in figure 56-6.

Cl **56** *SC* **Figure56-6** *P* **114** *L* **30** # **743**

OGURA, Yasuo NTT

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

On figure 56-6, multiplexing control interfaces with instance n. The related variables of the interface are not only "transmitPending[n]" and "transmitEnable[n]", but also "multipoint_transmission_in_progress".

SuggestedRemedy

Add the arrow indicating "multipoint_transmission_in_progress" between multiplexing control and each instance 1..n.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Diagram intended to be simplified for clarity.
As it causes confusion instead, it will be modified for correctness.
The multipoint_transmission_in_progress is generated by the OR function of transmission_in_progress[1..n] signals.

Cl **56** *SC* **Figure56-6** *P* **117** *L* **25** # **737**

OGURA, Yasuo NTT

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

There is a "Multipoint MAC Control" in the Figure56-2. But there is a "Multiplexing MAC Control" in the Figure56-6.Are they same meaning?
I think it is Yes. Because there is a "Operation of the Multiplexing MAC Control sublayer, and the OMP sublayer ....." in the body of Draft1.1, it's location is P.110 L1.

SuggestedRemedy

If they are the same meaning, how about change words "Multipoint MAC Control" into "Multiplexing MAC Control"?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #150

Cl **56** *SC* **Figure56-8** *P* **117** *L* **17** # **738**

OGURA, Yasuo NTT

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

SuggestedRemedy

The title:"Control Parser/Multiplexer Service Interface" of the Figure56-8, it should be a "Control Parser Service Interface".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Table 56-2** *P* **147** *L* # **324**

Khansari, Masoud Centillium Communicat

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

It is possible to send GATE MPCPDU with zero number of Grants.
It is not clear from the text why there is a need for such function.

SuggestedRemedy

If it is intended as a keep-alive, Grants with zero duration achieve the same functionality.
If zero grant GATE messages are allowed then make the required changes in Figure 56-24 (e.g. Pad/Reserved bytes should read 11-39 and also Grant #1 Start time and Length becomes optional).
In general, we need to have a coherent approach to issues regarding keep-alive messages. There are many ways to do that at many layers, and we need to address this in the next draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
GATE messages with zero grants are not allowed.
Text will be changed to read 1 to 4.

Cl **56** *SC* **Table 56-2** *P* **147** *L* **7** # **896**

Sio Peng GOI Institute for Communic

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

The value of number of grants field in Table 56-2 is not consistent with that illustrated in Figure 56-24

SuggestedRemedy

Change the value of number of grants from 0-4 to 1-4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **Table56-4** *P* **151** *L* **14** # **730**

OGURA, Yasuo NTT

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

There should be a description when flag is Reserved.I think of that OLT(or ONU) should discard these received packet with Reserved flag because they will be transmitted from future OLT(or ONU), so that current OLT(ONU) adoptted to D1.1 cannot understand how to treat these packtes.

SuggestedRemedy

In the case of "flag == Reserved", how about add this sentence: "Packet is discarded." in the cell of "comment".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Text to be changed to clearly state that reserved fields are ZERO on transmission and IGNORE on reception

Cl **56** *SC* **Table56-5** *P* **153** *L* **13** # **731**

OGURA, Yasuo NTT

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

There should be a description when flag is Reserved.I think of that OLT(or ONU) should discard these received packet with Reserved flag because they will be transmitted from future OLT(or ONU), so that current OLT(ONU) adoptted to D1.1 cannot understand how to treat these packtes.

SuggestedRemedy

In the case of "flag == Reserved", how about add this sentence: "Packet is discarded." in the cell of "comment".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Text to be changed to clearly state that reserved fields are ZERO on transmission and IGNORE on reception

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Cl **57** *SC* *P* **163** *L* **1** # **329**

Khansari, Masoud Centillium Communicat

Comment Type **E** *Comment Status* **D** *p2pe*

In the entire clause, sometimes PLS service interface is used with index j, e.g. Figure 57-2, and sometimes it is used without the index. Please be consistent.

SuggestedRemedy

Make the required changes all through Clause 57.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to comment #164.

Cl **57** *SC* **1** *P* **164** *L* **16** # **790**

Dolors, Sala Broadcom

Comment Type **TR** *Comment Status* **D** *p2pe*

this RS layering support a general filtering of frames allowing to support P2PE, SE and SCB services as desired.

SuggestedRemedy

Add text at teh end of sentence k)

" and the emulation service (P2PE, SE, SCB) desired".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

What are SE and SCB emulation services? If this filtering mechanism does indeed support these services, and it is the intention of this clause to adertise that fact, then we should include the above text.

Cl **57** *SC* **1.3** *P* **164** *L* **32** # **791**

Dolors, Sala Broadcom

Comment Type **TR** *Comment Status* **D** *p2pe*

This clause supports more things than P2PE. It differs from clause 22 in that it extends it to transmit and process information in the preamble.

SuggestedRemedy

replace "without P2PE" for "without preamble extension"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Is this clause in existence to support P2PE or preamble extension? Comment #790 suggests that this clause supports other types of emulation services as well. For this reason, perhaps we should also change the name of the clause to simply advertise the fact that it enables preamble extensions for the purpose of supporting various emulation services.

Cl **57** *SC* **2** *P* **168** *L* **39** # **328**

Khansari, Masoud Centillium Communicat

Comment Type **T** *Comment Status* **D** *p2pe*

ID-m, ID-n, Mode-m and Mode-n needs to be clarified and defined precisely.
Does Mode-m corresponds to the Mode of the port receiving the frame with (Mode-n, ID-n)? Can the same port processes both P2P and broadcast frames? Or broacast packets are processed through separate port.

SuggestedRemedy

Please re-write this section and make the required clarifications.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I fully agree that this concept has not been introduced sufficiently for the reader to understand it. Text is being considered for inclusion.

Cl **57** *SC* **2.2** *P* **168** *L* # **792**

Dolors, Sala — Broadcom

Comment Type **TR** *Comment Status* **D** *p2pe*

I assume this clause is the general filtering of frames. However, I find it very difficult to interpret.

it seems to be comparing the fields of two tags (n and m). One could be receiving frame and the other the actual LLID of the received MAC. However, I do not understand why the mode comparison.

SuggestedRemedy

Please clarify. It would be helpful using the notation that we have used so far.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I've learned the following:

m - index referring to the received LLID
n - index referring to the node's provisioned LLID

mode bit - 0 = unicast address, 1 = broadcast address
ID - when mode = 0, it indicates the destination ID. when mode = 1, it indicates the source ID so the source of the frame can choose to ignore it.

I fully agree this needs clarification in the document.

Cl **57** *SC* **2.2** *P* **169** *L* # **793**

Dolors, Sala — Broadcom

Comment Type **TR** *Comment Status* **D** *p2pe*

Figure 57-3 should add the filtering operation just after the preamble state and before the SFD. To know if this frame should be received or discarded.

SuggestedRemedy

Add state in between Preamble and SFD to decide whether to accept or reject frame as defined by filtering rules.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I'm guessing that was the idea behind the CRC(preamble) function in the PREAMBLE state and the "bad CRC or lookup failed" condition on the transition to the ERROR/WAIT state. However, without a description of the state diagrams, this is not easily determined. This state diagram description, as well as bringing the state diagrams into conformance with 21.5, is underway.

Cl **57** *SC* **57** *P* **161** *L* **1** # **618**

Bemmel, Vincent — Alloptic

Comment Type **E** *Comment Status* **D** *p2pe*

Title contains a page break and is split between 2 pages 161 and 162

SuggestedRemedy

fix it

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **57** *SC* **57** *P* **163** *L* # **919**

Tom Mathey — Independent

Comment Type **T** *Comment Status* **D** *p2pe*

This clause provides additions to Clause 35, but the additions are not well identified. This clause needs to delete half-duplex text and specifically identify such deletions.

SuggestedRemedy

Develop some editorial method to:
identify text which is added,
identify text which is changed,
identify text which is deleted, such as half-duplex.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I agree that there needs to be some straightforward means for a reader to determine the differences between 57 and 35. I'm working on this. Ideas would be gladly accepted.

Cl **57** *SC* **57.1** *P* **163** *L* **27** # **614**

Bemmel, Vincent — Alloptic

Comment Type **T** *Comment Status* **D** *p2pe*

PLS is not shown in the figure, but referred to later in the text (e.g., 57.1.1 k). Refer to Figure 35-1 for an example.

SuggestedRemedy

Add PLS to figure 35-1, or remove reference to this as a layer

Proposed Response *Response Status* **O**

Cl **57** *SC* **57.1** *P* **163** *L* **6** # **613**

Bemmel, Vincent — Alloptic

Comment Type **T** *Comment Status* **D** *p2pe*

Figure 57-1 applies to the OLT. Please clarify that, and how this is done at the ONU.

SuggestedRemedy

1. Modify Line 5 to :
"Figure 57-1 shows the reationship of the Reconciliation sublayer and GMII to the ISO/IEC OSI reference model at the OLT"

2. Add a note under Figure 57-1

3. Clarify that the ONU model colapses to a single stack above the RS layer

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Doesn't that mean that an ONU would use Clause 35 in regards to how the stack looks? Or, perhaps another way to look at it is that even the OLT's version of this stack collapses to a single MAC above the RS for the case of when there's only 1 ONU attached. Does this need to be mentioned, too?

Cl **57** *SC* **57.1** *P* **163** *L* **8** # **165**

Daido, Fumio — Sumitomo Electric Indu

Comment Type **T** *Comment Status* **D** *p2pe*

I believe clause 57 supports only 1000BASE-PX defined in clause 58 as PMD. So the Figure 57-1 should show that explicitly. And I believe that the carrier extension and half duplex are not supported in the clause 57, the current description associated with the carrier extension and half duplex of clause 57 makes reader confusing.

SuggestedRemedy

Replace "1000 Mb/s" in Figure 57-1 with "1000BASE-PX".

Delete the sentence associated with the copper, the carrier extension and half duplex throughout this clause. For example, the line 27 of page 164 contains "the copper".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **57** *SC* **57.1** *P* **163** *L* **8** # **164**

Daido, Fumio — Sumitomo Electric Indu

Comment Type **E** *Comment Status* **D** *p2pe*

The AUI, MII, MAU and PLS don't exist in the block diagram of Figure 57-1. It seems that the abbreviations of those are redundant for Figure 57-1.

SuggestedRemedy

The Abbreviations of AUI, MII, MAU and PLS in Figure 57-1 should be deleted.

And the sentences comprising those words need to be deleted throughout this clause. For example, the line 44 of page 164 in "57.1.4 Allocation of functions", the sentence which contains AUI and PLS should be deleted. If this sentence will not be deleted, please replace "Physical Signaling (PLS)" with "Physical Layer Signaling (PLS)".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove the Abbreviations from Figure 57-1.

Remove 57.1.4 completely.

Cl **57** *SC* **57.1.1** *P* **164** *L* **15** # **34**

Yajima, Yusuke — Hitachi Communication

Comment Type **E** *Comment Status* **D** *p2pe*

Typo.

SuggestedRemedy

Change 'extrcted' to 'extracted'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **57** *SC* **57.1.1** *P* **164** *L* **16** # **374**

Brown, Benjamin — AMCC

Comment Type **E** *Comment Status* **D** *p2pe*

misspelling

SuggestedRemedy

Bullet j) Replace "extrcted" with "extracted"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **57** *SC* **57.2.1** *P* **165** *L* **11** # **616**
Bemmel, Vincent Alloptic

Comment Type **T** *Comment Status* **D** *p2pe*

Not clear how Figure 57-2 applies to an ONU

SuggestedRemedy

add note to clarify how Figure 57-2 applies to an ONU

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #613.

Cl **57** *SC* **57.2.1.1.3** *P* **166** *L* # **132**
Yoshimura, Minoru NEC

Comment Type **T** *Comment Status* **D** *p2pe*

Variable transmit_PLS used in 57.2.1.1.3 and receive_PLS used in 57.2.1.2.3, 57.2.1.3.3, 57.2.1.4.3, 57.2.1.7.3 are not defined in this clause.

SuggestedRemedy

Add definition.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #164

Cl **57** *SC* **57.2.1.1.3** *P* **166** *L* **5** # **375**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D** *p2pe*

missing index

SuggestedRemedy

Replace "MAC sublayer" with MAC j sublayer"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **57** *SC* **57.2.1.2.3** *P* **166** *L* **35** # **166**
Daido, Fumio Sumitomo Electric Indu

Comment Type **T** *Comment Status* **D** *p2pe*

The description of the first sentence is not appropriate for this clause, because this primitive is not generated to all MAC sublayer entities in case of the P2MP system.

SuggestedRemedy

I would like to show the example as the modified paragraph below.

"This primitive is generated by the Reconciliation sublayer to MAC j while RX_DV is asserted. Each octet transferred on RXD<7:0> will result in the generation of eight PLS_DATA[j].indicate transactions."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **57** *SC* **57.2.1.3** *P* **166** *L* **35** # **615**
Bemmel, Vincent Alloptic

Comment Type **T** *Comment Status* **D** *p2pe*

PLS_DATA_[j].indicate is generated to all MAC sublayer entities in the network. Not clear how this works in the PON.

SuggestedRemedy

Clarify

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #166.

Cl **57** *SC* **57.2.1.3** *P* **166** *L* **48** # **376**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D** *p2pe*

PLS_CARRIER is a half-duplex signal only. I didn't think half-duplex was supported for P2MP EFM so why bother changing this?

SuggestedRemedy

Remove 57.2.1.3

The same thing applies to 57.2.1.4. Remove it as well.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See resolution to #165.

Cl **57** *SC* **57.2.2** *P* **168** *L* **45** # **377**

Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **D** *p2pe*

iff isn't defined

SuggestedRemedy

Replace "iff" with "if and only if"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **57** *SC* **57.2.2** *P* **168** *L* **46** # **167**

Daido, Fumio Sumitomo Electric Indu

Comment Type **T** *Comment Status* **D** *p2pe*

The definition of Mode and ID is not written here. And the relationship to "lookup failed" of Figure 57-3 is not clear.

SuggestedRemedy

The sentences to explain those need to be added in 57.2.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolutions to #792 & #793.

Cl **57** *SC* **57.2.2** *P* **168** *L* **46** # **617**

Bemmel, Vincent Alloptic

Comment Type **T** *Comment Status* **D** *p2pe*

Not clear what 'Mode-m' really is. Since LLID number is 'n' and interface number is 'm', what does Mode-n=Mode-m = 0/1 really means?

SuggestedRemedy

Clarify or correct this.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #792.

Cl **57** *SC* **57.2.2** *P* **168** *L* **4648** # **378**

Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D** *p2pe*

Describe Mode-x and ID-x before using them. This is a brand new concept and the fundamentals need some description.

SuggestedRemedy

Add a description/definition for Mode-x and ID-x.

Also, on line 48, replace <> with the sign for not equal from Table 21-1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolutions to #792 & #793.

Cl **57** *SC* **57.2.3** *P* **169** *L* # **133**

Yoshimura, Minoru NEC

Comment Type **T** *Comment Status* **D** *p2pe*

Function 'CRC( )' is not defined in this clause.

SuggestedRemedy

Add definition that clarifies the process of CRC-check.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #793.

Cl **57** *SC* **57.2.3** *P* **169** *L* **1** # **168**

Daido, Fumio — Sumitomo Electric Indu

Comment Type **T** *Comment Status* **D** *p2pe*

I can't understand what does "control registers" in the title of 57.2.3 stand for. I would like to change the title name and split 57.2.3 and add definition of state variables, such as lookup failed, to make reader easy to understand.

SuggestedRemedy

The following is my suggestion of change of name and structure for 57.2.3 subclause.

57.2.3 State variables
57.2.3.1 Constants
57.2.3.2 Variables
57.2.3.3 Functions
57.2.3.4 Messages

57.2.4 State diagrams
57.2.4.1 Receive
57.2.4.2 Transmit

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Also, see resolution to #793.

Cl **57** *SC* **57.2.3** *P* **169170** *L* # **134**

Yoshimura, Minoru — NEC

Comment Type **T** *Comment Status* **D** *p2pe*

Variables and functions used on figure57-3, 57-4 are not defined.

SuggestedRemedy

Add definition.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolutions to #793 & #168.

Cl **57** *SC* **57.2.4.2.1** *P* **figure 56-1** *L* # **99011**

Jaeyeon Song — Samsung Electronics

Comment Type **TR** *Comment Status* **R** *D1.0*

In table 56-1 "preamble definition" tell us the 2 bytes of preamble is allocated to LLID.
In baseline we agreed the LLID consist of a mode- bit and PHY_ID fields. The mode-bit represents the two mode, broadcast and unicast, not multicast.
In EPON, no protocol of supporting multicast traffic exists. But, multicast traffic will be in the EPON, and we should distinguish multicast traffic from broadcast.

SuggestedRemedy

We should define multicast LLID. In addition, multicast LLID don't have to be allocated through the auto-discovery process. It remains in high layer protocol. we just define the hook of supporting multicast traffic.

The possible solution is : Using the multicast address in MAC, we can make the multicast LLID by hash function or direct mapping. It is simple, no burden to MAC and RS layer filtering is possible like other LLIDs.

I will prepare presentation about it.

Proposed Response *Response Status* **C**

REJECT.

Multicast MAC address filtering is performed by higher layers.

Cl **57** *SC* **57.2.5.2** *P* **171** *L* **33** # **594**

Murakami, Ken — Mitsubishi Electric Cor

Comment Type **T** *Comment Status* **D** *p2pe*

The preamble may be 7 or 8 octets long on the transmission side because of the PCS function. The PCS performs with 2 octets timing.
In both case, SOP code substitute for the first byte.
In case of 8 octets long, SFD can be transparently transferred to the receiving side.
However, in case of 7 octets long, SFD is overwritten with SOP code. As a result, there is no delimiter which can indicate start of preamble.
Please see the attatched file.
The file name is murakami_3_1102.pdf.

SuggestedRemedy

SFD should be 3 octets long.
Peamble CRC should be calculated over the range from 3rd to 7th octets in preamble. 1st and 2nd octets should be excluded.
Please see the attatched file.
The file name is murakami_3_1102.pdf.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I haven't yet seen the proposal but I agree with the concepts you've outlined here.

Cl **57** *SC* **57.2.5.2.1** *P* **171** *L* **29** # **381**

Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **D** *p2pe*

bad word(s)

SuggestedRemedy

Replace "fortransition" with "for transmission"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **57** *SC* **57.2.5.2.1** *P* **171** *L* **29** # **169**

Daido, Fumio Sumitomo Electric Indu

Comment Type **E** *Comment Status* **D** *p2pe*

Typo

SuggestedRemedy

Replace "fortransition" with "for transition". The space needs to be inserted between two words.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace with "for transmission"

Cl **57** *SC* **57.2.5.2.1** *P* **171** *L* **46** # **385**

Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D** *p2pe*

It is customary to provide a reference (Clause 3's MAC CRC) or a shift register implementation (Clause 49's scrambler & descrambler) when specifying a polynomial

SuggestedRemedy

Add an implementation shift register figure to show how the preamble bits get passed through and the CRC-8 gets generated.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Looking for suitable representation from earlier presentations.

Cl **57** *SC* **57.2.5.2.2** *P* **172** *L* **17** # **170**

Daido, Fumio Sumitomo Electric Indu

Comment Type **T** *Comment Status* **D** *p2pe*

The order of bid transmission for the LLID and the preamble CRC in a octet is not clear. In case of the MAC frame, I believe the order of bit transmission is least significant bit (LSB) first except the FCS, only the FCS is most significant bit (MSB) first in a octet. Please see the 3.2.8, 3.3 in 802.3-2002.pdf.

And the procedure to calculate CRC 8 bits is not sufficient. At this moment only polynomial is shown in this clause. It is not clear the complement to calculate CRC is needed or not.

SuggestedRemedy

The sentence to explain the order of bit transmission of LLID and CRC needs to be added in this subclause and the location of bit 15 and bit 0 of LLID, and bit 7 and bit 0 of preamble CRC are shown in Table 57-3.

The procedure to calculate the preamble CRC 8 bits should be added in this clause like "3.2.8 Frame Check Sequence (FCS) field" in 802.3-2002.pdf.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #385.

Cl **57** *SC* **57.2.5.2.2** *P* **172** *L* **34** # **35**

Yajima, Yusuke Hitachi Communication

Comment Type **E** *Comment Status* **D** *p2pe*

The Third Note (C) for Table 57-3 should be changed from 'First octet of SPD' to 'Second octet of SPD'.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to "Third octet of SPD"

See resolution to #594.

Cl **57** *SC* **57.2.5.2.2** *P* **172** *L* **42** # **384**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D** *p2pe*

What happens when the first byte of preamble is discarded by the TX PCS in order to align to even? How does the receive RS find the the LLID/CRC-8? I know the first byte is assumed to exist for the purpose of calculating the CRC-8.

SuggestedRemedy

Describe exactly how these fields are located by the receive RS. In case there is no clean way to do this, perhaps I can suggest a special value used in octet 4 to tell the receive RS that the LLID follows. That way, the receive RS simply looks for this octet then takes the LLID and CRC-8 from the next 3 bytes.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See resolution to #594.

Cl **57** *SC* **Figure 57-3** *P* **169** *L* # **326**
Khansari, Masoud Centillium Communicat

Comment Type **E** *Comment Status* **D** *p2pe*

Variables, functions of the receive and transmit state diagrams in Figures 57-3 and 57-4 needs to be spelled out!

SuggestedRemedy

Be consistent in using state-machine and state diagram. Clause 56 uses state diagram where as Clause 57 uses state-machine.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #793.

Cl **57** *SC* **Figure 57-3** *P* **169** *L* **1** # **921**
Tom Mathey Independent

Comment Type **T** *Comment Status* **D** *p2pe*

State diagram uses terms not defined by 802.3 in Figure 1-2 or extensions of 21-5.

SuggestedRemedy

Do not use such terms as "==", use assignment within a block.
Do use "=" for exit conditions from a block.
Scrub entire clause for conformance to state diagram requirements.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #793.

Cl **57** *SC* **Figure 57-3** *P* **169** *L* **1** # **920**
Tom Mathey Independent

Comment Type **T** *Comment Status* **D** *p2pe*

Many variables such as receive_PLS, lookup, CRC(preamble), are used in the state diagram without a definition and/or supporting text.

SuggestedRemedy

ADD.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #793.

Cl **57** *SC* **Figure 57-3** *P* **169** *L* **1** # **922**
Tom Mathey Independent

Comment Type **T** *Comment Status* **D** *p2pe*

Exit from block COLLECT seems strange. One exit from block COLLECT is labeled UCT, another is labeled RX_DV == true. This can not be.

SuggestedRemedy

Resolve.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #793.

Cl **57** *SC* **Figure 57-4** *P* **170** *L* # **327**
Khansari, Masoud Centillium Communicat

Comment Type **T** *Comment Status* **D** *p2pe*

CRC calculation function of the preamble bytes should be added in the PREAMBLE state.

SuggestedRemedy

Please make the appropriate changes.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #793.

Cl **57** *SC* **Figures 57-3 & 4** *P* **169** *L* **1** # **379**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D** *p2pe*

Before jumping into the state machines, declarations and descriptions of variables and general flow is customary. At least there ought to be some text that references the figures.

SuggestedRemedy

Add descriptive text for state machines. Also, make sure they follow the conventions of 21.5 and any timers follow the conventions of 14.2.3.2 or be thorough about describing new conventions.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #793.

Cl **57** *SC* **General** *P* *L* # **373**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D** *p2pe*

Isn't this clause simply an extension of 35? I think it would be a lot easier to determine the variations from 35 if it was part of 35. Isn't the current Clause 35 a special case of 1 MAC to 1 PHY, where this new Clause 35 the case of X MACs to 1 PHY?

SuggestedRemedy

Merge this into Clause 35.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Desire is to keep P2MP extensions outside general flow of GE.

Cl **57** *SC* **Table 57-1** *P* **171** *L* **39** # **382**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **D** *p2pe*

Why are 16 bits used for the 2 octet SPD field but only 8 bits for the 3 octet reserved field?

How does the LLID field map to LLID[15:0] from Table 57-2?

SuggestedRemedy

Rather than use a table for this section, perhaps an example LLID & CRC-8 could be generated along with a full binary representation of the transmit data as in page 171, line 23.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #594.

Cl **57** *SC* **Table 57-1** *P* **171** *L* **42** # **923**
Tom Mathey Independent

Comment Type **T** *Comment Status* **D** *p2pe*

A bit more work is needed for the CRC.

SuggestedRemedy

Include test to completely describe the crc operation, such as initial state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #385.

Cl **57** *SC* **Table 57-3** *P* **172** *L* **18** # **924**
Tom Mathey Independent

Comment Type **T** *Comment Status* **D** *p2pe*

Text states "First octet of SPD that might not be received".

SuggestedRemedy

Add text to standard to provide some clue to implementators for how to determine if the first octet is present or missing.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to #594.

Cl **57** *SC* **Table 57-3** *P* **172** *L* **30** # **383**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **D** *p2pe*

The 3rd column of bit values should use a value of 0 for RXD7.

SuggestedRemedy

Fix this entry.

Proposed Response *Response Status* **O**

Cl **58** *SC* **14.2.3** *P* **194** *L* **33** # **890**
John George OFS

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

Redundant with 58.14.1

SuggestedRemedy

Delete 58.14.2.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **58** *SC* **58.13.1** *P* **193** *L* **13** # **912**

Tom Murphy Infineon

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

The Channel Insertion Loss Tables need to be completed. However, before this (and other related issues) can be approached, the fibre attenuation must be identified. This comment is intended to generate discussion of fibre characterisation at the November meeting.

SuggestedRemedy

Agree on the fibre attenuation, then complete these tables for the next meeting.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Discuss with cable plant harmonization discussionat meeting

Cl **58** *SC* **58.13.1** *P* **193** *L* **16** # **910**

Tom Murphy Infineon

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

The PON link budgets are based on minimum losses of 5 dB for Type A and 10dB for Type B. This is not immediately apparent from the existing text. These tables could be used to reflect this assumption

SuggestedRemedy

Include a minimum loss value in Table 18 and 19, 5 and 10 dB, respectively

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **58** *SC* **58.14.2.3** *P* **194** *L* **33** # **128**

Koji, Shino NTT

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

58.14.2.3 is the same as 58.14.1.

SuggestedRemedy

Delete line 33 to 35

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This change is in keeping with Clause 38 and other EFM clauses

Cl **58** *SC* **58.2.1** *P* **179** *L* **14** # **473**

Swanson, Steve Corning Incorporated

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

Missing diagram.

SuggestedRemedy

Add diagram similar to 1000BASE-EX block diagram in Figure 59-1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The additional diagram would have to represent the PON nature of the set-up and is also dependent on the outcome of Signal Detect discussions. Perhaps you can present a suggestion at the next meeting

Cl **58** *SC* **58.2.1** *P* **179** *L* **4** # **872**

Tom Murphy Infineon

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

Patch cord length has been agreed upon

SuggestedRemedy

x=0.5, y=2 m

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

x=2, y=5 m

Cl **58** *SC* **58.2.1** *P* **179** *L* **4** # **871**

Tom Murphy Infineon

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

The majority of BiDi devices use a pigtail construction. Hence, a patch cord is not needed for this measurement.

SuggestedRemedy

...is defined as the output end of a patch cord or pigtail (TP2),...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Discuss consistancy with MDI definition

Cl **58** *SC* **58.2.4** *P* **179** *L* **54** # **475**

Swanson, Steve — Corning Incorporated

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

Text on signal detect not harmonized with other clauses.

SuggestedRemedy

Add the last 2 paragraphs of 59.2.4 in clause 58.2.4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment 619. This comment can only be resolved after SD discussions have been completed.

Cl **58** *SC* **58.2.4** *P* **180** *L* **3** # **619**

Onishi, Kazumi — Oki Electric Industry C

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

Regarding 1000BASE-PX-OLT Type A and 1000BASE-PX-OLT Type B, the received signal condition is different from the condition of the other optical PMDs e.g. 1000BASE-PX-ONU, 1000BASE-LX or 1000BASE-SX, because 1000BASE-PX-OLT receives time shared signals from multi-point ONUs, whereas the other optical PMDs receive signals from a single station. So 1000BASE-PX-OLT should indicate signal detect separately for each ONU, but this function cannot be applied because 1000BASE-PX-OLT does not know which ONU the signal comes from.
For the above reason, OLT Type A signal detect function(58.2.4.1.1) and OLT Type B signal detect function(58.2.4.2.1) shouldn't be supported.

SuggestedRemedy

Delete "58.2.4.1.1 OLT Type A Signal Detect" and "58.2.4.2.1 OLT Type B Signal Detect".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

At the last meeting, the MPCP group were requested to submit requirements for a SD for burst mode, see comment 58 from New Orleans. We will review the MPCP group's findings at this meeting

Cl **58** *SC* **58.2.4** *P* **184** *L* **7** # **99043**

Dawe, Piers — Agilent

Comment Type **TR** *Comment Status* **A** *D1.0 #333 Refer*

Signal detect: it's universal at present in continuous-mode receivers (point to point) but the everyday signal detect approach in clause 38 won't be fast enough to detect individual bursts in a head end burst mode receiver. Further, if EFM is to aspire to a first mile in a consumer market, every pin and mW needs to be scrutinised and possibly jettisoned, especially in the continuous-mode CPE receiver. See GR-253 for how PMD signal detect need not be mandatory. The standard does not have enough reason for demanding that the function be implemented in the PMD (although implementers may choose to use it), nor that the signal detect status be reported in duplicate, though a physical pin and through a management interface. Signal detect is not the primary way of detecting breaking links; these are detected by noting a "run of zeroes" (coding violation). However, an optional signal detect may be useful in near-term mid-price equipment and even for confirming cabling failures between the head end and the splitter in a PON. In the suggested remedy I have assumed that 1000BASE-PX will use Clause 45 MDIO.
Also it's nice if signal detect operates below sensitivity.
I wonder if clause 36 is compatible with PON operation. If the bursts cause SD chatter, will this foul up the PCS?

SuggestedRemedy

Check that 36 as modified is compatible with the following. I think the state machine Figure 36-9 and 36.2.5.1.4 (signal_detectCHANGE) will work with (a conceptual, non-existent, cheap) SD hard wired to OK.
Check that clause 36 is compatible with PON operation. If the bursts cause SD chatter, will this foul up the PCS?
Suggested text for 59.2.4:
The signal detect function is traditionally implemented in the transceiver, although it may be implemented elsewhere, e.g. in association with the PMA, or not implemented. If implemented within the PMD, the PMD Signal Detect status shall be reported either or both of two ways. The PMD Signal Detect function may report to the PMD service interface, using the message PMD_SIGNAL.indicate(SIGNAL_DETECT) which is signaled continuously. PMD_SIGNAL.indicate is intended to be an indicator of optical signal presence. Or the status may be reported via the management interface. If the MDIO interface is implemented, the value of SIGNAL_DETECT may contribute to the latching link status register bit 1.2 described in 22.2.4.2.13.

If implemented, the value of the SIGNAL_DETECT parameter shall be generated according to the conditions defined in Table 60-1. If signal detect is not implemented, the value of the SIGNAL_DETECT parameter conveyed to the upper layers and management functions shall be "OK". The PMD receiver is not required to verify whether a compliant signal is being received. This standard imposes no response time requirements on the generation of the SIGNAL_DETECT parameter. It is preferable for the signal detect thresholds to be below the rated sensitivity of the receiver; they must be below the Receiver sensitivity (max) in this standard.

As an unavoidable consequence of the requirements for the setting of the SIGNAL_DETECT parameter, implementations must provide adequate margin between the input optical power level at which the SIGNAL_DETECT parameter is set to OK, and the inherent noise level of the PMD due to cross talk, power supply noise, etc.

Various implementations of the Signal Detect function are permitted by this standard, including implementations that generate the SIGNAL_DETECT parameter values in response to the amplitude of the modulation of the optical signal and implementations that respond to the average optical power of the modulated optical signal. Full Ethernet implementations which do not use a PMD signal detect, or which do not use any signal detect, must avoid noise, chatter or crosstalk creating a bogus signal with the characteristics of a real signal, which is not otherwise identified as bogus.

Proposed Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Comment is refered to Ariel Maislos for consideration within P2MP. PMD group would like requirements (or lack of) for Signal Detect: For instance, speed (fast vs.slow), optional/mandatory etc.

Cl **58** *SC* **58.2.4.1.1** *P* **180** *L* **13** # **873**

Tom Murphy Infineon

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

The sign in the first line of the table is incorrect, needs to be corrected in four tables

SuggestedRemedy

Change >= to <=

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **58** *SC* **58.2.4.1.1** *P* **180** *L* **14** # **476**

Swanson, Steve Corning Incorporated

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

Incorrec table entry

SuggestedRemedy

"Input_optical_power >=xx dBm" should read "Input_optical_power <=30 dBm"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **58** *SC* **58.2.4.1.1** *P* **180** *L* **17** # **477**

Swanson, Steve Corning Incorporated

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

Clarification needed.

SuggestedRemedy

Add after "...Receive sensitivity..." the following text: "(max) in Table 58-9."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **58** *SC* **58.2.4.1.2** *P* **180** *L* **35** # **478**

Swanson, Steve Corning Incorporated

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

Incorrect entry.

SuggestedRemedy

"Input_optical_power >=-xx dBm" should read "Input_optical_power <=-30 dBm"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **58** *SC* **58.2.4.1.2** *P* **180** *L* **38** # **479**

Swanson, Steve Corning Incorporated

Comment Type **E** *Comment Status* **D** *DUP 477*

Clarification needed.

SuggestedRemedy

After "Receive sensitivity" add the following text: "(max) in Table 58-9"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See commment 477

Cl **58** *SC* **58.3** *P* **181** *L* **40** # **125**

Koji, Shino NTT

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

"1000BASE-PX" should be changed into "1000BASE-PX Type A"

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **58** *SC* **58.3** *P* **181** *L* **51** # **480**

Swanson, Steve Corning Incorporated

Comment Type **E** *Comment Status* **D** *DUP 489*

Incorrect format.

SuggestedRemedy

"0.5m to 10 km" should read "0.5 to 10000" and relabel heading to read "Minimum range (m)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

There was a comment at the last meeting proposing the use of km where appropriate, see comment 489

Cl **58** *SC* **58.3.1** *P* **182** *L* **17** # **884**

Tom Murphy Infineon

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

The wavelength range for the ONU (1270 to 1360) is inconsistent with Clause 59, 60 and 38.

SuggestedRemedy

Change to 1260 to 1360 nm, changes to four tables. Also expand RMS tables * 2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to 1260 to be consistant with other EFM clauses. Have a discussion regarding lower end range and installed cable plant.

Cl **58** *SC* **58.3.1** *P* **182** *L* **19** # **907**

Tom Murphy Infineon

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

For type A & B, in the OLT, the power range for Tx is 4 dB. This is too small for manufacturing tolerances, ageing and other factors. These points will be details in a presentation prepared by Frank Effenberger

SuggestedRemedy

For Type A & B, increase Tx power range to 5 dB, OLT Tx max increased by 1 dB, ONU Rx max overload increase by 1 dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Make a decision based on the presentation

Cl **58** *SC* **58.3.1** *P* **182** *L* **25** # **874**

Tom Murphy Infineon

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

No value for OFF power of OLT Tx

SuggestedRemedy

Insert -30 dBm as OFF power

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Value is needed. Actual number to be discussed at the meeting

Cl **58** *SC* **58.3.1** *P* **182** *L* **27** # **607**

Bemmel, Vincent Alloptic

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

An extinction ratio of 9dB is more realistic. Consistent with 1000Base-LX (8802-3-2000, Table 38-7)

SuggestedRemedy

Change Extinction ratio values from 6dB to 9dB

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The original value of 9 dB was changed to 6 dB at the July meeting after much discussion. Lower ER has many advantages. (see comment 334 from July)

Cl **58** *SC* **58.3.1** *P* **182** *L* **31** # **909**

Tom Murphy Infineon

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

Adopt the proposed PON timing values here and for the OT receiver

SuggestedRemedy

Adopt the proposed PON timing values here and for the OT receiver

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need to close on and discuss the action items regarding timing from the last meeting. Refer to bhatt_general_1_1102.pdf

Cl **58** *SC* **58.3.1** *P* **182** *L* **32** # **609**

Bemmel, Vincent Alloptic

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

Based on current technology, 100 ns (instead of 16ns) is a more realistic target value for T_on(max) and T_off(max)

SuggestedRemedy

Change target values for T_on(max) and T_off(max) to 100ns

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

There will be presenatation and discussions on this topic at the November meeting

Cl **58** *SC* **58.3.1** *P* **182** *L* **43** # **481**

Swanson, Steve — Corning Incorporated

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

Redundant text.

SuggestedRemedy

Delete entire subclause; RMS spectral width is already included in Table 58-7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **58** *SC* **58.3.1, 58.5.1,** *P* **157, 163.** *L* **in tables.** # **99044**

Frank Effenberger — Quantum Bridge Com

Comment Type **TR** *Comment Status* **A** *D1.0 #56 CNIR*

The downstream laser line widths of 1 nm RMS are too large. Also, the use of RMS specification for single longitudinal mode lasers is inappropriate.

SuggestedRemedy

The downstream laser line widths should be defined by their 20 dB width, and that width should be 1 nm. A footnote should be added to state: "The line width of the SLM laser is expected to be less than 1 nm."

The specific changes are:
Page 157: Change 'RMS spectral width' to 'Spectral width at -20dB points'
Page 157: Add note to changed text "The line width of the SLM laser is expected to be less than 1 nm."

Page 163: Change 'RMS spectral width' to 'Spectral width at -20dB points'
Page 163: Add note to changed text "The line width of the SLM laser is expected to be less than 1 nm."

Proposed Response *Response Status* **W**

ACCEPT IN PRINCIPLE. It is accepted that the value for the laser linewidth needs investigation. The method of definition is consistent with existing standards

Cl **58** *SC* **58.3.1.1** *P* **182** *L* **25** # **590**

Dawe, Piers — Agilent

Comment Type **T** *Comment Status* **D** *DUP 880*

The spectral trade-off in the 1590 band seems too fussy.

SuggestedRemedy

Replace:
1480 0.96 0.66
1500 0.88 0.60
with:
1480 to 1500 0.88 0.60

Be consistent with clause 59, e.g. by removing the table from one or other clause and referring across.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

A comment has been submitted (No 880) which suggests expanding this section of the table to include the 1490 nm value. Perhaps this issue will be resolved by the inclusion of epsilon diagrams

Cl **58** *SC* **58.3.1.1** *P* **182** *L* **46** # **875**

Tom Murphy — Infineon

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

RMS table not in correct location

SuggestedRemedy

Reunite Table 58-8 with the text of 58.3.1.1

Proposed Response *Response Status* **W**

PROPOSED REJECT. tables are intended to float

Cl **58** *SC* **58.3.1.1** *P* **183** *L* **25** # **876**

Tom Murphy — Infineon

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

It would be useful to know to RMS width for 1490 nm as this is the values most designers will initially consider

SuggestedRemedy

Insert further line into table with 1490 nm RMS values

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Will discuss at the meeting. Will propose to add the epsilon curves

Cl **58** *SC* **58.3.1.1** *P* **183** *L* **29** # **693**

Kakuno, Yutaka — Sumitomo Electric Indu

Comment Type **T** *Comment Status* **D** *DUP 173*

There is no expression for the side mode suppression ratio for SLM lasers, in Table 58-8(subclause:58.3.1.1, page:183, line:29) and Table 58-12(subclause:58.4.1.1, page:186, line:35).

SuggestedRemedy

Add footnotes to these tables as follows:
The side mode suppression ratio for SLM lasers is expected to be greater than or equal to 30dB.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This issue was discussed at the July meeting. The resolution was to leave as an RMS definition with the relationship between RMS and SLM stated at another point in the text. See comment 173

Cl **58** *SC* **58.3.2** *P* **183** *L* **38** # **482**

Swanson, Steve — Corning Incorporated

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

Incorrect wavelength range.

SuggestedRemedy

Change "1270-1360" to "1260-1360" consistent with other clauses.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Requires the corresponding changes to RMS tables, Also requires examination of fibre characteristics and reasons for 1270 nm as lower limit in clause 38

Cl **58** *SC* **58.3.2** *P* **183** *L* **51** # **611**

Bemmel, Vincent — Alloptic

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

Based on current technology, 1400 nsec (instead of 50) is a more realistic target value for T_optical_rec_recovery(max)

SuggestedRemedy

Change the target value of T_optical_rec_recovery(max) from 50 ns to 1400 ns (instead of 50)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

There will be presenatation and discussions on this topic at the November meeting

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Cl **58** *SC* **58.3.2, 58.4.1, 58.5.2, 5** *P* **158, 160, 16** *L* **in tables.** # **99046**

Frank Effenberger — Quantum Bridge Com

Comment Type **TR** *Comment Status* **R** *D1.0 #57 CNIR*

The burst mode timing targets are indeed practical. The editor's notes should be removed, and the values made normative.

SuggestedRemedy

Remove the editor's notes regarding the burst mode timing values.

The specific changes are:
1000Base-PX-OLT-A T_Optical_recovery_time notes removed(page 158)
1000Base-PX-ONU-A T_On and T-Off notes removed(page 160)

1000Base-PX-OLT-B T_Optical_recovery_time notes removed(page 164)
1000Base-PX-ONU-B T_On and T-Off notes removed(page 166)

Proposed Response *Response Status* **W**

REJECT. Optics STF would like to see more information on this topic before making a change. Tom Murphy to coordinate an effort for the next meeting in November

---

Cl **58** *SC* **58.3.2, 58.4.1, 58.5.2, 5** *P* **158, 160, 16** *L* **in tables.** # **99045**

Frank Effenberger — Quantum Bridge Com

Comment Type **TR** *Comment Status* **A** *D1.0 #54 CNIR*

The upstream power budgets place too heavy a burden on the OLT receiver sensitivity. As they stand, it will be very difficult to construct type B OLT receivers.

SuggestedRemedy

The upstream power levels should be increased by 1 dB overall.

The specific changes are:
1000Base-PX-ONT-A maximum receive power changed to -2 dBm (page 158)
1000Base-PX-ONT-A receive sensitivity changed to -25 dBm (page 158)
1000Base-PX-ONU-A average launch power (min) to -2 dBm (page 160)
1000Base-PX-ONU-A average launch power (max) to +3 dBm (page 160)

1000Base-PX-ONT-B maximum receive power changed to -7 dBm (page 164)
1000Base-PX-ONT-B receive sensitivity changed to -28 dBm (page 164)
1000Base-PX-ONU-B average launch power (min) to -2 dBm (page 166)
1000Base-PX-ONU-B average launch power (max) to +3 dBm (page 166)

Proposed Response *Response Status* **W**

ACCEPT IN PRINCIPLE. The power budget could be changed subject to the consensus of the group and a more detailed technical presentation on the issue; perhaps as part of the PON ad-hoc group

Cl **58** *SC* **58.4** *P* **184** *L* **15** # **483**

Swanson, Steve — Corning Incorporated

Comment Type **E** *Comment Status* **D** *DUP 489*

Formatting.

SuggestedRemedy

"0.5 to 20 km" should read "0.5 to 20000" and the heading should read "Minimum range (m)"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

There was a comment at the last meeting proposing the use of km where appropriate, see comment 489

Cl **58** *SC* **58.4** *P* **184** *L* **4** # **126**

Koji, Shino — NTT

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

"1000BASE-PX" should be changed into "1000BASE-PX Type B"

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **58** *SC* **58.4.1** *P* **185** *L* **19** # **908**

Tom Murphy — Infineon

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

The receiver sensitivity for the Type B OLT is -29 dBm. This will be a difficult value to achieve, even with APDs. This point is detailed in a presentation prepared by Frank Effenberger

SuggestedRemedy

For the Upstream Type B link, increase the Tx power by 1 dB, the max Tx power by 1 dB and reduce the OLT Rx sensitivity by 1 dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Decision to be made after the presentation

Cl **58** *SC* **58.4.1** *P* **185** *L* **25** # **877**

Tom Murphy — Infineon

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

No value for OFF power of OLT Tx

SuggestedRemedy

Insert -30 dBm as OFF power

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Value needed. Actual number to be debated at the meeting

Cl **58** *SC* **58.4.1** *P* **185** *L* **27** # **608**

Bemmel, Vincent — Alloptic

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

An extinction ratio of 9dB is more realistic. Consistent with 1000Base-LX (8802-3-2000, Table 38-7)

SuggestedRemedy

Change Extinction ratio values from 6dB to 9dB

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The original value of 9 dB was changed to 6 dB at the July meeting. Lower ER has many advantages. (see comment 334 from July)

Cl **58** *SC* **58.4.1** *P* **185** *L* **32** # **610**

Bemmel, Vincent — Alloptic

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

Based on current technology, 100 ns (instead of 16ns) is a more realistic target value for T_on(max) and T_off(max)

SuggestedRemedy

Change target values for T_on(max) and T_off(max) to 100ns

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

There will be presenatation and discussions on this topic at the November meeting

Cl **58** *SC* **58.4.1** *P* **185** *L* **35** # **878**
Tom Murphy Infineon

Comment Type **E** *Comment Status* **D**
Optical return loss tolerance values don't match with Table 58.7

SuggestedRemedy
Change 15 to 12 dB, both entries

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **58** *SC* **58.4.1.1** *P* **185** *L* **45** # **127**
Koji, Shino NTT

Comment Type **E** *Comment Status* **D**
The type is wrong

SuggestedRemedy
Change to Type B

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **58** *SC* **58.4.1.1** *P* **185** *L* **46** # **879**
Tom Murphy Infineon

Comment Type **E** *Comment Status* **D**
RMS table not in correct location

SuggestedRemedy
Reunite Table 58-12 with the text of 58.4.1.1

Proposed Response *Response Status* **W**
PROPOSED REJECT.

Want to float tables at this point

Cl **58** *SC* **58.4.1.1** *P* **186** *L* **31** # **880**
Tom Murphy Infineon

Comment Type **E** *Comment Status* **D** *DUP 876*
It would be useful to know to RMS width for 1490 nm as this is the values most designers will initially consider

SuggestedRemedy
Insert further line into table with 1490 nm RMS values

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

See response to 876

Cl **58** *SC* **58.5** *P* **186** *L* **37** # **484**
Swanson, Steve Corning Incorporated

Comment Type **E** *Comment Status* **D**
Consistent terminology.

SuggestedRemedy
Change "Worst-case" to "Illustrative" consistent with Clause 60.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Will change as appropriate

Cl **58** *SC* **58.6** *P* **187** *L* **20** # **612**
Bemmel, Vincent Alloptic

Comment Type **T** *Comment Status* **D**
Based on current technology, 1400 nsec (instead of 50) is a more realistic target value for T_optical_rec_recovery(max)

SuggestedRemedy
Change the target value of T_optical_rec_recovery(max) from 50 ns to 1400 ns (instead of 50)

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

There will be presenatation and discussions on this topic at the November meeting

Cl **58** *SC* **58.7** *P* **187** *L* **48** # **881**
Tom Murphy Infineon

Comment Type **E** *Comment Status* **D**
There is no high lighted text in table 58-16, or table 58-17

SuggestedRemedy
Remove this sentence

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **58** *SC* **58.8** *P* **188** *L* **49** # **882**

Tom Murphy Infineon

Comment Type **T** *Comment Status* **D** *DUP 871*

The majority of BiDi devices use a pigtail construction. Hence, a patch cord is not needed for this measurement

SuggestedRemedy

All optical measurements shall be made through a short patch cable or pigtail, between 0.5 and 5 m in length

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Same issue. See response to 871

Cl **58** *SC* **58.9.1** *P* **189** *L* **35** # **883**

Tom Murphy Infineon

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

The language here is such that one has the opinion that column 2 is the only viable option. This is not the case in reality.

SuggestedRemedy

Remove the sentence "However,. ... partition noise". If the spectral width is kept below the limits of column 3. epsilon will not exceed 0.115 and the chromatic dispersion penalty is expected to be below 2 dB when all link parameters are simultaneously at worst case values.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need more specific wording

Cl **58** *SC* **58.9.11** *P* **190** *L* **36** # **292**

Radcliffe, Jerry Hatteras Networks

Comment Type **T** *Comment Status* **D** *DUP 293*

If it is agreed to remove the stressed receiver sensitivity test then this test section is no longer needed

SuggestedRemedy

Remove section 58.9.11

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Changes will be made based on the decision reached in Clause 59. See 293

Cl **58** *SC* **58.9.4** *P* **189** *L* **54** # **485**

Swanson, Steve Corning Incorporated

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

Incomplete reference.

SuggestedRemedy

Repeat text from 60.8.5 since many clause clause have identical text.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The bulk of the test procedure will be retained in C60 to allow for easier maintenance and consistancy within the EFM clauses

Cl **58** *SC* **58.9.9** *P* **190** *L* # **695**

Diab, Wael William Cisco Systems

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

TDP is the appropriate method for evaluating PMDs. Nonetheless, given the speed of these PMDs and the short-term desire to implement solutions (as expressed in the original proposal presentations), an informative that relates traditional measurement techniques to TDP may help bridge the gap.

SuggestedRemedy

Specify an informative correlation between the TDP measurements and the eye mask and/or the jitter numbers

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need more work

Cl **58** *SC* **59.2.4** *P* **179** *L* **54** # **474**

Swanson, Steve Corning Incorporated

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

Missing text.

SuggestedRemedy

Add the following sentence:

"This standard imposes no response time requirements on the generation of the SIGNAL_DETECT paramter."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

At the last meeting, the MPCP group were requested to submit requirements for a SD for burst mode, see comment 58 from New Orleans. When the later has been addressed, your comment may be implemented

Cl **58** *SC* **Table 58-13** *P* **187** *L* **15** # **291**
Radcliffe, Jerry Hatteras Networks

Comment Type **T** *Comment Status* **D** *DUP 293*

Stressed Receiver Sensitivity is not an appropriate test for a single mode system.

SuggestedRemedy

Remove the receiver stressed sensitivity requirement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Changes will be made based on the decision reached in Clause 59. See 293

Cl **58** *SC* **Table 58-3,58-5** *P* *L* # **867**
Tomoaki, Masuta NEC Corporation

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

Need a value for xx dBm for FAIL mode.

SuggestedRemedy

We propose -35dBm for ONU Type-A and B, which is 10dB down from the receive sensitivity (-25dBm).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The comment seems technical in nature as the value choosen would requires technical discussion. A possible starting point for discussion would be -45 dBm

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Cl **58** *SC* **Table 58-7** *P* **182** *L* # **868**
Tomoaki, Masuta NEC Corporation

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

Why is the Optical return loss tolerance (max) for Type-A different from that for Type-B.

SuggestedRemedy

The Optical return loss tolerance (max) for Type-A should be 15dB for OLT and ONU as the same vaule as Type-B.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The decision of the July meeting was to set the value for both PMDs to 12 dB.

Cl **58** *SC* **Table 58-8,58-12** *P* **183** *L* **1** # **621**
Nojima, Kazuhiro Matsushita Communic

Comment Type **T** *Comment Status* **D** *DUP 883*

There are two specifications(@epsilon=0.168 and 0.115) in table 58-8,58-12(page 186).
It is not clear which should be chosen.
Only one specification should be defined in table 58-8,58-12.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The two epsilon values are explained in 58.9.1. Would a reference to this in the text here suffice to clarify? Another comment (883) will also address the text associated with this table.

Cl **58** *SC* **Table 58-9** *P* **183** *L* **46** # **290**
Radcliffe, Jerry Hatteras Networks

Comment Type **T** *Comment Status* **D** *DUP 293*

Stressed Receiver Sensitivity is not an appropriate test for a single mode system.

SuggestedRemedy

Remove the receiver stressed sensitivity requirement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Changes will be made based on the decision reached in Clause 59. See 293

Cl **58** *SC* **Table 58-9** *P* **183** *L* **52** # **620**
Onishi, Kazumi Oki Electric Industry C

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

The definitions for the variables, T_dyn_recovery and T_lvl_recovery are not shown in the footnotes under the Table58-9(pp.183) and Table58-13(pp.187).

SuggestedRemedy

Add the following sentence to the footnotes under the Table58-9 and Table58-13.

where "T_dyn_recovery" denotes "dynamic sensitivity recovery time" that is necessary to prepare for the next burst arrival after a precedent burst, and "T_lvl_recovery" denotes "level recovery time" that is for restoring correct logic levels.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The text below the table is intended only for clarification while burst-mode discussions continue. Eventually a single value for receiver recovery will be specified, how this is split between the two effects will not be specified.

Cl **58** *SC* **Table 58-9,13** *P* *L* # **869**

Tomoaki, Masuta NEC Corporation

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

We should consider that "multiple reflection" may occur between an ONU and OLT. In this case this "multiple reflection" may be regarded as a noise to the received signal and cause the penalty for optical receiving sensitivity.

SuggestedRemedy

We propose to add a specification for "tolerance to the reflected optical power" to OLT and ONU receive characteristic.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Loss of receiver sensitivity due to this type of reflection is covered in the link model by Interferometric Noise Penalty. This and connector and PMD return specifications eliminate the need for a tolerance to the reflected optical power specification

Cl **58** *SC* **Table 58-9,58-13** *P* **183** *L* # **870**

Tomoaki, Masuta NEC Corporation

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

The current receive sensitivity for OLT is very hard. Considering a power penalty of burst-mode operation, the sensitivity of OLT should be relaxed.
So the output power of ONU should be increased by 1dB and the receive sensitivity of OLT should be increased by 1dB.

SuggestedRemedy

As a result
1000Base-PX-ONU-Type-A average launched power (MAX) changed to +3dBm
1000Base-PX-ONU-Type-A average launched power (min) changed to -2dBm
1000Base-PX-OLT-Type-A receive sensitivity changed to -25dBm
1000Base-PX-OLT-Type-A receive overload changed to -2dBm

1000Base-PX-ONU-Type-B average launched power (MAX) changed to +3dBm
1000Base-PX-ONU-Type-B average launched power (min) changed to -2dBm
1000Base-PX-OLT-Type-B receive sensitivity changed to -28dBm
1000Base-PX-OLT-Type-B receive overload changed to -7dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

There will be a technical presentation at the November meeting dealing with this comment. However, the presentation addresses only Type B links. In conclusion to the presentation, your changes may be discussed

Cl **58** *SC* **Table58-2** *P* **180** *L* **13** # **121**

Koji, Shino NTT

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

"Input_optical_power >= XXdBm" should be changed into "Input_optical_power <= XXdBm"

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **58** *SC* **Table58-3** *P* **180** *L* **34** # **122**

Koji, Shino NTT

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

"Input_optical_power >= XXdBm" should be changed into "Input_optical_power <= XXdBm"

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **58** *SC* **Table58-4** *P* **181** *L* **6** # **123**

Koji, Shino NTT

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

"Input_optical_power >= XXdBm" should be changed into "Input_optical_power <= XXdBm"

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **58** *SC* **Table58-5** *P* **181** *L* **21** # **124**

Koji, Shino NTT

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

"Input_optical_power >= XXdBm" should be changed into "Input_optical_power <= XXdBm"

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **1** *P* *L* **7** # **36**
Tatum, Jim Honeywell

Comment Type **E** *Comment Status* **D**
Clause yy not valid

SuggestedRemedy
Replace with appropriate clause number

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Agreed; what is the proper reference?

Cl **59** *SC* **1.2** *P* *L* **30** # **37**
Tatum, Jim Honeywell

Comment Type **E** *Comment Status* **D**
Text is needed for sections 59.1.1 and 59.1.3

SuggestedRemedy
Are these sections really needed?

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

text is needed for 59.1.2 and 59.1.3 but what is the proposed text?

Cl **59** *SC* **1.4** *P* *L* **39** # **38**
Tatum, Jim Honeywell

Comment Type **E** *Comment Status* **D**
PMD should be plural

SuggestedRemedy
replace with PMDs

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **59** *SC* **1.4** *P* *L* **54** # **39**
Tatum, Jim Honeywell

Comment Type **E** *Comment Status* **D**
Is clause 36 the correct reference?

SuggestedRemedy
replace with approporiate clause number

Proposed Response *Response Status* **W**
PROPOSED REJECT.

it is believed that Clause 36 is the correct reference

Cl **59** *SC* **12.2** *P* *L* # **57**
Tatum, Jim Honeywell

Comment Type **TR** *Comment Status* **D**
Table 59-15 missing values

SuggestedRemedy
values should be consistent with table 59-11. Table 59-11 needs to add a column for the sperate OLT and ONU cases.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

propose 6.2 dB for both upstream and downstream channels

Cl **59** *SC* **12.2** *P* *L* # **56**
Tatum, Jim Honeywell

Comment Type **T** *Comment Status* **D**
Figure 59-7 does not show cable connections for BX and SMF EX case

For EX MMF case, it calls out SMF in figure 59-7

SuggestedRemedy
Add conections to the BX and SMF EX case.

Change SMF to MMF is 59-7, replace "Jujmper Cable" with "ofset launch patch cord"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **59** *SC* **13.1** *P* *L* # **58**
Tatum, Jim Honeywell

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

Taqble 59-16 missing value for max attenuation at 1550nm. Should be specified at 1490nm.

SuggestedRemedy

Add values per fiber manufacturers recommendation

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

propose 0.4b or 0.5c dB/km (same as 1310nm values)

Cl **59** *SC* **13.1** *P* **215** *L* **11** # **892**
John George OFS

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

Additional clarification of fiber types needed to assist user

SuggestedRemedy

Harmonize with clauses 58 and 60 by inserting "(dispersion un-shifted single mode)" after "B1.1" and "(low water peak single mode)" after "B1.3".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **14** *P* *L* # **60**
Tatum, Jim Honeywell

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

Pics are riddled with refernces to clause 38, and its associated sewctions. Also refernces to 1000BASE-LX and 1000BASE-SX.

Jitter specs are no longer normative

SuggestedRemedy

Replace and edit as appropriate.

Remove jitter reference from PICS

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

PICs need formal review by optics team. 59.14.4.5, Jitter specifications to be removed.

Cl **59** *SC* **14.1** *P* *L* **12** # **59**
Tatum, Jim Honeywell

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

Is clause 21 a valid reference?

SuggestedRemedy

Replacw as needed

Proposed Response *Response Status* **W**

PROPOSED REJECT.

it is believed that Clause 21 is the correct reference

Cl **59** *SC* **2.1** *P* *L* **19** # **40**
Tatum, Jim Honeywell

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

line starting with "TP1..." is redundant with text in next paragraph

SuggestedRemedy

delete line starting with "TP1..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **2.4** *P* *L* **15** # **41**
Tatum, Jim Honeywell

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

need reference to table 59-2 as well as 59-1

SuggestedRemedy

add reference to 59-1. This may be irrelevant based on resolution to next comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

add the following text to the end of the first sentence:
for 1000BASE-EX and Table 59-2 for 1000BASE-BX.

Cl **59** *SC* **2.4.1** *P* *L* **40** # **42**

Tatum, Jim Honeywell

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

Can 59.2.4.1 and 59.4.2.2 be combined into a single section, and combine tables 59-1 and 59-2 into a single table.

SuggestedRemedy

Combine sections 59.2.4.1&2 into a single section, and combine tables 59-1 and 59-2 into a single table. Fisrst colume is signal detect value, then a colum for each EX, and BX-ONU and BX-OLT. three rows which define values for SD of FAIL, OK, and Unspecified.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **3.1** *P* *L* **12** # **44**

Tatum, Jim Honeywell

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

value in table is "see"

SuggestedRemedy

note should be added reagarding the trade off between the spectral width and center wavelength.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

entry should read
See Table 59-5. Since this Table shows the trade off between spectral width and center wavelength, no note is needed.

Cl **59** *SC* **3.1** *P* *L* **41** # **43**

Tatum, Jim Honeywell

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

Note A should be anchored with table 59-4.

SuggestedRemedy

Move text.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

since the last sentence of paragraph 1 states essentially the same thing, it is proposed to delete note a in Table 59-4

Cl **59** *SC* **3.1.1** *P* *L* **35** # **45**

Tatum, Jim Honeywell

Comment Type **E** *Comment Status* **D** *DUP 445*

reference to 59-4 wrong

SuggestedRemedy

replace with 59-5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See 445

Cl **59** *SC* **4.1** *P* *L* # **47**

Tatum, Jim Honeywell

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

Table 59-8, values for RMS spectral width for OLT and ONU should be replaced with notes for trade off for RMS width and center wavelength.

SuggestedRemedy

Use values in Table 59-5 for ONU side, and leave OLT side as fixed, but value needs to be reduced to o.3nm to ensure link robustness.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Defer to optics team for discussion in Kauai

Cl **59** *SC* **4.1** *P* *L* # **46**

Tatum, Jim Honeywell

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

Table 59-6 missing values for stress receive sensitivity and vertical eye closure limit

SuggestedRemedy

vlues need to be finalized by spreadsheet analysis

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

need proposed value

Cl **59** *SC* **5** *P* *L* # **48**
Tatum, Jim Honeywell

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

Table 59-10 is missing values for several values.

SuggestedRemedy

Power budgetr is 9dB
other values to be determeined by spreadsheet analysis

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

To be discussed further.

One proposal is an 8 dB power budget (based on changing the receiver sensitivity to -19), channel insertion loss of 4.57 dB, changing "link power penalties" to "allocation for penalties" and specifying 3.27 dB, and changing "unallocated margin in link budget" to "additional insertion loss" allowed at 0.16 dB.

Cl **59** *SC* **59** *P* **197** *L* **1** # **573**
Dawe, Piers Agilent

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

Not baseband, it's intensity modulated.

SuggestedRemedy

Delete "baseband".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59** *P* **197** *L* **1** # **570**
Dawe, Piers Agilent

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

Simplify the title following clause 60.

SuggestedRemedy

Physical Medium Dependent (PMD) sublayer and baseband medium, type 1000BASE-EX (Long Wavelength) and 1000BASE-BX (BiDirectional Long Wavelength)

Optionally add "10 km" somewhere in the title to distinguish it from 1000BASE-LX.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.1** *P* **198** *L* **7** # **578**
Dawe, Piers Agilent

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

MDIO Clause yy: if we go with the "45 registers through 22 interface" proposal, presumably a pure clause 45 implementation would be OK too.

SuggestedRemedy

Change yy to "22 or 45".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

let's pick a reference. See 36

Cl **59** *SC* **59.1** *P* **198** *L* **9** # **579**
Dawe, Piers Agilent

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

To help the reader (and ourselves, later), add a new Table 1 following clause 60. We can make it even more useful by adding a further column.

SuggestedRemedy

Add a new Table 1 following clause 60 (but use range, 10km not range (meters) 10000). Add another column "Maximum total channel loss". To avoid too much detail so early, just have one "MMF" entry with ranges or "up to ..." values. Add footnote "At the nominal wavelength".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Clause 59-3 contains Table 59-3 but Clause 60 has moved that up front with some additional information. Propose modifying Table 59-3 and moving it to the end of 59.1.

Cl **59** *SC* **59.1.4** *P* **198** *L* **39** # **865**
Thatcher, Jonathan World Wide Packets

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

See rememdy

SuggestedRemedy

Change to "1000BASE-EX"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.1.4** *P* **198** *L* **41** # **864**
Thatcher, Jonathan World Wide Packets

Comment Type **T** *Comment Status* **D**
See remedy

SuggestedRemedy
Change "PMA entities." to "with the PMA."

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE. clarification needed on the proposed remedy

Cl **59** *SC* **59.10** *P* **199** *L* # **99047**
Tatum, Jim Honeywell

Comment Type **E** *Comment Status* **D** *D1.0 #625*
Add "transmitter" after "optical on line 3

SuggestedRemedy
Add "transmitter" after "optical on line 3

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Defer to optics team for discussion in Kauai; proposed resolution unclear.

Cl **59** *SC* **59.10.3** *P* **213** *L* **12** # **849**
Thatcher, Jonathan World Wide Packets

Comment Type **E** *Comment Status* **D**
Word "environment" hanging.

SuggestedRemedy
Remove?

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Delete environment from line 13

Cl **59** *SC* **59.12** *P* **213** *L* **32** # **464**
Swanson, Steve Corning Incorporated

Comment Type **E** *Comment Status* **D**
Clarification needed.

SuggestedRemedy
Add the following text to the second sentence:

"...for multimode cabling;" after "Method B"
"...for single-mode cabling." after Method A-1.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **59** *SC* **59.12.1** *P* **213** *L* **43** # **467**
Swanson, Steve Corning Incorporated

Comment Type **E** *Comment Status* **D**
SMF incorrectly labelled.

SuggestedRemedy
"SMF" should read B.1.1, B.1.3 SMF

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **59** *SC* **59.12.1** *P* **213** *L* **44** # **465**
Swanson, Steve Corning Incorporated

Comment Type **T** *Comment Status* **D**
Wavelength entries are incorrect for multimode fiber.

SuggestedRemedy
"1310" should read "1300" for both multimode entries.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **59** *SC* **59.12.1** *P* **213** *L* **45** # **848**
Thatcher, Jonathan World Wide Packets

Comment Type **T** *Comment Status* **D**
Where is the "Channel Insertion Loss" in Table 59-14 (other than the title)?

SuggestedRemedy
Add C.I.L and the specifications

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

reformat Table 59-14 consistent with Table 59-10

Cl **59** *SC* **59.12.1** *P* **213** *L* **49** # **466**
Swanson, Steve Corning Incorporated

Comment Type **T** *Comment Status* **D**
Inconsistent format for operating distance.

SuggestedRemedy
Operating distance should read:

0.5-10000 for SMF
0.5-500 for 62.5 and 50um

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Alternately we could spec max operating distance in the table

Cl **59** *SC* **59.12.2** *P* **214** *L* **1** # **468**
Swanson, Steve Corning Incorporated

Comment Type **E** *Comment Status* **D** *DUP 56*
Figure 59-7 incorrectly labelled

SuggestedRemedy
First instance of "SMF Cable" should read "MMF Cable"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

See comment 56

Cl **59** *SC* **59.13.1** *P* **215** *L* **12** # **847**
Thatcher, Jonathan World Wide Packets

Comment Type **T** *Comment Status* **D** *DUP 846*
Is this subclause really needed? Can't we reference an existing subclause?

SuggestedRemedy
Simplify, redundancy bad. Remember that this is one standard.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

For now EFM clauses should be self contained. Can add note and decide on deleting near publication

Cl **59** *SC* **59.13.1** *P* **215** *L* **21** # **469**
Swanson, Steve Corning Incorporated

Comment Type **T** *Comment Status* **D**
Missing Table entry.

SuggestedRemedy
Include fiber cable attenuation at 1550 nm:

0.4b or 0.5c

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Cl **59** *SC* **59.13.4** *P* **216** *L* **29** # **850**
Thatcher, Jonathan World Wide Packets

Comment Type **T** *Comment Status* **D**
More @#$(redundancy. There is no reason to have people read this word by word to see if they can find a difference with the patch cord in Cl 38 when there is no difference.

SuggestedRemedy
Just reference CL 38.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

For now EFM clauses should be self contained. Can add note and decide on deleting near publication

Cl **59** *SC* **59.13.4** *P* **217** *L* **12** # **569**

Dawe, Piers Agilent

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

This patchcord is only an example; no connector wars!

SuggestedRemedy

Change "shall be" to "is" (4 times). Change "The keying of the SC duplex" to "The keying of this duplex".
Delete the PICS associated with these "shall"s.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.2.1** *P* **199** *L* **10** # **885**

Tom Murphy Infineon

Comment Type **T** *Comment Status* **D** *DUP 871*

The majority of BiDi devices use a pigtail construction. Hence, a patch cord is not needed for this measurement.

SuggestedRemedy

...is defined as the output end of a patch cord or pigtail (TP2),...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 871

Cl **59** *SC* **59.2.4** *P* **200** *L* **15** # **440**

Swanson, Steve Corning Incorporated

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

Reference for signal detect is incomplete.

SuggestedRemedy

At the end of the first sentence in paragragh 2, add: "...for 1000BASE-EX and Table 59-2 for 1000BASE-BX."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.2.4** *P* **200** *L* **16** # **925**

Tom Mathey Independent

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

If this PMD is to be used by EPON (OLT, ONU), then there must be a response time requirement on the generation of the SIGNAL_DETECT parameter in order for the EPON to even function.

SuggestedRemedy

Add response time parameter.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

There is no requirement for BX to interoperate with PX.

Perhaps this applies to clause 58. Discussions regarding the required response time for SIGNAL_DETECT in Clause 58 for OLT-end receiver cannot take place until the task force has selected a policy regarding PON timing parameters. Please refer to bhatt_general_1_1102.pdf.

Cl **59** *SC* **59.2.4.1** *P* **200** *L* **30** # **866**

Thatcher, Jonathan World Wide Packets

Comment Type **E** *Comment Status* **D** *DUP 42*

Don't need both 59.2.4.1 and 59.2.4.2

SuggestedRemedy

Collapse into one subsection; collapse T59-1 and T59-2 into one table. Change width of table so that the "-" and the 30 stay together (both T59-1 and T59-2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

see 42.

Cl **59** *SC* **59.2.4.1** *P* **200** *L* **37** # **576**

Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D** *DUP 42*

Cramped table.

SuggestedRemedy

Take out the unnecessary carriage returns and shrink-wrap the whole table, and some others especially 59-2. Thanks!

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

see 42.

Cl **59** *SC* **59.2.4.1** *P* **200** *L* **41** # **574**

Dawe, Piers Agilent

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

Trying to harmonise signal detect limits towards -45 dBm. Note that this spec line is a lower bound for signal detect, making it lower does not force implementers to lower their signal detect levels - but they may like to, to allow ease of use of more sensitive receivers.

SuggestedRemedy

Find what existing commonplace legacy transceivers' OFF power actually is. Pick a number as near to -45 dBm as is compatible with not having many legacy parts raising false signal detects.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need to discuss the actual number. Need more data on existing parts.

Cl **59** *SC* **59.2.4.1** *P* **200** *L* **43** # **575**

Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D** *DUP 441*

Be precise about which sensitivity: the part's? the part's data sheet's? the standard's limit?

SuggestedRemedy

Change "Receive sensitivity" to "Receive sensitivity in Table 59-6". Similarly in table 59-2, change to "Receive sensitivity in Table 59-9"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 441

Cl **59** *SC* **59.2.4.1** *P* **200** *L* **45** # **441**

Swanson, Steve Corning Incorporated

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

Consistent with Clause 60, add clarification to receive sensitivity in Table 59-1.

SuggestedRemedy

After receive sensitivity in Table 59-1, add "(max) in Table 59-6."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.2.4.2** *P* **201** *L* **6** # **577**

Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D** *DUP 574*

Trying to harmonise signal detect limits towards -45 dBm. Note that this spec line is a lower bound for signal detect, making it lower does not force implementers to lower their signal detect levels - but they may like to, to allow ease of use of more sensitive receivers. Legacy parts would be less of an issue for 1000BASE-BX than 1000BASE-LX.

SuggestedRemedy

-45 dBm.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 574

Cl **59** *SC* **59.2.4.2** *P* **201** *L* **8** # **442**

Swanson, Steve Corning Incorporated

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

Consistent with Clause 60, add clarification to receive sensitivity in Table 59-2.

SuggestedRemedy

After receive sensitivity, add "(max) in Table 59-9."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **59** *SC* **59.3** *P* **201** *L* **19** # **829**

Thatcher, Jonathan World Wide Packets

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

Reference to 59.14 should be 59.13

SuggestedRemedy

See comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.3** *P* **201** *L* **31** # **443**
Swanson, Steve Corning Incorporated

Comment Type **E** *Comment Status* **D**
Clarify singlemode fiber specified.

SuggestedRemedy
Add "Type B.1.1, B.1.3" before "SMF" under fiber type in Table 59-3.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **59** *SC* **59.3.1** *P* **201** *L* **47** # **444**
Swanson, Steve Corning Incorporated

Comment Type **E** *Comment Status* **D**
Redundant text.

SuggestedRemedy
Delete text in lines 47-49.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

delete text in lines 47-49. The text listed here is really a footnote to Table 59-4 but is redundant with the text in 59.3.1 and is therefore not needed.

Cl **59** *SC* **59.3.1** *P* **201** *L* **47** # **830**
Thatcher, Jonathan World Wide Packets

Comment Type **E** *Comment Status* **D** *DUP 444*
Remove "a."

SuggestedRemedy
See comment

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

See 444

Cl **59** *SC* **59.3.1** *P* **202** *L* **12** # **445**
Swanson, Steve Corning Incorporated

Comment Type **E** *Comment Status* **D**
Missing entry in Table 59-4.

SuggestedRemedy
For RMS spectral width, enter "See Table 59-5."

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **59** *SC* **59.3.1** *P* **202** *L* **12** # **831**
Thatcher, Jonathan World Wide Packets

Comment Type **T** *Comment Status* **D** *DUP 445*
See "Table 59-5"

SuggestedRemedy
See comment

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

See 445

Cl **59** *SC* **59.3.1** *P* **202** *L* **16** # **580**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D**
Launch power on SMF should be higher.

SuggestedRemedy
-9.5 dBm. No need to change the MMF launch powers.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **59** *SC* **59.3.1** *P* **202** *L* **18** # **586**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D** *DUP 574*
Trying to harmonise Tx OFF power limits towards -45 dBm (see another comment for table 59-1).

SuggestedRemedy
Find what in-production transceivers' OFF power actually is. Pick a number as near to -45 dBm as is compatible with not having many legacy parts raising false signal detects. Must be same or lower than the new number for table 59-1.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

See 574

Cl **59** *SC* **59.3.1** *P* **203** *L* **1** # **581**
Dawe, Piers Agilent

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

I have graphs to illustrate table 59-5. But people prefer tables for normative specs, they are precise.

SuggestedRemedy

Add illustrative graphs. Don't delete the tables.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.3.1.1** *P* **202** *L* **32** # **446**
Swanson, Steve Corning Incorporated

Comment Type **E** *Comment Status* **D** *DUP 583*

Redundant text.

SuggestedRemedy

Delete 59.3.1.1 RMS spectral width. dangling subcluase that is already referenced in Table 59-4.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See 583

Cl **59** *SC* **59.3.1.1** *P* **202** *L* **34** # **583**
Dawe, Piers Agilent

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

Add some clarification

SuggestedRemedy

Add ". intermediate spectral limits may be found by interpolation. It should be noted that these limits, particularly the wider ones, are not in themselves adequate to guard against an excessive dispersion penalty, and the TDP requirements must also be met. See 59.9.9."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.3.1.1** *P* **202** *L* **34** # **582**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D** *DUP 445*

Wrong table

SuggestedRemedy

59-5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See 445

Cl **59** *SC* **59.3.1.1** *P* **202** *L* **34** # **832**
Thatcher, Jonathan World Wide Packets

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

Maximum spectral width "vs Center wavelength" for ... is shown in "Table 59-5"

SuggestedRemedy

Fix freqency and reference per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.4** *P* **203** *L* **47** # **452**
Swanson, Steve Corning Incorporated

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

Correct Table entry and move Table to coincide with text in 59.4.

SuggestedRemedy

Fiber Type column should read "Type B1.1, B1.3 SMF"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.4.1** *P* **203** *L* **15** # **447**
Swanson, Steve Corning Incorporated

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

Correct Table entry.

SuggestedRemedy

"3.5" should read "3.50"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

RMS spectral width should be specified to a precision of two decimal digits. Make this change in all epsilon tables. For example, in Table 59-5, change 1.9 to 1.90, etc.

Cl **59** *SC* **59.4.1** *P* **203** *L* **21** # **448**
Swanson, Steve Corning Incorporated

Comment Type **T** *Comment Status* **D**
Table entry incorrect.

SuggestedRemedy
"1.47" should read "3.06" in Table 59-5.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Value should match Epsilon curves

Cl **59** *SC* **59.4.1** *P* **203** *L* **22** # **449**
Swanson, Steve Corning Incorporated

Comment Type **T** *Comment Status* **D**
Table entry incorrect.

SuggestedRemedy
"2.5" should read "2.58" in Table 59-5.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Value should match Epsilon curves

Cl **59** *SC* **59.4.1** *P* **203** *L* **34** # **834**
Thatcher, Jonathan World Wide Packets

Comment Type **T** *Comment Status* **D**
Missing "(min)" from lines 35, 36, 38, 40

SuggestedRemedy
Fix per comment

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **59** *SC* **59.4.1** *P* **203** *L* **35** # **450**
Swanson, Steve Corning Incorporated

Comment Type **T** *Comment Status* **D**
Receive sensitivity not in line with Clause 38 and stated power budgets.

SuggestedRemedy
Change receive sensitivity to -19 dBm

Proposed Response *Response Status* **W**
PROPOSED REJECT. This point was reviewed at the time of selecting baseline proposals. The group accepted the specifications of the de facto industry practice that supports 10 km link length and -20 dBm sensitivity.

Cl **59** *SC* **59.4.1** *P* **203** *L* **38** # **451**
Swanson, Steve Corning Incorporated

Comment Type **T** *Comment Status* **D** *DUP 46*
Missing entries in Table 59-6.

SuggestedRemedy
Include recommended values for stressed receiver sensitivity and vertical eye closure in Table 59-6.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Need final values. See comment 46

Cl **59** *SC* **59.4.1** *P* **203** *L* **4** # **833**
Thatcher, Jonathan World Wide Packets

Comment Type **T** *Comment Status* **D** *DUP 583*
1. RMS specral width is a "(max)" as is RMS... to acheive epsilon..."
2. Center wavelengths should be like: "1260 <= Lambda < 1270" up to 1350 which would be "1350 <= Lambda <= 360" in Table 59-5
3. Remove row for 1360
4. Center the specs in the columns

SuggestedRemedy
Fix per comment

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

See 583. (Also 581)

Cl **59** *SC* **59.4.1** *P* **204** *L* **1** # **453**

Swanson, Steve — Corning Incorporated

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

Several Entires in Tables 59-8 and 59-9 can be straddled.

SuggestedRemedy

Reformat Table and straddle columns with identical entries.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.4.1** *P* **204** *L* **16** # **587**

Dawe, Piers — Agilent

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

Trying to harmonise Tx OFF power limits towards -45 dBm (see another comment for table 59-2). Legacy parts would be less of an issue for 1000BASE-BX than 1000BASE-LX.

SuggestedRemedy

-45 dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Actual value can be debated at the meeting

Cl **59** *SC* **59.4.1** *P* **204** *L* **9** # **588**

Dawe, Piers — Agilent

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

Use the same spectral limits for 1000BASE-BX upstream as for 1000BASE-EX.

SuggestedRemedy

Replace spectral width "2" with "See table 59-5". Change title of table 59-5 to "1000BASE-X 1310 nm band 10 km spectral limits" or "1000BASE-EX and 1000BASE-BX spectral limits"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **59** *SC* **59.4.1** *P* **204** *L* **9** # **589**

Dawe, Piers — Agilent

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

The same spectral limits for 1000BASE-BX downstream and for 1000BASE-PX downstream should be the same.

SuggestedRemedy

Suggest replace spectral width "0.4" with "See table 59-5". Add another row(s) to the table, to agree with Clause 58. Consider removing the table from one or other clause and referring across.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

May be a good to have but we should check if there are any other implications

Cl **59** *SC* **59.4.2** *P* **204** *L* **39** # **835**

Thatcher, Jonathan — World Wide Packets

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

Talbe 59-9 missing "(min)" from lines 39, 41, 43, 45

SuggestedRemedy

Fix per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.5** *P* **204** *L* **52** # **454**

Swanson, Steve — Corning Incorporated

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

Make 59 consistent with 60.

SuggestedRemedy

Replace "Worst-case" with "Illustrative" in title (4 places).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.5** *P* **205** *L* **7** # **455**

Swanson, Steve — Corning Incorporated

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

No entries for SMF in Table 59-10

SuggestedRemedy

Add the following entries:

Link power budget 8.0 dB
Channel insertion loss 4.57 dB
Allocation for penalties 3.27 dB
Additional insertion loss allowed 0.16 dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Values needed per power calculation from spreadsheer and baseline and they need to be adjusted per group discussion on harmonization of channel insertion loss values across Clauses 58, 59 and 60.

Cl **59** *SC* **59.5** *P* **205** *L* **8** # **836**

Thatcher, Jonathan — World Wide Packets

Comment Type **TR** *Comment Status* **D** *DUP 857*

We should have consistent power budgets between 100Mb/s, 1Gb/s and possibly even 10 Gb/s. Need to reference a single set of fiber specifications for 10km, P2P fiber plants.

SuggestedRemedy

Minimally, need both BIDI (100 Mb and 1 Gb) using the same fiber plant specifications and both dual fibers (100 Mb and 1 Gb) using the same fiber plant specification.

Ideally, BIDI's should be the same fiber specification as the dual fibers (meaning that a BIDI should work on a dual fiber plant).

It would be wonderful if this could be true for 10G dual fiber as well.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

To be discussed with general fiber plant discussion.

More specific remedy would be apprieciated in TR comment.

Cl **59** *SC* **59.6** *P* **205** *L* **24** # **837**

Thatcher, Jonathan — World Wide Packets

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

Table 59-11: there should be specifications for both 1310 and 1550 nm.

SuggestedRemedy

Add another SMF column. ID one as 1310, and the other as 1550.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.6** *P* **205** *L* **33** # **456**

Swanson, Steve — Corning Incorporated

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

Missing entries in Table 59-11.

SuggestedRemedy

Add the following entries in Table 59-11:

Channel insertion loss 6.2 dB
Allocation for penalties 3.2 dB
Additional insertion loss allowed 1.6 dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Values needed per power calculation from spreadsheet and baseline, and they need to be adjusted per group discussion on harmonization of channel insertion loss values across Clauses 58, 59 and 60.

Cl **59** *SC* **59.8** *P* **206** *L* **11** # **839**

Thatcher, Jonathan — World Wide Packets

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

Tables 59-12 and 59-13: why aren't TP2 and TP3 specified the same way Clause 60 is, using TDP?

There is no reason to have different specification means in EFM P2P

SuggestedRemedy

Use consistent specification methods

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Will discuss further at meeting.

Cl **59** *SC* **59.8** *P* **206** *L* **8** # **838**

Thatcher, Jonathan — World Wide Packets

Comment Type **TR** *Comment Status* **D** *DUP 50*

TP1 and TP4 in Tables 59-12 & 59-13 should be the same as 1000BASE-LX.

SuggestedRemedy

Make it so.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.8.9** *P* **209** *L* # **697**

Diab, Wael William — Cisco Systems

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

TDP is the appropriate method for evaluating PMDs. Nonetheless, given the speed of these PMDs and the short-term desire to implement solutions (as expressed in the original proposal presentations), an informative that relates traditional measurement techniques to TDP may help bridge the gap.

SuggestedRemedy

Specify an informative correlation between the TDP measurements and the eye mask and/or the jitter numbers

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need more work

Cl **59** *SC* **59.9** *P* **206** *L* **41** # **887**

Tom Murphy — Infineon

Comment Type **T** *Comment Status* **D** *DUP 871*

The majority of BiDi devices use a pigtail construction. Hence, a patch cord is not needed for this measurement

SuggestedRemedy

All optical measurements shall be made through a short patch cable or pigtail, between 0.5 and 5 m in length

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 871

Cl **59** *SC* **59.9.1** *P* **206** *L* **53** # **840**

Thatcher, Jonathan — World Wide Packets

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

1. Not clear if epsilon should be normative or informative.
2. Use greek letter instead of "e"
3. What does "10-3 times the signaling speed" mean? 10e3?
4. Pag 207, line 1: what does "speed(59-x)" mean?

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Will use a greek letter (epsilon) for epsilon. Epsilon is informative; rms spectral width is normative. The scalar constant is 0.001 when signaling speed is defined in Gbaud and total dispersion is in picoseconds. The reference to (59-x) is a typo and will be removed.

Cl **59** *SC* **59.9.1** *P* **207** *L* **1** # **457**

Swanson, Steve — Corning Incorporated

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

Equation number misplaced and missing.

SuggestedRemedy

Add equation number right justified (59.1?)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Equation number 59-1 will apply to the transfer function given on page 207, line 51, in subclause 59.9.7.

Cl **59** *SC* **59.9.1** *P* **207** *L* **3** # **889**

Tom Murphy — Infineon

Comment Type **T** *Comment Status* **D** *DUP 871*

The language here is such that one has the opinion that column 2 is the only viable option. This is not the case in reality.

SuggestedRemedy

Remove the sentence "However,. ... partition noise". If the spectral width is kept below the limits of column 3. epsilon will not exceed 0.115 and the chromatic dispersion penalty is expected to be below 2 dB when all link parameters are simultaneously at worst case values.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 871

Cl **59** *SC* **59.9.13** *P* **210** *L* **21** # **844**

Thatcher, Jonathan World Wide Packets

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

Do we really need CPR if the offset patch cord does the trick?

SuggestedRemedy

Recommend removing CPR(but not offset patch cord for MMF).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **59** *SC* **59.9.14** *P* **210** *L* **27** # **845**

Thatcher, Jonathan World Wide Packets

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

If new method is good enough for 10 Gig and for C 60, why isn't it good enough here? This method is known to be difficult to implement.

SuggestedRemedy

Replace TP3 Rx conformance test with new method.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

To be debated at the next meeting

Cl **59** *SC* **59.9.14** *P* **210** *L* **29** # **567**

Dawe, Piers Agilent

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

Per D1.0 comment 627, we decided to use a clause 52 style stressed eye generator. The argument against the clause 38 style generator is that people don't like spending the time doing the iterative roll-your-own process of building and calibrating a home-made stressed eye generator. The argument against the clause 52 style generator is ... the same! An informative stressed sensitivity spec is probably a good thing for MMF use.

SuggestedRemedy

Debate again. One outcome is to reference what's in clause 60. If clause 60 doesn't need stressed sensitivity (because path distortion is expected to be low), copy all that stuff to here and let clause 58 refer to it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

For now we will keep all test procedures in Clause 60 for easier maintenance. An editor's note could be added in C60 to clarify that the MMF sections only apply to C59

Cl **59** *SC* **59.9.15** *P* **212** *L* **1** # **846**

Thatcher, Jonathan World Wide Packets

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

If this subclause is identical to clause 38, then just reference C38.

SuggestedRemedy

One of:
1. Put in editors note saying that this will be removed at final publication with reference to 38.6.12, or
2. Do it now.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

For now EFM clauses should be self contained. Can add note and decide on deleting near publication

Cl **59** *SC* **59.9.15** *P* **212** *L* **48** # **463**

Swanson, Steve Corning Incorporated

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

Incorrect reference.

SuggestedRemedy

Reference should read "IEC 60950."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.9.3** *P* **207** *L* **17** # **585**

Dawe, Piers Agilent

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

Following up the extinction ratio pattern change to allow near-service measurement, second thoughts about best practice wrt reflections. Anyone know the 20-bit binary sequence for I2?

SuggestedRemedy

Change "This .... reflections" to "This measurement is made with the node transmitting a repeating I2 pattern (binary xxxxxxxxxxxxxxxxxxxx)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Pattern could be referenced to the PMA clause for 1G

Cl **59** *SC* **59.9.4** *P* **207** *L* **20** # **841**
Thatcher, Jonathan World Wide Packets

Comment Type **TR** *Comment Status* **D** *DUP 458*

Subsection 59.9.4 has no meaning if there are no specifications in the tables.

SuggestedRemedy

Either put specs in tables, or remove subclause. Make consistent with C60.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 458

Cl **59** *SC* **59.9.4** *P* **207** *L* **21** # **458**
Swanson, Steve Corning Incorporated

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

Reference to Clause 60.

SuggestedRemedy

Repeat all text here since there are many subclause with common text between 58, 59, and 60.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The idea is to maintain common procedural text in one clause for easier maintenance

Cl **59** *SC* **59.9.6** *P* **207** *L* **34** # **459**
Swanson, Steve Corning Incorporated

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

Missing space after first sentence.

SuggestedRemedy

Add a space.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.9.7** *P* **208** *L* **30** # **843**
Thatcher, Jonathan World Wide Packets

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

Use same eye mask for C59 and C60

SuggestedRemedy

Replace with C60 eye mask. Interoperability with LX should not be an issue.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The two eye masks are different to account for the unbalanced nature of 4B5B signaling for C60.

Cl **59** *SC* **59.9.7** *P* **208** *L* **5** # **842**
Thatcher, Jonathan World Wide Packets

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

Line 5: put spaces into the forumla; hard to read
Line 20: spelling of "reqwuired"

SuggestedRemedy

Fix

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.9.7** *P* **208** *L* **7** # **460**
Swanson, Steve Corning Incorporated

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

Missing equation number.

SuggestedRemedy

Add equation number right justified.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Assign equation number 59-2 to the collection of expressions for variables used in support of the equation for the transfer function. This is consistent with the style adopted by Clause 52, subclause 52.9.7. See also comment 457, which will assign equation number to the parent equation.

Cl **59** *SC* **59.9.8** *P* **208** *L* **48** # **568**

Dawe, Piers — Agilent

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

I have an action to find out if risetime spec is necessary for this clause. I'm hopeful that it isn't, and the strict mask of this clause will be enough. But I'll try to address the question better before the meeting.

SuggestedRemedy

As discussed at the meeting.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Will be reported at in the meeting.

Cl **59** *SC* **59.9.8** *P* **209** *L* **4** # **461**

Swanson, Steve — Corning Incorporated

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

Missing equation number.

SuggestedRemedy

Add equation number right justified.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.9.9** *P* **209** *L* **14** # **584**

Dawe, Piers — Agilent

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

Align title with 60 (as modified)

SuggestedRemedy

Change "Transmitter dispersion penalty" to "Transmitter and dispersion penalty (TDP)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **59.9.9** *P* **209** *L* **16** # **462**

Swanson, Steve — Corning Incorporated

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

Reference to Clause 60 is provided.

SuggestedRemedy

Should text be repeated here? Many subclauses have identical text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Bulk of text is in clause 60. A brief introduction to make the section more reader friendly is helpful.

Cl **59** *SC* **6** *P* *L* # **49**

Tatum, Jim — Honeywell

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

Table 59-11 contains references to fiber modal bandwidth
Table 59-11 is missing values

SuggestedRemedy

Delete rows reagarding modal bandwidth
Fill in values through spreadsheet analysis at meeting

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

delete first two rows in Table 59-11. The editor proposes a channel insertion loss of 6.2 dB, changing "link power penalties" to "allocation for penalties" and specifying 3.2 dB, and changing "unallocated margin in link budget" to "additional insertion loss" allowed at 1.6 dB.

Cl **59** *SC* **8** *P* *L* # **50**

Tatum, Jim
Honeywell

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

Table 59-12 is incomplete

SuggestedRemedy

Use values from clause 38 as baseline values

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

add the following text:
Numbers in the Table 59-12 represent high frequency jitter (above 637 kHz) and do not include low frequency jitter or wander. All values are informative.

Table 59-12 -1000BASE-EX jitter budget
Compliance
point
Total jitter
Deterministic jitter

UI
ps
UI
ps
TP1
0.240
192
0.100
80
TP1 to TP2
0.284
227
0.100
80
TP2
0.431
345
0.200
160
TP2 to TP3
0.170
136
0.050
40
TP3
0.510
408
0.250
200
TP3 to TP4
0.332
266
0.212
170
TP4
0.749
599
0.462
370

Cl **59** *SC* **8** *P* *L* # **51**

Tatum, Jim Honeywell

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

Table 59-13 is incomplete

SuggestedRemedy

Use values in clause 38 table 38-10 as baseline values.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

add the following text:
Numbers in the Table 59-13 represent high frequency jitter (above 637 kHz) and do not include low frequency jitter or wander. All values are informative.

Table 59-13 -1000BASE-EX jitter budget
Compliance
point
Total jitter
Deterministic jitter

UI
ps
UI
ps
TP1
0.240
192
0.100
80
TP1 to TP2
0.284
227
0.100
80
TP2
0.431
345
0.200
160
TP2 to TP3
0.170
136
0.050
40
TP3
0.510
408
0.250
200
TP3 to TP4
0.332
266
0.212
170
TP4
0.749
599
0.462
370

Cl **59** *SC* **9.10** *P* *L* **26** # **53**

Tatum, Jim Honeywell

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

59.6.11 reference is wrong

SuggestedRemedy

replace with 59.9.14

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **9.11** *P* *L* # **54**

Tatum, Jim Honeywell

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

This section should be noted as informative since we are going to TDP techniques.

All "shalls" need to be removed

SuggestedRemedy

add informative to title of section, replace "shall" with appropropriate grammatical words.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **59** *SC* **9.15** *P* *L* **7** # **55**

Tatum, Jim Honeywell

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

Is reference to 36A.5 valid?

SuggestedRemedy

If not, replace.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

it is believed that reference to 36A.5 is correct

Cl **59** *SC* **9.3** *P* *L* **17** # **52**
Tatum, Jim Honeywell

Comment Type **E** *Comment Status* **D**
reference to clause 36A valid?

SuggestedRemedy
Is there an equivalent pattern definition section in AH?

Proposed Response *Response Status* **W**
PROPOSED REJECT.

it is believed that reference to 36A.2 is correct

Cl **59** *SC* **General** *P* **General** *L* # **891**
John George OFS

Comment Type **E** *Comment Status* **D**
Single mode fiber designations in table colunm headings inconsistent with clauses 58 and 60

SuggestedRemedy
Change "SMF" to "B1.1, B1.3 SMF" in all applicable tables 59-3, 4, 7, 10, 11, 14, 15, 16

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **59** *SC* **Table 59-4** *P* **202** *L* **16** # **294**
Radcliffe, Jerry Hatteras Networks

Comment Type **T** *Comment Status* **D** *DUP 580*
The minimum transmitter power numbers in the table do not agree with the baseline proposal (joiner_1_0302.pdf). The baseline proposal is for -9.5dBm for SMF. MMF is not mentioned. The table should be brought in line with the baseline proposal.

In addition, change the MMF power to be 0.5dB lower than the SMF power similar to 1000Base-LX.

SuggestedRemedy
Change the transmitter power to -9.5dBm for the SMF case and -10.0dBm for the MMF cases.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

See 580

Cl **59** *SC* **Table 59-9** *P* **204** *L* **42** # **293**
Radcliffe, Jerry Hatteras Networks

Comment Type **T** *Comment Status* **D**
Stressed receiver sensitivity is not an appropriate test for a single mode receiver

SuggestedRemedy
Remove the stressed receiver sensitivity requiremet from the table

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

For further discussion in Kauai

Cl **60** *SC* *P* *L* # **541**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Wordsmithing:
Now that CDRH and IEC are aligned, class 1 is to the IEC reference given (can remove one "shall" and one PICS entry).
There are 100BASE-X optical transceivers (e.g. 100BASE-FX) not subject to this clause.
Is the word "certified" needed? It was eliminated in clause 52. Does the PICS count as certification, so a further mention would be superfluous?

SuggestedRemedy
100BASE-LX and 100BASE-BX optical transceivers shall conform to Class 1 laser requirements as defined in the IEC 60825-1, under any condition of operation. This includes single fault conditions whether coupled into a fiber or out of an open bore.

And just to tidy things up, join the following one-paragraph sentence "Conformance to additional ...." onto this one.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

This comment applies to p244, line 26, Clause 60.9.2.

Cl **60** *SC* **60** *P* *L* # **496**
Dawe, Piers Agilent

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

Does 1.4.62 center wavelength: The average of two optical wavelengths at which the spectral radiant intensity is 50% of the maximum value. (See IEEE 802.3 Clause 11.)" agree with EIA/TIA-455-127?

SuggestedRemedy

Log the question under 1.4, definitions

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Consolidate definition into editor's box at the front of the clause

Cl **60** *SC* **60** *P* **225** *L* **1** # **572**
Dawe, Piers Agilent

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

Not baseband, it's intensity modulated.

SuggestedRemedy

Delete "baseband".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60** *P* **225** *L* **16** # **571**
Dawe, Piers Agilent

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

D1.0 resolutions to comments 254, 255 seem to have been accepted but not acted on.

SuggestedRemedy

Insert in editor's box under "Definitions (to be added to 1.4):",
Update 1.4.15 definition of 100BASE-X.

Then it won't get forgotten as we move forward.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60..1** *P* **229** *L* **25** # **499**
Dawe, Piers Agilent

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

"ER" is sometimes used to mean error ratio (as in BER and alone). G.957 and TS-1000use "EX" for extinction ratio.

SuggestedRemedy

Replace "ER" with "extinction ratio" eight times in this clause, and in the equations replace it with "EX".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.1** *P* **226** *L* **14** # **488**
Dawe, Piers Agilent

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

Table 1 is a great help to the reader. We can make it even more useful by adding a further column. This has the by-product of allowing us to delete a small table later on.

SuggestedRemedy

Add 6th column "Maximum total channel loss". Take values from table 60-13, with any modifications. Add footnote "At the nominal wavelength".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.1** *P* **226** *L* **16** # **491**
Dawe, Piers Agilent

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

Use "straddled" or merged cells to stress that some entries are common by design, and to reduce clutter.

SuggestedRemedy

Merge the three "fiber type" cells. Merge the three range cells. Merge the two BX "number of fibers" cells. Keep the three wavelength cells separate: the coincidence of two entries was not a necessary consequence of the objectives.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.1** *P* **226** *L* **16** # **489**

Dawe, Piers Agilent

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

Style: and D1.0 comments 287, 275. Especially with SI units, quantities are generally with the range 0.1 ~< x < 1000 - unless the next prefixed unit up/down is disliked. Nothing wrong with km, well understood and used in clauses 8, 9, 10, 12, 13, 15, 24, 36, 38, 44, 49, 52, 53, 58 59 and 60 (sometimes in compound units e.g. dB/km).

SuggestedRemedy

Change "Minimum range (meters)", "0.5 to 10000" to "Minimum range", "0.5 m to 10 km".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.1** *P* **226** *L* **21** # **506**

Dawe, Piers Agilent

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

Cover the basics.

SuggestedRemedy

Add sentences "A 100BASE-LX link uses 100BASE-LX PMDs at each end while a 100BASE-BX link uses a 100BASE-BX-OLT PMD at one end and a 100BASE-BX-ONU PMD at the other. Typically the 1550 nm band is used to transmit away from the center of the network ("downstream") and the 1310 nm band towards the center ("upstream"), although this arrangement, or the notion of hierarchy, is not required."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.1** *P* **226** *L* **3** # **486**

Dawe, Piers Agilent

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

Further wordsmithing (3 details): change "100BASE-LX PMD and the 100BASE-BX PMD and medium," to

SuggestedRemedy

100BASE-LX PMD and 100BASE-BX PMDs and the medium

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.1** *P* **226** *L* **5** # **228**

Jonsson, Ulf Ericsson AB

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

Clause 24 is not an automatic cross-reference.

SuggestedRemedy

Add *ref*

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.1** *P* **226** *L* **6** # **487**

Dawe, Piers Agilent

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

MDIO Clause yy: if we go with the "45 registers through 22 interface" proposal, presumably a pure clause 45 implementation would be OK too.

SuggestedRemedy

Change yy to "22 or 45".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Don Pannel will give a presentation showing how to access the Clause 45 registers using today's Clause 22 CPU's and switches. If his proposal is accepted we have to ask the MDIO experts how to best address this in the PMD clauses.

Cl **60** *SC* **60.1** *P* **226** *L* **6** # **229**

Jonsson, Ulf Ericsson AB

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

Which Management Interface yy?

Don Pannel has a proposal that enables access of the Clause 45 registers using today's Clause 22 CPU's and switches.

SuggestedRemedy

Use the Clause 45 registers and allow access to Clause 45 registers through both the Clause 22 interface and the Clause 45 interface.

Ask Ed Turner how to express this in the PMD Clause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Note another comment on same topic.

Cl **60** *SC* **60.1.1** *P* **210** *L* **1** # **99048**

Dawe, Piers Agilent

Comment Type **TR** *Comment Status* **R** *D1.0 #264*

10^-12 BER can't really be necessary, being one (detected) error in two hours. It would be expensive to test for and remarkably hard to extrapolate reliably, though in practice (without the guarantee in the standard) it will be met cost-effectively. I understand the underlying technical reason for demanding very low BERs is to avoid TCP running slow when it sees dropped packets. 10^-10 or 10^-11 seems enough. Other 100Mb/s PHYs use on the order of 10^-10.

SuggestedRemedy

Consider a more traditional BER limit for all 100M PHYs.

Proposed Response *Response Status* **U**

REJECT.

The PMD STF needs to discuss the technical and economical feasibility for specifying a BER of 10^-12 for all 100Mbps PHYs, especially in terms of testing.

14-2-3. Commentor is encouraged to bring a revised proposal.

Cl **60** *SC* **60.10** *P* **244** *L* **48** # **542**

Dawe, Piers Agilent

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

Four lines of text don't deserve a top-level subclause to themselves.

SuggestedRemedy

Change the title of 60.9 to "Environmental, safety and labeling.
Demote 60.10 to 60.9.5.
Join the second sentence-paragraph onto the first.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.11** *P* **245** *L* **1** # **546**

Dawe, Piers Agilent

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

Another very short top-level subclause

SuggestedRemedy

Move 60.11 completely, to just before the present 60.12.1, so that it becomes the new 60.11.1, and 60.12.1 becomes 60.11.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.11** *P* **245** *L* **23** # **543**

Dawe, Piers Agilent

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

If we add a loss column to table 60-1 we can delete table 13. Doing so would save us the bother of sorting out the nominal vs range aspect of wavelength.

SuggestedRemedy

Add a loss column to table 60-1 per another comment. Delete table 60-13.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.11** *P* **245** *L* **23** # **545**

Dawe, Piers Agilent

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

Need to state the minimum acceptable channel losses.

SuggestedRemedy

"The maximum channel insertion losses are given in Table 60-13/1. The minimum loss for 100BASE-LX and 100BASE-BX is zero."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.11** *P* **245** *L* **26** # **472**

Swanson, Steve Corning Incorporated

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

Incorrect reference; only single-mode fiber is referenced in this Clause.

SuggestedRemedy

Delete "...ANSI/TIA/EIA-526-14A [B14], Method B, and"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.11** *P* **245** *L* **38** # **284**

Jonsson, Ulf — Ericsson AB

Comment Type **T** *Comment Status* **D** *DUP 857*

We should strive to specify a common cable plant for all EFM P2P SMF PMDs.

SuggestedRemedy

Specify the same channel insertion loss for all 1310nm and 1550nm P2P SMF PMDs respectively.

Channel insertion loss (1310nm) = 7 dB
Channel insertion loss (1550nm) = 6 dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Needs more info and debate (as part of the general plant discussio). Other comments relate (see comment 857, 245 & 550).

Cl **60** *SC* **60.11** *P* **245** *L* **38** # **544**

Dawe, Piers — Agilent

Comment Type **T** *Comment Status* **D** *DUP 912*

We need to agree what channel losses are reasonable. The 6 and 7 dB values would be appropriate in an enterprise environment, we think, but we are hearing that in an access network with many branching points and splices, significantly higher losses may be cost effective. Upgradeability of fibre plant (to Gigabit Ethernet or OC-12, from dual to single fibre, or possibly to other data rates) may be a concern but in my opinion cannot be mandatory; the standard should be consistent and satisfactory in itself.

SuggestedRemedy

Study the issue and choose higher loss limits. May not necessarily be the same for dual fibre as for single fibre. If we wish to advise on upgrade paths to other data rates, put the information in Annex 64 and refer to it from here or in 60.12. if we wish to discuss commonality between 100BASE-LX and 100BASE-BX, do it here or in 60.12.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment 912. Once losses are reviewed,appropriate reference text may be added for more information

Cl **60** *SC* **60.12** *P* *L* # **549**

Dawe, Piers — Agilent

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

Missing dB/km value for 1550 nm, error in 1310 nm. G.652 allows 0.5 dB/km for 1310 nm, OC-48 and below. We can sort the dB/km out or simply specify end-to-end loss which I think is in line with the operators' thinking. I prefer option 3c below.

SuggestedRemedy

1. Delete 0.4 dB/km for 1310 nm.
Option 2a Delete footnotes b and c.
Option 2b Use both references in one footnote.
Option 2c Use both references in 60.12.1.
Option 3a Insert 0.4 dB/km for 1550 nm.
Option 3b Delete all dB/km entries. We have stated the end-to-end loss elsewhere
Option 3c Insert 0.4 dB/km for 1550 nm and make the dB/km entries informative. The quick way to do that is to insert "dispersion" on p245 line 44 before "specifications" and add a new sentence "The attenuation coefficients shown represent the requirements of fibre or cable standards G.652 and ANSI/TIA/EIA-568-B.3 [and IEC xxx?]. They are shown here for information only; the end-to-end channel loss shown in Table 60-1 is required.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The PMD STF needs to discuss this issue.

Cl **60** *SC* **60.12** *P* **246** *L* **3** # **548**

Dawe, Piers — Agilent

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

Tidying up

SuggestedRemedy

Lines 9 and 10, straddle the dispersion entries.
Re-shrink-wrap the whole table.
Line 12, change "and" to "which is the".
Line 14, change TIA568B.3 to ANSI/TIA/EIA-568-B.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Dispersion entries are dealt with in a separate comment. Remianing editorial comments accepted

Cl **60** *SC* **60.12.1** *P* **245** *L* **53** # **547**
Dawe, Piers Agilent

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

I suspect most of table 60-14 is in alignment with IEC 60793-2, not exceptions to it.

SuggestedRemedy

Change "exceptions" to "requirements".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Check that Table 60-14 really is in alignment with IEC 60793-2. If so, make the proposed change.

Cl **60** *SC* **60.12.2.1** *P* **246** *L* **24** # **550**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D** *DUP 857*

We are hearing that access networks are different to enterprise networks and may contain many splices, maybe 2 dB isn't enough.

SuggestedRemedy

Discuss and raise "2 dB" to appropriate values for 100BASE-LX and 100BASE-BX separately. Maybe we can learn from the experience that went into TS-1000.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The PMD STF needs to discuss this issue at large. Refer to Comment 857

Cl **60** *SC* **60.12.2.2** *P* **246** *L* **27** # **551**
Dawe, Piers Agilent

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

Obsolete nomenclature

SuggestedRemedy

Change subclause title to "Maximum discrete reflectance". To help the reader, in the sentence insert after "reflectance", "of e.g. a connection or splice".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.13** *P* **247** *L* **1** # **552**
Dawe, Piers Agilent

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

Title not aligned with clause title.

SuggestedRemedy

Trim the title in line with title of clause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.13** *P* **247** *L* **10** # **553**
Dawe, Piers Agilent

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

Not all at once

SuggestedRemedy

Change "OLT, and" to "OLT, or".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Allign with the clause 60 title

Cl **60** *SC* **60.2.1** *P* **227** *L* **33** # **470**
Swanson, Steve Corning Incorporated

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

Incorrect reference.

SuggestedRemedy

"100BASE-FX" should read "100BASE-LX"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The reference to 100BASE-FX is just to point out that TP1 and TP4 is the same as for the old 100BASE-FX.

Cl **60** *SC* **60.2.1** *P* **227** *L* **4** # **886**

Tom Murphy Infineon

Comment Type **T** *Comment Status* **D** *DUP 871*

The majority of BiDi devices use a pigtail construction. Hence, a patch cord is not needed for this measurement.

SuggestedRemedy

...is defined as the output end of a patch cord or pigtail (TP2),...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 871

Cl **60** *SC* **60.2.4** *P* **228** *L* **11** # **492**

Dawe, Piers Agilent

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

Compacting the printout:

SuggestedRemedy

Take out one to three carriage returns from tables 60-2 and 60-3 and re-shrink-wrap the tables.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.2.4** *P* **228** *L* **30** # **493**

Dawe, Piers Agilent

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

Duplicate truth tables. These two tables should be virtually identical, no need to spell it out twice. If we wanted different signal detect lower limits per PMD, we could put the limits in the receiver spec tables, but I believe they should be common across multiple PMD types which could be connected by accident.

SuggestedRemedy

Delete table 60-3. Replace "in Table 60–5" with "in Table 60–5 or Table 60–7 as appropriate". Change the title to either "100BASE-LX and 100BASE-BX SIGNAL_DETECT value definition" or simply "SIGNAL_DETECT value definition".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Prefer to use the suggested title: "100BASE-LX and 100BASE-BX SIGNAL_DETECT value definition"

Cl **60** *SC* **60.2.4** *P* **228** *L* **6** # **855**

Thatcher, Jonathan World Wide Packets

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

Tables 60-2 and 60-3 should be combined

SuggestedRemedy

Combine.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.3** *P* **228** *L* **47** # **494**

Dawe, Piers Agilent

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

"All" media types is copied from clause 38 where there are several. Here, there are just two, and the difference between them hardly concerns this clause. Also, does a transceiver "support" a medium type? Isn't it the other way round, the transceiver uses the medium?

SuggestedRemedy

Replace "all" by "the".
Replace "supports" by "operates over"?
Similarly for 60.4, p 230.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.3.1** *P* **229** *L* **16** # **512**

Dawe, Piers Agilent

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

We agreed a minimum extinction ratio of 6 dB and then discovered that the idle pattern for this PMD, which is the convenient pattern for testing is 0101... This will cause a lower reading of extinction ratio for a slow but compliant and satisfactory transmitter, which should be accounted for. By the way this effect is a good thing; it means that there is a hidden trade between extinction ratio and transmitter speed for satisfactory transmitters. A 6 dB extinction ratio measured the Gigabit Ethernet way translates to 4.8 dB in this clause. I guess we can round this off to 5 dB.

SuggestedRemedy

5 dB for extinction ratio, -14.8 dBm or 32.9 uW.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

These are valid arguments for lowering the extinction ratio and need to be discussed by the PMD STF.

Cl **60** *SC* **60.3.1** *P* **229** *L* **17** # **498**

Dawe, Piers Agilent

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

It has been suggested that a RIN spec is overkill when we have a TDP spec, and unnecessary spec items add cost, even if just in paperwork. Also, it's not a test that can readily be carried out on a normal Ethernet equipment, but relates more to a component level test, and we should avoid specifying things which can't be verified on a "black box" basis. And neither TS-1000 nor G.957 has a RIN spec.

SuggestedRemedy

Consider removing the spec line from the table. Then consider adding a sentence to p228 line 54: "In addition, a RIN12OMA lower than -110 dB/Hz is recommended. RIN is a contributor to TDP."
Do the same in 60.4.1.
Consider removing the "shall" in 60.8.7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

RIN is covered by the TDP measurement. During the 100M ad hoc calls it was agreed that the RIN test could be removed, but that it would still be helpful to informatively recommend a RIN_12_OMA lower than -110 dB/Hz.

Cl **60** *SC* **60.3.1** *P* **229** *L* **19** # **501**

Dawe, Piers Agilent

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

IEEE style guide 15.2 avoids the Newspaper Headline Capitalization Style.

SuggestedRemedy

"Optical return loss tolerance" and check the rest of the clause for a few more instances.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.3.1** *P* **229** *L* **24** # **856**

Thatcher, Jonathan World Wide Packets

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

"computed mechanically"? Is this some kind of weird concept from across the pond? Is the user supposed to use an abaccus or some kind of old fashioned adding machine?

SuggestedRemedy

Something helpful would be helpful

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace computed mechanically with derived

Cl **60** *SC* **60.3.1** *P* **229** *L* **8** # **495**

Dawe, Piers Agilent

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

If a transmitter has a center wavelength of 1261 nm and a spectral width of 7 nm, a little of its spectrum extends around 1257 nm. Is it compliant or not? FDDI has "Central Wavelength" (clear, but its limits are within the cable limits), G.957 has "Operating wavelength range", and can go as far as 1260-1360. G.652 specifies the Cable cut-off wavelength, maximum 1260 nm. TS-1000 has "central wavelength of 1260 nm to 1360 nm". Clause 38 has "Wavelength (range) 1270 to 1355 nm".

SuggestedRemedy

Question for the fibre experts! We would like all the wavelength range possible so we can stretch the temperature range for reasonable manufacturing tolerances.
Options:
A Insert "Central" before wavelength.
B Use "Operating wavelength range" but define it as e.g. central wavelength +/- 1 RMS spectral width.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The PMD STF needs to discuss this issue.

Cl **60** *SC* **60.3.2** *P* **229** *L* **31** # **500**

Dawe, Piers Agilent

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

We need to be clearer about what is a property of the receiver and what is a property of the received signal. And min and max.

SuggestedRemedy

Line 31: receiver sensitivity
Line 41: received power
Line 42: Receiver sensitivity (max)
Line 44: Receiver sensitivity as OMA a (max)
Line 48: Stressed receiver sensitivity
Do the same in 60.4.2 and table 60-7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

The suggested changes make the spec clearer. However, note that e.g. 1000BASE-LX uses the same terms as currently used in the tables.

Cl **60** *SC* **60.3.2** *P* **229** *L* **47** # **502**

Dawe, Piers Agilent

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

Here are straw man values for a 100BASE-LX: revised nominal receiver sensitivity, stressed receiver sensitivity and vertical eye closure penalty. These assume a loss budget of 8 dB, being 10km * 0.5dB/km + 3dB for splices and connectors (this is a change from 2 dB and needs debate), and a TDP of 3.7 dB. They take into account the 101010... pattern used for OMA with this line code, which reduces the measured OMA causing the sensitivity to appear to get better, and the proposed 5 dB extinction ratio limit on this basis. These sensitivities should still be readily achievable, but if we think they are an issue we can raise the minimum transmit Pave to achieve a similar OMA to an OC-3 part.

SuggestedRemedy

Change receiver sensitivity from -25 to -26.9 P_ave, and to -26.8 dBm or 2.10 uW OMA. This is comparable to an ITU sensitivity of -27.5 dBm. Stressed receiver sensitivity -24.1 dBm P_ave. Vertical eye closure penalty 3.7 dB. The two sensitivities move in simple opposition to the loss budget.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The PMD STF needs to discuss this issue at large. This comment relates to comment 511 & 513

Cl **60** *SC* **60.3.2** *P* **229** *L* **50** # **559**

Dawe, Piers Agilent

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

If we choose to stay with the current stressed eye conformance, need stressed eye jitter entries in tables 60-5 and 60-7.

SuggestedRemedy

Option 1 Abandon stressed eye conformance for these PMDs on the ground that there isn't enough path distortion to bother with.
Option2 Add another row to the table "Stressed eye jitter (min) ? UI pk-pk. Add footnote "Vertical eye closure penalty and stressed eye jitter are test conditions for measuring stressed receiver sensitivity. They are not required characteristics of the receiver."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The PMD STF needs to discuss this issue.

Cl **60** *SC* **60.3.2** *P* **229** *L* **51** # **503**

Dawe, Piers Agilent

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

Footnote b, "This equals the Return Loss of 1000BASE-LX" is confusing. I read it to be a statement about commonality of requirements between 100BASE-LX and 1000BASE-LX when I think it means to explain the terminology used.

SuggestedRemedy

In editors' box p225 under "Definitions" add "Reflectance". Define reflectance ratio as ratio of reflected to incident power (better check this with other standards, books etc.) and say that it is the inverse of return loss.
Change the footnote here and in 60.4.2 to "See 1.4.n for definition of reflectance".

Add further entries under "Definitions" to update 1.4.129, and 1.4.237 to mention 1000BASE-LX.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.4** *P* **213** *L* # **99049**

Dawe, Piers Agilent

Comment Type **TR** *Comment Status* **R** *D1.0 #289*

At present we are copying TS-1000 for power levels but saying the objective is 10 km while TS-1000 does 15 km. These statements are contradictory: a standard cannot demand things it doesn't need, or if it demands them it must put them to use. In the following comments I show how spec values which are compatible with TS-1000, but less onerous, can deliver our present 10 km objective, with a spec power budget reduced from 16 dB to 9 dB (1550 band) and 9 or 10 dB (1310 band). Part of the reduction is a sleight of hand: we are defining a worst-pattern sensitivity. Alternatively we could choose another reach in the range 10 to 15 km.

SuggestedRemedy

Use spec values for a 10 km link which are compatible but less onerous than TS-1000.

Proposed Response *Response Status* **U**

REJECT.

Piers to draft a letter. Work with the liason to engage the TTC committee to look at changes to the power budget to harmonize both TTC and EFM specifications.

Cl **60** *SC* **60.4** *P* **230** *L* **12** # **505**

Dawe, Piers — Agilent

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

Tautology: the range must necessarily be the same for 100BASE-BX-OLT and 100BASE-BX-ONU. The point is that it is the range of a 100BASE-BX link.

SuggestedRemedy

Simplify "100BASE-BX-OLT and 100BASE-BX-ONU" to "100BASE-BX" the first time (line 12).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.4** *P* **230** *L* **8** # **504**

Dawe, Piers — Agilent

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

Take the clutter out of the title

SuggestedRemedy

PMD to MDI optical specifications for 100BASE-BX

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.4** *P* **230** *L* **8** # **507**

Dawe, Piers — Agilent

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

Removing clutter

SuggestedRemedy

Change "100BASE-BX-OLT and the 100BASE-BX-ONU" to "100BASE-BX" in lines 20, 24 and 52, p231 lines 1 and 40, and p232 line 1. Change "budget" to "budgets", p231 line 40, 43 and p232 line 2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.4.1** *P* **230** *L* **27** # **471**

Swanson, Steve — Corning Incorporated

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

Table can be reformatted.

SuggestedRemedy

Straddle all common entry columns in Tables 60-6 and 60-7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.4.1** *P* **230** *L* **32** # **497**

Dawe, Piers — Agilent

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

RMS spectral width round 1310 would not be 7 but 7.7 nm to align with both G.957 and TS-1000. I think this is a typo but because it affects a table entry I have called my comment technical.

SuggestedRemedy

7.7 nm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.4.1** *P* **230** *L* **35** # **234**

Jonsson, Ulf — Ericsson AB

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

The power budget of 16dB for 100BASE-BX seems unnecessarily high.

SuggestedRemedy

Investigate the possiblity to relax the P_ave (min) and Rx sensitivity values.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. This subject needs further study to understand the loss characteristics of access networks as opposed to enterprise, to bear in mind the desire for compatibility with TS-1000, and to address any desire for an upgrade of the data rate on a link. Note other comments on same topic.

Cl **60** *SC* **60.4.1** *P* **230** *L* **38** # **509**

Dawe, Piers — Agilent

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

Desirability of 8.2 dB extinction ratio to be debated further. However, the equivalent of an ITU-T style 8.2 dB measured under a 10101... basis is 7.1 dB

SuggestedRemedy

Change spec extinction ratios here to 7.1 dB. Change transmit OMAs to -12.7 dBm or 53.7 uW. Continue investigation and discussions.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE

The PMD STF needs to discuss this in relation to the TTC Harmonization presentation.

Cl **60** *SC* **60.4.1** *P* **230** *L* **41** # **510**

Dawe, Piers Agilent

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

This table may need an optical return loss tolerance spec, which would be used in the TDP test.

SuggestedRemedy

Add optical return loss tolerance, 12 dB.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

At the meeting in New Orleans we decided that an optical return loss tolerance spec was needed for 100BASE-LX, and there doesn't seem to be any reason to why this shouldn't be true for 100BASE-BX as well.

Cl **60** *SC* **60.4.1** *P* **230** *L* **44** # **508**

Dawe, Piers Agilent

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

Use the cell straddle to reduce repetition

SuggestedRemedy

Signaling speed, off power, extinction ratio, eye mask in table 60-6, signaling speed in table 60-7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **60** *SC* **60.4.2** *P* **231** *L* **11** # **511**

Dawe, Piers Agilent

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

Here are straw man values for 100BASE-BX upstream: stressed receiver sensitivity and vertical eye closure penalty. These assume a loss budget of 8 dB, being 10km * 0.5dB/km + 3dB for splices and connectors (this is a change from 2 dB and needs debate). They take into account the 101010... pattern used for OMA with this line code, which reduces the measured OMA causing the sensitivity to appear to get better.

SuggestedRemedy

Change receiver sensitivity OMA to -27.7 dBm or 1.69 uW OMA. Stressed receiver sensitivity -26.2 dBm P_ave. Vertical eye closure penalty 3.8 dB. There is still 2.6 dB of margin estimated by the model with a TDP of 4.1 dB.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE

The PMD STF needs to discuss this issue at large. This comment relates to comment 501 & 513

Cl **60** *SC* **60.4.2** *P* **231** *L* **11** # **513**

Dawe, Piers Agilent

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

Here are straw man values for 100BASE-BX downstream: stressed receiver sensitivity and vertical eye closure penalty. These assume a loss budget of 7 dB, being 10km * 0.4dB/km + 3dB for splices and connectors (this is a change from 2 dB and needs debate). They take into account the 101010... pattern used for OMA with this line code, which reduces the measured OMA causing the sensitivity to appear to get better.

SuggestedRemedy

Change receiver sensitivity OMA to -27.7 dBm or 1.69 uW OMA (same as upstream). Stressed receiver sensitivity -25.6 dBm P_ave. Vertical eye closure penalty 4.1 dB. There is still 2.3 dB of margin estimated by the model with a TDP of 5.8 dB.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE

The PMD STF needs to discuss this issue at large. This comment relates to comment 502 & 511

Cl **60** *SC* **60.5** *P* **231** *L* **30** # **857**

Thatcher, Jonathan World Wide Packets

Comment Type **TR** *Comment Status* **D** *DUP 857*

Channel insertion loss (meaning fiber specification) should be same as Gig types. More extensive, similar, comment on C 59.

SuggestedRemedy

Make sure that 100Mb fiber plant can be used for higher speeds. Must have upgrade path.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

It would be desirable to spec a common cable plant among all EFM P2P SMF PMDs. Probably EFM cable plant will not be compliant with Clause 38, 1000BASE-LX.

Cl **60** *SC* **60.5** *P* **231** *L* **31** # **514**

Dawe, Piers — Agilent

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

Preliminary estimates for power budget tables, 100BASE-LX, 100BASE-BX 1310 band, 100BASE-BX 1550 band. There are discrepancies of ~0.3 dB here but it will give the reader a fair indication. These values are based on my other comments.

SuggestedRemedy

Power budget 12.9, 16, 16 dB
Operating distance 10, 10 km (merge the two BX cells)
Channel insertion loss 8, 8, 7 dB (do we need a footnote on this "At the fiber specification wavelength of 1310 nm"?)
Power penalties 4.7, 5.1, 6.7 dB
Reserved margin 0.0, 2.6, 2.3 dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE

These values need to be debated.

This comment relates to comments 501, 511 & 513.

Cl **60** *SC* **60.6** *P* **232** *L* **4** # **517**

Dawe, Piers — Agilent

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

The column headings are names of the ends of the link when we need to specify directions.

SuggestedRemedy

Options:
A Use names of directions e.g. upstream, downstream
B Use wavelength e.g. "1310 nm band", " 1550 nm band"
C Say "From" before names of ends.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Proposal B seems most appropriate. However, for consistency we then also need to change the column heading in Table 60-8.

Cl **60** *SC* **60.7** *P* **231** *L* **46** # **239**

Jonsson, Ulf — Ericsson AB

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

Typo. TP2 should be TP4.

SuggestedRemedy

Change TP2 to TP4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Other comment(s) say the same.

Cl **60** *SC* **60.7** *P* **231** *L* **46** # **516**

Dawe, Piers — Agilent

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

typo

SuggestedRemedy

Change "TP2" to "TP4".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.7** *P* **231** *L* **48** # **241**

Jonsson, Ulf — Ericsson AB

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

We need to cover existing components which usually specifies a high-frequency jitter in the range of 25 to 50 kHz.

There are two instances in the spec where we specify the jitter corner frequency:
1. Clause 60.8.9 (transmitted eye) - here it is used to insure that the a TRx does not pass jitter that have corner BW less than x kHz (corner mask is x kHz).
2. Clause 60.7 (jitter budget) - Here we spec a corner freq greater than x kHz.

With the above reasoning the 100M ad hoc has concluded that we should go for the lower value of 20 kHz.

SuggestedRemedy

"...(above 20/64 kHz)" should be changed to "...(above 20 kHz)"

Remove editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.7** *P* **231** *L* **48** # **515**

Dawe, Piers — Agilent

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

Choose 20 kHz for the jitter measurement corner. This implies that CDRs should have bandwidths at least 20 kHz; if anyone thinks that they don't, speak up!

SuggestedRemedy

Delete "/64". Delete the editor's note. In 60.8.8 p236 line 34, delete "or 64"and another note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

A corner freq. of 20 kHz was agreed to in the 100M ad hoc.

Cl **60** *SC* **60.7** *P* **231** *L* **50** # **520**
Dawe, Piers Agilent

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

Could add some more explanation here

SuggestedRemedy

Add "High probability jitter at TP2 is constrained by the eye mask. Total jitter at TP3 (and therefore at TP2 also) is constrained by the error detector timing offsets. High levels of high probability jitter at TP2, 3 and 4 are expected, caused by high probability baseline wander, and values around 0.4 UI have been considered. The jitter difference between TP2 and TP3 is expected to be lower than for higher speed PMDs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.7** *P* **232** *L* **20** # **518**
Dawe, Piers Agilent

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

ps should be

SuggestedRemedy

ns (twice)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.7** *P* **232** *L* **20** # **519**
Dawe, Piers Agilent

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

Not Compliance Point

SuggestedRemedy

"Reference point" (as on p227) or "Measurement point"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to "Reference point"

Cl **60** *SC* **60.7** *P* **232** *L* **26** # **536**
Dawe, Piers Agilent

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

Add a sentence to specify the decision timing offsets for TDP, which should be taken out of the measurement subclause so they can be chosen per PMD (family).

SuggestedRemedy

The decision timing offsets to be used in TDP assurance (60.8.9.4) are +-0.x UI. Debate x. Suggestions for this clause, 0.08 or 0.10.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accept the text with 0.08

Cl **60** *SC* **60.8** *P* **232** *L* **31** # **888**
Tom Murphy Infineon

Comment Type **T** *Comment Status* **D** *DUP 871*

The majority of BiDi devices use a pigtail construction. Hence, a patch cord is not needed for this measurement

SuggestedRemedy

All optical measurements shall be made through a short patch cable or pigtail, between 0.5 and 5 m in length

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Same issue. See response to 871

Cl **60** *SC* **60.8.1.1** *P* **232** *L* **44** # **859**
Thatcher, Jonathan World Wide Packets

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

The test pattern is repeated...

SuggestedRemedy

Add "continuously repeated" after "frames"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Agree, but prefer to add the suggested text before "frames":

"A test pattern for base line wander is composed of a sequence of three continously repeated frames."

Cl **60** *SC* **60.8.1.1** *P* **232** *L* **44** # **523**
Dawe, Piers Agilent

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

It makes it easier to write the PICS if there is no more than one "shall" in any statement of requirement. There's one on line 41.

SuggestedRemedy

Each frame has ...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.1.1** *P* **233** *L* **1** # **522**
Dawe, Piers Agilent

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

Too Many Capitals

SuggestedRemedy

interframe gap

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.1.1** *P* **233** *L* **1** # **521**
Dawe, Piers Agilent

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

Spell out an acronym which is new to the PMD clauses

SuggestedRemedy

... after the frame check sequence (FCS) has ....

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.10** *P* **239** *L* **44** # **537**
Dawe, Piers Agilent

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

Test signal for 100BASE-X will have some deliberate BLW and jitter.

SuggestedRemedy

"... and RIN (but see below). The ..." On p240 line 4, add "This causes some jitter in the test signal, which is acceptable."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The latter sentence is OK.

Consider rewording the suggested text “(but see below)” since this expression is a bit vague.

Cl **60** *SC* **60.8.11** *P* **240** *L* **7** # **289**
Radcliffe, Jerry Hatteras Networks

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

This is the section of hte test methodology for stressed receiver sensitivity. Other comments were made to remove this requirement from the receivers. If this is accepted the test section needs to be removed.

SuggestedRemedy

Remove Clause 60.8.11 if it was agreed to eleminate the requirement for this test.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

For the sake of other clauses we should keep the text for now in one place. A decision to move the text could be made at a later stage.

Cl **60** *SC* **60.8.11** *P* **240** *L* **9** # **539**
Dawe, Piers Agilent

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

This very long subclause needs a sentence of introduction.

SuggestedRemedy

New first sentence:

The stressed receiver conformance test is intended to screen against receivers with poor frequency response or timing characteristics which could cause errors when combined with a distorted but compliant signal at TP3. Modal (MMF) or chromatic (SMF) dispersion can cause distortion.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

An introduction is appropriate.

Note that some comments have requested a removal of the stressed receiver test for 100M, which of course would mean that the suggested introduction is not necessary.

Cl **60** *SC* **60.8.11.1** *P* **240** *L* **24** # **273**
Jonsson, Ulf Ericsson AB

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

Make Clause 60 self-contained. Better to copy figure to Clause 60 rather than having a cross-reference to Clause 52.

SuggestedRemedy

Copy Figure 52-10 to Clause 60.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

And refer to the copy, of course. See comment to p236 line 53.

Cl **60** *SC* **60.8.11.1** *P* **240** *L* **27** # **540**
Dawe, Piers Agilent

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

60.y.y

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Check the reference

Cl **60** *SC* **60.8.11.1** *P* **240** *L* **33** # **274**
Jonsson, Ulf Ericsson AB

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

Remove text that has to do with MMF.

SuggestedRemedy

Remove the following text:
"and the transvertal filter called out to emulate multimode fiber"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

(unless 59 abandons MMF). This material is used by 59. Note other similar comments.

Cl **60** *SC* **60.8.11.1** *P* **240** *L* **49** # **275**
Jonsson, Ulf Ericsson AB

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

Reference test pattern defined in Clause 60.8.1

SuggestedRemedy

Replace the text:
"Actual patterns for testing the receiver are specified in the appropriate clause."

with:

"The pattern for testing the receiver is specified in Clause 60.8.1."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

'in the appropriate clause, e.g. 60.8.1.'

Cl **60** *SC* **60.8.11.1** *P* **241** *L* **15** # **276**
Jonsson, Ulf Ericsson AB

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

This comment is valid for Line 15 and Line 17

Make Clause 60 self-contained. Better to copy figure to Clause 60 rather than having a cross-reference to Clause 52.

SuggestedRemedy

Copy Figure 52-10 to Clause 60.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.11.2** *P* **241** *L* **39** # **554**
Dawe, Piers Agilent

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

Calibration pattern may be repetitive yet not short (FDDI BLW pattern is an example, though I don't know if it's a good calibration pattern).

SuggestedRemedy

Change "short" to "repetitive.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **60** *SC* **60.8.11.2** *P* **241** *L* **40** # **555**
Dawe, Piers Agilent

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

60.n.m.1

SuggestedRemedy

60.8.11.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.11.2** *P* **241** *L* **40** # **277**
Jonsson, Ulf Ericsson AB

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

Make cross reference to 60.8.11.1

SuggestedRemedy

60.m.n.1 should be 60.8.11.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Other comment(s) agree.

Cl **60** *SC* **60.8.11.2** *P* **241** *L* **41** # **556**
Dawe, Piers Agilent

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

Does "In any case, a pattern shorter than PRBS10 is not recommended." apply to short-block-coded PMDs?

SuggestedRemedy

?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The PMD STF needs to discuss this issue.

Cl **60** *SC* **60.8.11.2** *P* **241** *L* **43** # **557**
Dawe, Piers Agilent

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

Typos and capitalisation

SuggestedRemedy

extinction ratio
transmitter.
, the extinction ratio may

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.11.2** *P* **241** *L* **44** # **278**
Jonsson, Ulf Ericsson AB

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

Two .s

SuggestedRemedy

Remove '.'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.11.2** *P* **241** *L* **47** # **558**
Dawe, Piers Agilent

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

Clarification

SuggestedRemedy

Extend sentence ", although for the purposes of this clause, OMA is to be measured with a different pattern; AN and OMA are not likely to be equal."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.11.2** *P* **241** *L* **47** # **279**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
Change cross-reference 52.9.5 to 60.8.5

SuggestedRemedy
Change cross-reference 52.9.5 to 60.8.5

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

In this clause, A_N and OMA are not identical. Change 'measured per the method for measuring OMA in 52.9.5 using a square wave pattern.' to 'measured according to 60.8.5 using a square wave pattern.'. At the end of 60.8.5, add 'Similarly, the optical power measure A/sub/N/sub/ is to be measured with a square wave pattern consisting of four to eleven consecutive ones followed by an equal run of zeros. Five ones followed by five zeroes is convenient (the /H/ code-group in 24, or K28.7 in 1000BASE-X which is the ""Low-frequency test pattern"" of 36A.2). The OMA of 52 is A/sub/N/sub/, and OMA here may differ.' On p243 line 4, change 'is as given for OMA in 52.9.5.' to 'is given in 60.8.5.'.

Cl **60** *SC* **60.8.11.2** *P* **241** *L* **48** # **562**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Bullet 5 is far too long

SuggestedRemedy
Wordsmithing suggestions welcome.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Clause editor to propose some text

Cl **60** *SC* **60.8.11.2** *P* **242** *L* **10** # **280**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
Change equation number

SuggestedRemedy
Change (52-1) to (60-2)

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE. See comment to line 7.

Cl **60** *SC* **60.8.11.2** *P* **242** *L* **14** # **563**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Figure 60-n

SuggestedRemedy
60-4

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.11.2** *P* **242** *L* **14** # **282**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
Make cross-reference

SuggestedRemedy
Figure 60-n should be Figure 60-4

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.11.2** *P* **242** *L* **7** # **561**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Wrong equation label

SuggestedRemedy
Option 1 Refer to and label equation in clause 60 series
Option 2 Replace "Equation (52 -1)" with "the equation:-"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Prefer option 2

Cl **60** *SC* **60.8.11.2** *P* **242** *L* **7** # **281**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
Change equation reference

SuggestedRemedy
Change (52-1) to (60-2)

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Easier to delete number and say 'the equation:'. Another comment refers.

Cl **60** *SC* **60.8.11.2** *P* **243** *L* **10** # **862**
Thatcher, Jonathan World Wide Packets

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

Text cut off.

This entire subclause should be referenced

SuggestedRemedy

Remove and reference C52.
At least fix text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

We are striving to make the EFM clauses self-contained, meaning that we should try to reference outside EFM clauses as little as possible.

The figure will be modified according to the Editor's note on p243. Fix the text cut-off.

Note, if we decide to remove the stressed receiver spec no changes are of course necessary.

Cl **60** *SC* **60.8.11.2** *P* **243** *L* **3** # **283**
Jonsson, Ulf Ericsson AB

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

Figure 60-n is Figure 60-4

SuggestedRemedy

Make cross-reference to Figure 60-4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.2** *P* **233** *L* **24** # **524**
Dawe, Piers Agilent

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

"The wavelength and spectral width (RMS) shall be measured ..." isn't really what we mean. We mean that they should be assured to meet the measurements, were they to be carried out.

SuggestedRemedy

"The wavelength and spectral width (RMS) shall be assured in relation to measurements ..." Further wordsmithing welcome!

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.4** *P* **233** *L* **36** # **525**
Dawe, Piers Agilent

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

"The extinction ratio is measured under fully modulated conditions with worst-case reflections." First, I never considered any partly modulated condition, we shouldn't even suggest the idea. Second, for DFB lasers the reflections are a bad idea for extinction ratio measurements, adding uncertainty to the measurement. Not so sure about multi-longitudinal-mode lasers.

SuggestedRemedy

Delete the sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.5** *P* **233** *L* **48** # **858**
Thatcher, Jonathan World Wide Packets

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

Should we specify the BT filter specification here?

SuggestedRemedy

1/10th the value used in C38; 1/100th the value used in C52.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is a general test procedure. BW are specified in a separate clause

Cl **60** *SC* **60.8.5** *P* **233** *L* **53** # **526**
Dawe, Piers Agilent

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

We want to make this text as applicable as possible over EFM so we don't have to proliferate it.

SuggestedRemedy

Change "idle pattern described above" to simply "idle pattern"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **60** *SC* **60.8.5** *P* **234** *L* **17** # **528**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Which fig. 60-y?

SuggestedRemedy

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE

Actual reference to be added. 60-4

Cl **60** *SC* **60.8.5** *P* **234** *L* **2** # **246**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
Missing space.

SuggestedRemedy
Add space after "1"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Sharp eyes!

Cl **60** *SC* **60.8.5** *P* **234** *L* **3** # **527**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
The similarity (but not congruence) to clause 52 OMA could cause confusion.

SuggestedRemedy
Change "interval, 1 UI" to "interval, here 1 UI" on lines 3 and 5

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.5** *P* **234** *L* **4** # **248**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
Missing space

SuggestedRemedy
Add space after "...20%"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.5** *P* **234** *L* **4** # **247**
Jonsson, Ulf Ericsson AB

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

SuggestedRemedy
"ower" shall be "power"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.6** *P* **234** *L* **19** # **266**
Jonsson, Ulf Ericsson AB

Comment Type **T** *Comment Status* **D**
Add information on how to calculate Receive OMA based on Rx sensitivity and ER

SuggestedRemedy
Add the following formula:

OMA ~ 2*Rx_sensitivity*((ER-1)/(ER+1))

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE. Good idea. Would it be better done in narrative? Last in this subclause, add 'Receiver sensitivity, which is an optical power, can be expressed in OMA or mean power terms according to the same relations.'

Cl **60** *SC* **60.8.6** *P* **234** *L* **29** # **249**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
All numbers in the equations should be in subscript

SuggestedRemedy
Change all numbers in the equations to be in subscript

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Also the letters in the equations are in italics, the numbers are not, and in the text, neither are. Put them all in italics.

Cl **60** *SC* **60.8.6** *P* **234** *L* **29** # **529**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Typo!

SuggestedRemedy
OMA = P1 - P0 not vice versa!

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.6** *P* **234** *L* **31** # **252**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
This comment is valid for Line 31 and Line 40.

Change mW to Watts.

SuggestedRemedy
Change mW to Watts.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.6** *P* **234** *L* **44** # **250**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
The numbers in P0 and P1 should be in subscript.

SuggestedRemedy
Change the numbers in P0 and P1 to be in subscript.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.6** *P* **234** *L* **45** # **253**
Jonsson, Ulf Ericsson AB

Comment Type **T** *Comment Status* **D**
Is the following sentence applicable to the Clause 100M PMDs?

"For some PMD types, e.g. 10GBASE, different patterns leading to different values of P1 and P0 are used for OMA on the one hand and extinction ratio on the other hand".

SuggestedRemedy
Remove the sentence

Proposed Response *Response Status* **W**
PROPOSED REJECT.

This whole section is informative, and as there is no equivalent in clause 52, is likely to be read by readers of clause 52 who ask themselves 'what's OMA' and look elsewhere in the same 802.3 document to seek answers.

Cl **60** *SC* **60.8.6** *P* **234** *L* **46** # **251**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
The numbers in P0 and P1 should be in subscript.

SuggestedRemedy
Change the numbers in P0 and P1 to be in subscript.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.7** *P* **235** *L* **5** # **254**
Jonsson, Ulf Ericsson AB

Comment Type **T** *Comment Status* **D**
We don't need to specify RIN for 100M. A RIN test is not necessary since it's covered by the TDP measurement.

SuggestedRemedy
Remove Clause 60.8.7

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

As RINxOMA is a better metric and a better measurement than traditional RIN, it should appear somewhere in EFM, even if we delete RIN from this clause 60 and make it informative in 58 and 59. If we keep an informative RIN12OMA in 60, keep this subclause and let 58, 59 refer to it. If we delete RIN from clause 60 but keep it in 58 and 59, even if informative, consider getting one of those clauses to host it and the other to refer across. Note other comments about need for RIN spec at 100Mb/s.

Cl **60** *SC* **60.8.7.1** *P* **235** *L* **14** # **255**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
Add figure

SuggestedRemedy
Add figure similar to Clause 52 showing the test arrangement.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.7.2** *P* **236** *L* **8** # **560**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Wrong equation label

SuggestedRemedy
Option 1 Refer to and label equation in clause 60 series
Option 2 Replace "Equation (52 -1)" with "the equation:-"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Option 2 is probably best.

Cl **60** *SC* **60.8.7.3** *P* **236** *L* **11** # **257**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
Add equation number in order to be able to cross-reference it

SuggestedRemedy
Add equation number (60-1)

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE. See comment(s) for line 8.

Cl **60** *SC* **60.8.7.3** *P* **236** *L* **18** # **259**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
Remove space

SuggestedRemedy
Change "block ing" to "blocking"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.7.3** *P* **236** *L* **21** # **258**
Jonsson, Ulf Ericsson AB

Comment Type **T** *Comment Status* **D**
Sentence only valid for MMF components and thus is not applicable to the Clause 60 PMDs as they only specify SMF.

SuggestedRemedy
Remove sentence.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE. It depends if 59 will refer to this.

Cl **60** *SC* **60.8.7.3** *P* **236** *L* **8** # **256**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
Incorrect equation reference.

SuggestedRemedy
Change "Equation (52-1)" to "Equation (60-1)"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

But it's not the first equation in 60. Quoting the style guide, ""If the standard contains more than one equation, then equations of key importance should be numbered consecutively in parentheses at the right margin."" Consider deleting the reference number altogether. Note other similar comment(s).

Cl **60** *SC* **60.8.8** *P* **236** *L* **34** # **260**
Jonsson, Ulf Ericsson AB

Comment Type **T** *Comment Status* **D**
We need to cover existing components which usually specifies a high-frequency jitter in the range of 25 to 50 kHz.

There are two instances in the spec where we specify the jitter corner frequency:
1. Clause 60.8.9 (transmitted eye) - here it is used to insure that the a TRx does not pass jitter that have corner BW less than x kHz (corner mask is x kHz).
2. Clause 60.7 (jitter budget) - Here we spec a corner freq greater than x kHz.

With the above reasoning the 100M ad hoc has concluded that we should go for the lower value of 20 kHz.

SuggestedRemedy
"... less than or equal to 20 or 64 kHz" should be changed to "...less than or equal to 20 kHz"

Remove editor's note.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT. Note other similar comments.

Cl **60** *SC* **60.8.9** *P* **236** *L* **51** # **860**

Thatcher, Jonathan — World Wide Packets

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

It would be better to put this subsection into clause 59. Then it would be clear why there exists text referring to MMF.

SuggestedRemedy

Move to C59. If not, add notes that MMF is not applicable to C60. Better to just move it and reference it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Agreed that text related to MMF makes no sense in Clause 60.

The PMD STF needs to discuss what to do about this.

Cl **60** *SC* **60.8.9** *P* **236** *L* **53** # **531**

Dawe, Piers — Agilent

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

Spare text

SuggestedRemedy

The procedure tests for pattern dependent effects (but see below). For 100BASE-LX and 100BASE-BX, a standardised element of pattern dependent baseline wander is included in the reference channel.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Cl **60** *SC* **60.8.9** *P* **236** *L* **53** # **261**

Jonsson, Ulf — Ericsson AB

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

Make Clause 60 self-contained. Better to copy figure to Clause 60 rather than having a cross-reference to Clause 52.

SuggestedRemedy

Copy Figure 52-12 to Clause 60.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. In the copied figure, change 'reference receiver' to 'reference receiver front end' and indicate that the right hand group of four boxes are the 'reference receiver subsystem'.

Cl **60** *SC* **60.8.9** *P* **236** *L* **53** # **530**

Dawe, Piers — Agilent

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

Continuing attempts to improve readability. The suggested remedy is a rearrangement of the title and first paragraph.

SuggestedRemedy

60.8.9 Transmitter and dispersion penalty (TDP) measurement

The transmitter and dispersion penalty (TDP) measurement tests for transmitter impairments with chromatic effects for a transmitter to be used with single mode fiber, and for transmitter impairments with modal (not chromatic) dispersion effects for a transmitter to be used with multimode fiber. The procedure tests for pattern dependent effects (but see below). For 100BASE-LX and 100BASE-BX, a standardised element of pattern dependent baseline wander is included in the reference channel.

Transmitter and dispersion penalty may be measured with apparatus similar to Figure 52 - 12, consisting of a reference transmitter, the transmitter under test, a controlled optical reflection, an optical attenuator, a test fiber, and a reference receiver system containing a reference receiver front end (optical to electrical converter), a transversal filter to emulate multimode fiber, if appropriate, and a bit-error rate tester. All BER and sensitivity measurements are made with the test patterns specified for the PMD type.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This comment relates to comment 531

Consider rewording the suggested text "(but see below)" since this expression is a bit vague.

Cl **60** *SC* **60.8.9** *P* **237** *L* **2932** # **262**

Jonsson, Ulf — Ericsson AB

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

Remove text that has to do with MMF.

SuggestedRemedy

Change to the following text:
"fiber, and a reference receiver system containing a reference receiver front end (optical to electrical converter) and a bit-error rate tester. All BER and sensitivity measurements are made with the test patterns specified for the PMD type. This measurement tests for transmitter impairments with chromatic effects for a transmitter to be used with single mode fiber."

Proposed Response *Response Status* **W**

PROPOSED REJECT. Proposed reject (unless 59 abandons MMF). This material is used by 59.

Cl **60** *SC* **60.8.9** *P* **237** *L* **30** # **264**
Jonsson, Ulf Ericsson AB

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

The test pattern is defined in 60.8.1. Make the text clearer by referencing this test pattern.

SuggestedRemedy

Make a reference to 60.8.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. 'e.g. in 60.8.1.'

Cl **60** *SC* **60.8.9** *P* **238** *L* # **694**
Diab, Wael William Cisco Systems

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

TDP is the appropriate method for evaluating PMDs. Nonetheless, given the speed of these PMDs and the short-term desire to implement solutions (as expressed in the original proposal presentations), an informative that relates traditional measurement techniques to TDP may help bridge the gap.

SuggestedRemedy

Specify an informative correlation between the TDP measurements and the eye mask and/or the jitter numbers

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need more work

Cl **60** *SC* **60.8.9.1** *P* **237** *L* **42** # **271**
Jonsson, Ulf Ericsson AB

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

What does "mutatis mutandis" mean?

SuggestedRemedy

Change this phrase to something easier to understand.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Dictionary says 'With the necessary changes having been made'. It's no longer needed, change to 'as defined in 60.8.11.2'.

Cl **60** *SC* **60.8.9.1** *P* **237** *L* **45** # **532**
Dawe, Piers Agilent

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

RIN is more of an issue than I thought when combined with high probability baseline wander.

SuggestedRemedy

Tighten and clarify recommendation to "RIN12OMA should be .... -120 dB/Hz for 100 ... -125 for 1000..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The PMD STF needs to discuss this issue.

Cl **60** *SC* **60.8.9.2** *P* **238** *L* **7** # **263**
Jonsson, Ulf Ericsson AB

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

Remove text that has to do with MMF.

SuggestedRemedy

Remove the sentence "When emulating a multimode fiber link..."

Proposed Response *Response Status* **W**

PROPOSED REJECT. Proposed reject (unless 59 abandons MMF). This material is used by 59. Note other similar comments.

Cl **60** *SC* **60.8.9.3** *P* **238** *L* **36** # **267**
Jonsson, Ulf Ericsson AB

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

The optical return loss for 1400-1600 nm should be specified in the same way as for 1310 nm.

SuggestedRemedy

Add the text "See ORLT in Transmitter spec" into the optical reurn loss field for 1400-1600 nm.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Don't repeat, use merge/straddle. Add ORLT to abbreviations list, p226.

Cl **60** *SC* **60.8.9.3** *P* **238** *L* **36** # **533**
Dawe, Piers Agilent

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

SuggestedRemedy
Delete "(maximum)".

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.9.3** *P* **238** *L* **40** # **534**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **D**
Should reflection be at TP2 or TP3 (before or after a minimum loss)? Argument for TP2: allows for a bad connector. Argument for TP3: bad connector is not compliant, this spec is very conservative anyway.

SuggestedRemedy
Discuss (in ad hoc?)

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

The PMD STF needs to discuss this issue.

Cl **60** *SC* **60.8.9.3** *P* **239** *L* **1** # **268**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
-3dBe should be -3 dBm

SuggestedRemedy
Change -3dBe to -3 dBm

Proposed Response *Response Status* **W**
PROPOSED REJECT. Electrical dB, not dB wrt 1 mW. We could use dBo instead but we should specify which. Which unit is conventional for receiver response?

Cl **60** *SC* **60.8.9.3** *P* **239** *L* **16** # **270**
Jonsson, Ulf Ericsson AB

Comment Type **E** *Comment Status* **D**
Missing space

SuggestedRemedy
Change "20dB/decade" to "20 dB/decade"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **60** *SC* **60.8.9.3** *P* **239** *L* **6** # **861**
Thatcher, Jonathan World Wide Packets

Comment Type **TR** *Comment Status* **D**
the BER should be less than, not greater than 10e-3.
Also, in line 1, -3dBe ?

SuggestedRemedy
Change per comment

Proposed Response *Response Status* **W**
PROPOSED REJECT.

BERT alignment is more like CDR alignment at higher error rates on jitter bathtub. A more detailed explanation can be provided to the commentor if requested.

The -3dBe is addressed by comment 268

Cl **60** *SC* **60.8.9.3** *P* **239** *L* **912** # **269**
Jonsson, Ulf Ericsson AB

Comment Type **T** *Comment Status* **D**
Remove text that has to do with MMF.

SuggestedRemedy
Remove the paragraph starting with "For a transmitter to be used with multimode fiber..."

Proposed Response *Response Status* **W**
PROPOSED REJECT. Proposed reject (unless 59 abandons MMF). This material is used by 59. Note other similar comments.

Cl **60** *SC* **60.8.9.4** *P* **239** *L* **30** # **535**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **D**
The timing offset is likely to be PMD dependent.

SuggestedRemedy
Change "+- 0.05 UI" to "the amount specified in e.g. 60.7." Line 53, change to "at the specified timing offsets". Line 54, delete the sentence "Higher timing offsets may be necessary."

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Cl **60** *SC* **60.8.9.4** *P* **239** *L* **31** # **272**

Jonsson, Ulf — Ericsson AB

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

Make Clause 60 self-contained. Better to copy figure to Clause 60 rather than having a cross-reference to Clause 52.

SuggestedRemedy

Copy Figure 52-12 to Clause 60.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

And refer to the copy, of course. See comment to p236 line 53.

Cl **60** *SC* **60.8.9.4** *P* **239** *L* **40** # **538**

Dawe, Piers — Agilent

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

Here is the place to create a new subclause to explain how to obtain an approximate measure of TDP (although a standard is not expected to be a textbook nor a free consultancy service).

SuggestedRemedy

60.8.9.5 Approximate measures of TDP

In practice it may be necessary to do without the clock recovery unit at 100Mb/s. [are they available?] Experimentally, timing stability at this rate may be acceptable, and the jitter due to the CRU could be accounted for by adjusting the eye mask length and the TDP decision timing offsets.

A significant component of TDP is baseline wander. A wander of +- OMA/10 will be created by the receiver if it is not already present in the transmitted signal. Higher levels of pattern dependent penalty can be estimated from the mask margin (if necessary, by ignoring the upper and lower mask regions). The accuracy of this approach has not been established by the committee. Oscilloscope measurements at TP3 may be degraded by instrument noise.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Use the provided text with suitable modifications

Cl **60** *SC* **Table 60-1** *P* **226** *L* **18** # **230**

Jonsson, Ulf — Ericsson AB

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

The nominal wavelenghts for 100BASE-BX-ONU and 100BASE-BX-OLT have been mixed up.

SuggestedRemedy

Change Nominal wavelength for 100BASE-BX-OLT to 1550 nm.

Change Nominal wavelength for 100BASE-BX-ONU to 1310 nm.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

At the moment the table, which really is concerned with signals in two directions, doesn't say whether a signal is going FROM or TO a 100BASE-BX-xyz. If we have names for directions, use one straddled cell '100BASE-BX' under '100BASE-LX', insert another column, use the names of the directions, and something like 'both ways' for 100BASE-LX. If not, insert 'from' in front of the terminal type descriptors. And swap the wavelengths around per the comment.

Cl **60** *SC* **Table 60-10** *P* **232** *L* **20** # **244**

Jonsson, Ulf — Ericsson AB

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

'ps' should be 'ns' in the table.

SuggestedRemedy

Change 'ps' to 'ns' in two places in the table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Other comment(s) say the same.

Cl **60** *SC* **Table 60-12** *P* **238** *L* **30** # **265**

Jonsson, Ulf — Ericsson AB

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

Remove parts that has to do with MMF.

SuggestedRemedy

Remove the row "1310 nm band for MMF"

Proposed Response *Response Status* **W**

PROPOSED REJECT. Proposed reject (unless 59 abandons MMF). This material is used by 59. Note other similar comments.

Cl **60** *SC* **Table 60-14** *P* **246** *L* **5** # **285**

Jonsson, Ulf — Ericsson AB

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

Need to describe the fiber characteristics for 1550nm.

SuggestedRemedy

Ask the fiber experts how to describe SMF for 1550 nm use.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Just straddle the two dispersion entries across two columns and and insert an attenuation coefficient at 1550 nm (G.652 has 0.4).

Cl **60** *SC* **Table 60-4** *P* **229** *L* **17** # **231**

Jonsson, Ulf — Ericsson AB

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

We don't need to specify RIN for 100M. A RIN test is not necessary since it's covered by the TDP measurement.

SuggestedRemedy

Either remove the RIN_12_OMA from the table or, if people find it helpful, make an informative recommendation that RIN_12_OMA should be less than -110 dB/Hz.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. If we want to proceed cautiously, do the latter. Note other comments on same topic.

Cl **60** *SC* **Table 60-4** *P* **229** *L* **25** # **232**

Jonsson, Ulf — Ericsson AB

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

In the footnote, make a reference to how OMA is being calculated. This is explained in Clause 60.8.6.

SuggestedRemedy

Add the following text to the end of the footnote:
"..., see Clause 60.8.6"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(without 'Clause'). This footnote, or similar, occurs four times in three pages. An alternative approach would be to put the information as a NOTE at p228 line 49: 'In this and the next subclause, the specifications for OMA have been derived from extinction ratio and average launch power (min) or receive sensitivity [Or receiver sensitivity (max) or however we name it]. The calculation is explained in 60.8.6.'

Cl **60** *SC* **Table 60-5** *P* **229** *L* **47** # **287**

Radcliffe, Jerry — Hatteras Networks

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

The stressed receiver sensitivity is not appropriate for receivers operating over SMF at a 125Mbaud.

SuggestedRemedy

Remove the stressed receiver sensitivity test from Table 60-5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Retain test procedure text at this point. Make the requirement optional.

Removing the lines from the table is appropriate.

See comment 288.

Cl **60** *SC* **Table 60-5** *P* **229** *L* **51** # **233**

Jonsson, Ulf — Ericsson AB

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

In footnote 'a', make a reference to how OMA is being calculated. This should be explained in Clause 60.8.6.

SuggestedRemedy

Add the following text to the end of the footnote:
"..., see Clause 60.8.6"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See similar comment.

Cl **60** *SC* **Table 60-6** *P* **230** *L* **29** # **235**

Jonsson, Ulf — Ericsson AB

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

TS-1000 has the traditional SONET value of 8.2 dB. However, in order to allow true low-cost components a lower value is preferred. Besides, considering the baseline wander effect of the 4B/5B code a lower value is appropriate.

SuggestedRemedy

Extinction Ratio (min) = 6 dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. This comment has technical merit. The subject may need further study to understand the effect of the 4B/5B code and to bear in mind the desire for compatibility with TS-1000. Note another comment on same topic.

Cl **60** *SC* **Table 60-6** *P* **230** *L* **40** # **240**

Jonsson, Ulf — Ericsson AB

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

We don't need to specify RIN for 100M. A RIN test is not necessary since it's covered by the TDP measurement.

SuggestedRemedy

Either remove the RIN_12_OMA from the table or, if people find it helpful, make an informative recommendation that RIN_12_OMA should be less than -110 dB/Hz.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Note TS-1000 does not have a RIN spec. If we want to proceed cautiously, do the latter. Note other comments on same topic.

Cl **60** *SC* **Table 60-6** *P* **230** *L* **46** # **236**

Jonsson, Ulf — Ericsson AB

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

In the footnote, make a reference to how OMA is being calculated. This is explained in Clause 60.8.6.

SuggestedRemedy

Add the following text to the end of the footnote:
"..., see Clause 60.8.6"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See similar comment.

Cl **60** *SC* **Table 60-7** *P* **231** *L* **15** # **288**

Radcliffe, Jerry — Hatteras Networks

Comment Type **T** *Comment Status* **D** *DUP 287*

The stressed receiver sensitivity is not appropriate for receivers operating over SMF at a 125Mbaud.

SuggestedRemedy

Remove the stressed receiver sensitivity requirements from Table 60-7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment 287

Cl **60** *SC* **Table 60-7** *P* **231** *L* **18** # **237**

Jonsson, Ulf — Ericsson AB

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

In footnote 'a', make a reference to how OMA is being calculated. This should be explained in Clause 60.8.6.

SuggestedRemedy

Add the following text to the end of the footnote:
"..., see Clause 60.8.6"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See similar comment.

Cl **60** *SC* **Table 60-7** *P* **231** *L* **9** # **238**

Jonsson, Ulf — Ericsson AB

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

The power budget of 16dB for 100BASE-BX seems unnecessarily high.

SuggestedRemedy

Investigate the possiblity to relax the P_ave (min) and Rx sensitivity values.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See other comments on the same topic.

Cl **60** *SC* **Table 60-9** *P* **215** *L* **20** # **99050**

Dawe, Piers — Agilent

Comment Type **TR** *Comment Status* **R** *D1.0 #293*

As well as the minimum transmit power being be reduced, the sensitivity can be relaxed from -30 dBm, for 10 km (part of the difference is because this standard will likely define a sensitivity with the stressful test pattern, and sensitivity is pattern dependent with 4B/5B). This allows more budget for the WDM components (hidden from the standard behind the MDI). This is still a "mean power parallelogram" mean power oriented spec but I have expressed the minimum power in OMA also, like 100BASE-LX. Because the link attenuation is expected to differ at 1310 and 1550 nm, either the transmit power or sensitivity should differ for the two 100BASE-BX PMDs. Here I suggest making the sensitivities differ.

SuggestedRemedy

Pave -25 dBm at 6 dB extinction ratio = -24.2 dB OMA or 3.79 uW.

Proposed Response *Response Status* **U**

REJECT.

See comment 289

Cl **60** *SC* **Table 60-9** *P* **232** *L* **6** # **242**
Jonsson, Ulf Ericsson AB

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

Consider relaxation of the power budget.

SuggestedRemedy

10 dB?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. For discussion - see other comments. 10 may be too low.

Cl **60** *SC* **Table 60-9** *P* **232** *L* **8** # **243**
Jonsson, Ulf Ericsson AB

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

Set operating distance for 100BASE-BX-ONU to 10km.

SuggestedRemedy

Operating distance = 10000 m

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Merge (straddle) with the other. Use 10 km not 10000 m.

Cl **60** *SC* **Table 60-9** *P* **232** *L* **9** # **245**
Jonsson, Ulf Ericsson AB

Comment Type **T** *Comment Status* **D** *DUP 857*

We should strive to specify a common cable plant for all EFM P2P SMF PMDs.

SuggestedRemedy

Channel insertion loss (100BASE-BX-OLT) = 6 dB
Channel insertion loss (100BASE-BX-ONU) = 7 dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

It would be desirable to spec a common cable plant among all EFM P2P SMF PMDs. This needs discussion. What proportion of the cable plant will be shared or re-used for for different link types? Is 6 and 7 dB the right value or will the high number of splices in access plant imply a higher loss? Would value the operators' perspective. See other comments on this topic.

Cl **61** *SC* *P* **249** *L* **15** # **642**
Barrass, Hugh Cisco

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

Spelling error "aggragation"

(also on line 16)

SuggestedRemedy

Should be "aggregation"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.0** *P* **249** *L* **16** # **429**
Cravens, George Mindspeed

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

Under Abbreviations, "Aggregation" is misspelled.

SuggestedRemedy

Change "Aggragation" to "Aggregation"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.1** *P* **250** *L* **1** # **422**
Tzannes, Marcos Aware

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

2-PASS-TL and 2-BASE-TL address two separate market segments. 2-BASE-TL provides operation without underlying POTS service and therefore addresses the business market. 2-PASS-TL provides operation with underlying POTS service and therefore addresses the residential market.

SuggestedRemedy

The long-reach copper PHY EFM standard should specify two port types:
- Port type #1: 2-BASE-TL, long reach EFM for business customers (without underlying POTS) based on SHDSL.
- Port type #2: 2-PASS-TL, long reach EFM for residential customers (with underlying POTS) based on ADSL2.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

I recommend to make a change to the objectives of the Task Force.

Cl **61** *SC* **61.1.4.1** *P* **251** *L* **36** # **63**
Marris, Arthur Cadence Design Foun

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

Change the last sentence of the second paragraph to read "The MAC-PHY rate matching function adjusts the inter packet gap so that the net data rate ...."

SuggestedRemedy

as above

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.1.4.1** *P* **251** *L* **42** # **64**
Marris, Arthur Cadence Design Foun

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

MAC_PHY should be MAC-PHY

SuggestedRemedy

Change to MAC-PHY

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.1.4.1** *P* **251** *L* **47** # **926**
Tom Mathey Independent

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

Reword text for "collision" as "collision" has little meaning in full-duplex.

SuggestedRemedy

Change from "across the gamma interface to avoida collision on the MII interface if required." to "across the gamma interface to avoid simultaneous transfer of transmit and receive frames if required".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.1.4.1.1** *P* **252** *L* **18** # **643**
Barrass, Hugh Cisco

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

Needs to include reference to defining section for MAC PHY rate matching.

SuggestedRemedy

Add new sentence at end of final paragraph:

The definition of the MAC PHY rate matching specification is presented in subclause 61.2.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.1.4.1.1** *P* **252** *L* **18** # **927**
Tom Mathey Independent

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

If the MAC is not able to handle simultaneous transfer of transmit and receive frames while in half-duplex, then we may need to specify a minimum time from falling edge of transmit to rising edge of receive. For example, legacy MACs which share a CRC circuit may need some recovery time.

SuggestedRemedy

Specify, a number equal to a minimum IPG or TBD is suggested for now.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This subclause is only a summary, details such as this need to be in 61.2.1

Cl **61** *SC* **61.1.4.1.1** *P* **252** *L* **20** # **66**
Marris, Arthur Cadence Design Foun

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

Add "The definition of MAC-PHY rate matching is presented in subclause 61.2.1."

SuggestedRemedy

As above.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.1.4.1.1** *P* **252** *L* **5** # **65**
Marris, Arthur Cadence Design Foun

Comment Type **E** *Comment Status* **D**
tx_en should be upper case

SuggestedRemedy
Change "tx_en" to "TX_EN"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **61** *SC* **61.1.4.2** *P* **252** *L* **41** # **316**
Barnea, Eyal Metalink

Comment Type **E** *Comment Status* **D**
Second sentence of the first paragraph adds no relevant information.

SuggestedRemedy
delete the sentence

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Change second sentence to:

PHY's implementing both 2BASE-TL/2PASS-TL and 10PASS-TS port types can use G.994.1 to handshake between the two port types.

Cl **61** *SC* **61.1.5.6** *P* **253** *L* **34** # **698**
Diab, Wael William Cisco Systems

Comment Type **E** *Comment Status* **D**
The subclause simply has a pointer to another subclause with no other information.

SuggestedRemedy
Remove the pointer/section and/or add text to differentiate between the 2 subclauses

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **61** *SC* **61.2** *P* *L* # **817**
O'Mahony, Barry Intel Corp.

Comment Type **T** *Comment Status* **D**
Framing and encapsulation method using PTM TPS-TC does not meet constant overhead and robustness requirements.

SuggestedRemedy
Adopt new TPS-TC as described in accompanying presentation.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Baseline proposal must be adopted as basis for next draft.

Cl **61** *SC* **61.2.1.2.1** *P* **253** *L* **34** # **699**
Diab, Wael William Cisco Systems

Comment Type **E** *Comment Status* **D**
The table refernce has no introduction

SuggestedRemedy
Please add a sentence introducing the table and describing its purpose

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Change subclause to read

MII signals are defined in Table 23.2.2.1.

Cl **61** *SC* **61.2.1.2.2** *P* **253** *L* **40** # **644**
Barrass, Hugh Cisco

Comment Type **E** *Comment Status* **D**
EFM copper PHY management is defined using Clause 45 access.

SuggestedRemedy
Change subclause to read:

The management interface has pervasive connections to all functions. Operation of the management control lines MDC and MDIO is specified in Clauses 22 and 45, and requirements for managed objects inside the PCS and PMA are specified in Clause 30.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **61** *SC* **61.2.1.3** *P* **254** *L* **1** # **68**

Marris, Arthur — Cadence Design Foun

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

Most deployments with exposed MAC-PHY interfaces are likely to use SMII or RMII. This is because low cost ethernet switch silicon will be used to aggregate links from multiple subscribers in the CO. These chips use SMII and RMII which in order to save having a separate collision signal infer collision from TX_EN and CRS. A minor modification to the MAC-PHY rate matching state diagrams is needed to support RMII and SMII.

SuggestedRemedy

I have supplied separately a document with the new state diagrams.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.2.1.3** *P* **254** *L* **1** # **67**

Marris, Arthur — Cadence Design Foun

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

A comment was submitted and approved in New Orleans against draft 1.0 to insert state diagrams here. This comment has not been acted on.

SuggestedRemedy

Please insert the state diagrams as agreed during comment resolution in New Orleans.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.2.2** *P* **255** *L* **10** # **435**

Cravens, George — Mindspeed

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

Figure 61-2 shows "PHY Loop Aggregation". This should be "PHY PMI Aggregation" to match the text.

SuggestedRemedy

Revise Figure 61-2, changing the text "PHY Loop Aggregation" to "PHY PMI Aggregation".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.2.2.2** *P* **255** *L* **32** # **219**

Squire, Matt — Hatteras Networks

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

Current loop aggregation doesn't match accepted proposal of last meeting.

SuggestedRemedy

See PDF and FM file submitted to editor.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Will be presented at STF.

Cl **61** *SC* **61.2.2.3** *P* **257** *L* **5** # **645**

Barrass, Hugh — Cisco

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

(approved) Comment on previous draft has not been actioned.

The maximum latency difference between aggregated loops must be specified.

SuggestedRemedy

Same remedy as previously accepted:

The PMD control of aggregated links must ensure that the maximum latency difference between any two aggregated links correponds to no more than 64,000 bit times. This must be achieved by adjusting the bit rate, error correction and interleaving functions in the PMA/PMD of each link. Note that the burst noise protection offered by the error correction and interleaving functions is directly proportional to the latency, therefore it is logical that multiple aggregated links in the same environment should be optimized to have the similar latencies.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.2.2.3.1** *P* **256** *L* **1** # **647**

Barrass, Hugh — Cisco

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

This section (which is modified by previous comment) does not belong in this subclause.

SuggestedRemedy

Move last paragraph of this subclause to subclause 61.2.2.3 PHY PMI aggregation receive function.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61** *SC* **61.2.2.3.1** *P* **256** *L* **32** # **646**

Barrass, Hugh Cisco

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

Error detecting rules are not complete.

Entire section needs to be rewritten - note that this is independant of header and functional changes agreed at last meeting

SuggestedRemedy

Change subclause to the following:

61.2.2.3.1 Error-detecting rules

The receive TC function passes all frames to the PAF across the gamma interface. If the TC detects an error in the encapsulation, it asserts RxErr during the frame transmission on the gamma interface.

For each PMA (gamma interface), the per PMA buffering mechanism must discard the fragment if any of the following conditions occur:

RxError is asserted during the reception of the fragment across the gamma interface.
The fragment is too small - less than minFragmentSize as defined TBD.
The fragment is too large - more than maxFragmentSize as defined TBD.
The fragment would cause the per PMA received buffer to overflow.

The PAF must then assert one of the per PMA error flags as appropriate:

TC_PAF_RxErrorReceived; TC_PAF_FragmentTooSmall; TC_PAF_FragmentTooLarge; TC_PAF_Overflow.

Additionally the packet assembly function must detect the following errors:

If the nextFragmentSequenceNumber is less than the expectedFragmentSequenceNumber (or greater than expectedFragmentSequenceNumber + 2^11) then assert PAF_BadFragmentReceived.

If all active PMA buffers are non empty and nextFragmentSequenceNumber is greater than expectedFragmentSequenceNumber then assert PAF_LostFragment, set expectedFragmentSequenceNumber equal to nextFragmentSequenceNumber.

If any PMA buffer is non empty for 64k bit times (for that PMA/PMD) and no fragment is transferred then assert PAF_LostFragment, set expectedFragmentSequenceNumber equal to nextFragmentSequenceNumber.

Having detected one of the above errors, the packet assembly function must act as follows:

If the packet assembly function was mid-frame (i.e. waiting for an End of Packet), assert RxError signal on MII interface, abort frame transfer and flush PMA buffers until the next Start of Packet is received.

If the packet assembly function was between frames (i.e. waiting for a Start of Packet), assert RxError signal on the MII interface, send 64 byte garbage frame with forced FCS error to MAC, flush PMA buffers until the next Start of Packet is received.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Need to be discussed at STF.

Cl **61** *SC* **61.2.2.3.1** *P* **256** *L* **50** # **431**

Cravens, George Mindspeed

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

At line 47, the clause states that (paraphrased): the PAF shall discard MAC frames with fragment errors. However, at line 50, the PAF is required to send a "garbage frame":

"If any PHY does not provide a non-errored fragment with the current MAC frame count then the PAF shall send 64 byte garbage frame to the MAC and discard all non-errored fragments with the current MAC Frame counter. In this case the PAF shall construct a 64 byte MAC frame with an FCS/CRC error and send this frame to the MAC-PHY Rate Matching function."

This is inconsistant with the previous two requirements (than only non-errored frames be passed up to the MAC layer.

SuggestedRemedy

Delete the requirement for generation of "garbage frames", and require that any time a frame is dropped due to errors, the FragmentError.indicate primitive (61.2.2.4.2, pg. 257, Line 26) will be used to allow the upper layer to count dropped frames.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

PHY should not drop or discard frames.

Cl **61** *SC* **61.2.2.3.1** *P* **257** *L* **5** # **976**

Vladimir Oksman Broadcom

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

There also should be specified how long should be the waiting time after which the receiver makes a decision that some fragments of the frame are lost. Otherwise, the system may get suspended.

SuggestedRemedy

Add a value or an editor note to define this parameters in the future.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Comment 645 covers this.

Cl **61** *SC* **61.2.2.4.2** *P* **257** *L* **26** # **648**

Barrass, Hugh — Cisco

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

The error signal specified here is not relevant as there is no specified interface between the PAF and the MAC-PHY rate matching function.

However, a number of error indicators are needed by the management entity to maintain required counters.

SuggestedRemedy

Replace paragraph with the following:

TC_PAF_RxErrorReceived: (for each PMA, gamma interface) this primitive is asserted to indicate that a fragment has been received across the gamma interface with RxErr asserted. The errored fragment has been discarded.

TC_PAF_FragmentTooSmall: (for each PMA, gamma interface) this primitive is asserted to indicate that a fragment has been received across the gamma interface which was smaller than the minFragmentSize defined. The errored fragment has been discarded.

TC_PAF_FragmentTooLarge: (for each PMA, gamma interface) this primitive is asserted to indicate that a fragment has been received across the gamma interface which was larger than the maxFragmentSize defined. The errored fragment has been discarded.

TC_PAF_Overflow: (for each PMA, gamma interface) this primitive is asserted to indicate that a fragment has been received across the gamma interface which would have caused the receive buffer to overflow. The errored fragment has been discarded.

PAF_BadFragmentReceived: this primitive is asserted to indicate that a fragment has been received which does not fit into the sequence expected by the frame assembly function. The errored fragment has been discarded and the frame buffer flushed to the next valid frame start.

PAF_LostFragment: this primitive is asserted to indicate that a fragment expected according to sequence has not been received by the frame assembly function. The missing fragment has been skipped and the frame buffer flushed to the next valid frame start.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Need to get agreement at STF.

Cl **61** *SC* **61.2.2.4.3** *P* **257** *L* # **928**

Tom Mathey — Independent

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

The use of multiple MII's is not well described. Also on p258, line 37.
For multiple MIIs, we would need clause 45 registers and bits to describe how many, provide ability bits, provide selection or enable/disable bits, provide a description of how a sub-layer would map to or choose a particular MII and MAC for both transmit and receive paths, how to map a given MII and its PCS to specific PMD's, etc.

SuggestedRemedy

Nuke.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This definition was accepted based on presentation. Clause 45 defines access and function of registers.

Cl **61** *SC* **61.2.2.6.2** *P* **259** *L* **40** # **432**

Cravens, George — Mindspeed

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

MACFrameLen parameter should refer to the maximum allowable frame length (from another section of the standard) rather than using a fixed number since the maximum frame length may change in the future (for example: there is talk of stacked VLAN tags in 802.1 and other places).

SuggestedRemedy

Change 1522 to the proper parameter (and clause reference) for maximum frame length.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Ethernet frames (as defined in Clause 3) are not longer than 1522 octets. Other implemetations are out of scope.

Cl **61** *SC* **61.2.3.1.1** *P* **264** *L* **1** # **649**

Barrass, Hugh Cisco

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

Signal PCS_link_state is required by the PMA Aggregation Function. This signal must cross the gamma interface from the TC to the PMT to indicate that the link is active for the PAF.

SuggestedRemedy

Add paragraph:

An additional signal is required which would be represented in the referenced document section H.3.1.4.

signal: PCS_link_state
size: 1 bit
direction: TC -> PTM entity
description: control signal asserted when link is active and framing has synchronized according to the definition in subclause 61.2.3.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. It can be implementation dependent, need to discuss at STF.

Cl **61** *SC* **61.2.3.1.1** *P* **264** *L* **4** # **650**

Barrass, Hugh Cisco

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

Gamma interface is not completely defined, some additional definition is allowed to make the definition acceptable.

SuggestedRemedy

Add paragraphs:

The TC shall assert Tx_Enbl when it has sufficient space for an entire (max length) frame to be transferred across the gamma interface at the net rate of the MII interface. The TC must keep Tx_Enbl signal asserted until the last byte of the frame is transferred across the gamma interface. If Tx_Enbl remains asserted after the last byte of the frame then another frame may be transferred across the gamma interface after the inter packet gap.

The TC shall assert Rx_Enbl when it has an entire frame ready to be transferred (or enough of the frame that it can guarantee that the entire frame will be ready for transfer) across the gamma interface at the net rate of the MII interface. The TC must keep Rx_Enbl signal asserted until the last byte of the frame is transferred across the gamma interface. If Rx_Enbl is deasserted before the end of the frame then this must be treated as a receive abort.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Detail technical - need to be discussed at STF. The commentn may redefine gamma interface, so it looks like MII interface.

Cl **61** *SC* **61.2.3.1.1** *P* **264** *L* **4** # **651**

Barrass, Hugh Cisco

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

Accepted comment 644 has not been implemented. The signals required for remote access to PAF registers have not been specified.

SuggestedRemedy

Add paragraph:

Additional signals are required for OAM flow (which would be relevant to referenced document section H.3.1.4). These signals allow access from the TC to the PTM entity (PCS) for reading and writing PHY loop aggregation registers. The following definitions should be tabulated:

signal: write_remote_aggregation_reg
size: 1 bit
direction: TC -> PTM entity
description: control signal to write PMD_aggregation_register. Active (min) 1 octet clock cycle.

signal: write_remote_discovery_reg
size: 1 bit
direction: TC -> PTM entity
description: control signal to write remote_discovery_register. Active (min) 1 octet clock cycle.

signal: clear_remote_discovery_reg
size: 1 bit
direction: TC -> PTM entity
description: control signal to clear remote_discovery_register. Active (min) 1 octet clock cycle.

signal: read_remote_aggregation_reg
size: 1 bit
direction: TC -> PTM entity
description: control signal to read PMD_aggregation_register. Active (min) 1 octet clock cycle.

signal: read_remote_discovery_reg
size: 1 bit
direction: TC -> PTM entity
description: control signal to read remote_discovery_register. Active (min) 1 octet clock cycle.

signal: remote_write_data_bus
size: 48 bit
direction: TC -> PTM entity
description: data bus for writing to PMD loop aggregation registers. Valid during octet clock cycle when write control is asserted.

signal: remote_read_data_bus

size: 48 bit
direction: PTM entity -> TC
description: data bus for the results of a read or atomic write function. Valid during octet clock cycle when Acknowledge_read_write or NAcknowledge_read_write is asserted.

signal: Acknowledge_read_write
size: 1 bit
direction: PTM entity -> TC
description: control signal responding (positively) to read or write. Active 1 octet clock cycle.

signal: NAcknowledge_read_write
size: 1 bit
direction: PTM entity -> TC
description: control signal responding (negatively) to read or write. Active 1 octet clock cycle.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Too much material, need to be reviewed by STF.

Cl **61** *SC* **61.2.3.1.2** *P* **264** *L* **22** # **652**

Barrass, Hugh Cisco

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

Link synchronization state must be passed upwards across the alpha/beta interface.

SuggestedRemedy

Add paragraph:

The following signals must be passed across the alpha/beta interface to allow the TC to understand the current link status of the PMA.

signal: PMA_receive_synchronized
size: 1 bit
direction: PMA -> TC
description: signal indicates that the receive function is synchronized and valid data is being passed upwards across the alpha/beta interface.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **61** *SC* **61.2.3.1.2** *P* **264** *L* **22** # **653**

Barrass, Hugh Cisco

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

Receive error signal must be passed upwards across the alpha/beta interface.

SuggestedRemedy

Add paragraph:

signal: PMA_FEC_uncorrected_error
size: 1 bit
direction: PMA -> TC
description: Where appropriate, this signal indicates that the Forward Error Correction function (if present) in the PMA has detected, but not corrected an error or errors in an FEC frame. Thi ssignal must be asserted for the duration of the FEC frame in which uncorrectable errors were detected.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. This may not be needed especially if there is no real interface and more of internal interface between logical blocks.

Cl **61** *SC* **61.2.3.1.2** *P* **264** *L* **5** # **977**

Vladimir Oksman Broadcom

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

The alpha/beta interface is already defined in Clause 62.

SuggestedRemedy

Either change the reference to the appropriate section in 62 or (even better) move the definition from 62 and place there a reference.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is the appropriate place to include reference for alpha/beta interface. Comments may change Clause 62 to refer to this section.

Cl **61** *SC* **Fig. 61-3** *P* **259** *L* **8** # **430**

Cravens, George — Mindspeed

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

The PMI Aggregation section (Starting with Subclause 61.2.2.1, pg. 255), does not reflect the changes voted on during the last interim meeting (New Orleans).
At the interim meeting, it was decided to incorporate the changes proposed in Squire_copper_1_0902.pdf into the next (this) draft. These changes include a single sequence number.

SuggestedRemedy

Revise the PMI Aggregation section to reflect the changes proposed in Squire_Copper_1_0902.pdf. These changes include the use of a single sequence number in the header, and the removal of the requirement to wait until there is "no backpressure" (61.2.2.2, pg. 255, line 43). While only Fig. 61-3 is called out above, the change involves multiple subclauses.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Comment 219 already covers this.

Cl **61** *SC* **Fig. 61-4** *P* **261** *L* **22** # **433**

Cravens, George — Mindspeed

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

Change LAF to PAF to match text.

SuggestedRemedy

Change LAF to PAF (possibly numerous occurrances in the clause).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **61A** *SC* *P* **282** *L* # **99012**

Wei, Dong — SBC Communications,

Comment Type **TR** *Comment Status* **D** *D1.0 #413*

The insertion of Annex 61A into the draft was never approved by either the Task Force (TF) or the Copper sub-TF. It is inappropriate for the editor to input anything that is not approved by the TF into the draft. This is a serious problem and it should not occur again.

SuggestedRemedy

Delete the entire clause.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is only an informative annex. All editors had been given the same level of flexibility.

Cl **61A** *SC* *P* **282** *L* **1** # **99013**

Vladimir Oksman — Broadcom

Comment Type **T** *Comment Status* **D** *D1.0 #441*

Irrelevant material

SuggestedRemedy

Exclude this clause. The material of this clause is irrelevant for the future standard. This material was never discussed and there was no agreement to include it into the draft.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by 99012

Cl **61A** *SC* *P* **316** *L* # **641**

WEI, DONG — SBC Communications,

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

This comment replaces Comment #413 on Draft 1.0.

Demonstration of how to define new PSDs and how to show their spectral compatibility is beyond the scope of this standard.

SuggestedRemedy

Delete the entire clause (from Page 316 to Page 320).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Clause covered by 99012

Cl **61A** *SC* *P* **316** *L* **1** # **311**

Barnea, Eyal — Metalink

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

The content of this annex was never discussed or presented

SuggestedRemedy

Delete the annex

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by 99012

Cl **61A** *SC* **61A** *P* **316** *L* **1** # **306**

Shohet, Zion Infineon

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

This section has never been discusses in the STF.
This section is also not included in simon_copper_1_0902.pdf, which lists all sub-clauses in the document, and which was adopted last meeting.

SuggestedRemedy

remove this section

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by 99012

Cl **61A** *SC* **annex 61A** *P* **282** *L* **1** # **99014**

Zion Shohet Infineon

Comment Type **E** *Comment Status* **D** *D1.0 #209*

this annex should be removed. It has never been discussed, nor presented, nor agreed upon. The information within this text is not a std anywhere.
This annex should be removed.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by 99012

Cl **61A** *SC* **Entire Annex** *P* **282** *L* **1** # **99015**

Cook, Charles Qwest

Comment Type **TR** *Comment Status* **D** *D1.0 #506*

Annex 61A shall be completely removed for the following reasons:
- Annex 61A is based upon North American spectrum management requirement (draft T1.417 issue2) and may not be applicable to other regions;
- Annex A of draft T1.417 issue2, where the section "Spectral compatibility guideline" is from, provides a tool for the PSD definition in new technology development to check spectrum compatibility. And there is no need to include the partial portion of such tool in a final standard of a new technology. Additionally, there is much information needed to assure the proper use of Annex A of draft T1.417 issue2, partial quotation of draft T1.417 issue2 could potentially be misleading;
- The example in Annex 61A is irrelevant to the final IEEE 802.3ah standard and potentially misleading.

SuggestedRemedy

Completely remove Annex 61A and submit it as a contribution so that it can be deliberated by the committee. Only material that has been agreed upon should be included in drafts of the document.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by 99012

Cl **62** *SC* *P* **321** *L* # **313**

Barnea, Eyal Metalink

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

Add abbreviation to QAM

SuggestedRemedy

QAM - Quadrature Amplitude Modulation

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* *P* **321** *L* **9** # **312**

Barnea, Eyal Metalink

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

No need to reference T1E1.4/099 as T1.424 is referenced

SuggestedRemedy

Delete the line

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **1.2** *P* **322** *L* **13** # **223**
Gustafsson, Jonas Ericsson

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

Is this correct? Should it not be 10Mbps?

SuggestedRemedy

Change from 2Mbps to 10Mbps.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **4.3** *P* **342** *L* **53** # **227**
Gustafsson, Jonas Ericsson

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

If T1.424/Tial-Use Part 3 standard is used in North America, this is a correct assumption. Hence, the statement is only valid in this case.

SuggestedRemedy

Replace with:
b) For operation in North America 10PASS-TS must be configured to use Plan A defined in 62.7.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
We expect in some cases other bandplans to be used in the US.

Note subclause reference should be 62.4.3

Cl **62** *SC* **4.5.2.2** *P* **344** *L* **19** # **225**
Gustafsson, Jonas Ericsson

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

Plan D can't be found in any table currently defined.

SuggestedRemedy

Add definition of Plan D (in table 62-12-10) or remove from line 19 in subclause 62.4.5.2.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete reference to plan D in 62.4.5.2.2

Cl **62** *SC* **4.5.2.2** *P* **344** *L* **9** # **224**
Gustafsson, Jonas Ericsson

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

The evaluated expression for NSC does not match the actual maximum number of subcarriers intended for 10PASS-TS.

SuggestedRemedy

Change expression: from NSC=2n+8 to NSC=2*exp(n+8)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

That should be written 2^(n+8)

Cl **62** *SC* **4.6** *P* **318** *L* **46** # **99016**
Gustafsson, Jonas Ericsson

Comment Type **T** *Comment Status* **D** *D1.0 #171*

Annex 61A describes spectrum compatibility according to two specific band plans (sets of PSD templates). Only one of these are defined in the subclause 62.4.6 (text and tables of PSD - frequency samples).
The existing templates are collected from the section 61 of the ANSI standard T1.417. This document does not reflect the spectrum compatibility issues outside US. Hence, severely restrict the market potential of this standard.

SuggestedRemedy

It is recommended to add text and sets of PSD templates according to European requirements. Such information can be found in section 5.1.1 of ETSI TS 101 270-2 V1.1.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Review Annex 62A, it should be covered there.

Not relevant to new version. Further proposed changes must be explicit.

Cl **62** *SC* **62.1** *P* **322** *L* **5** # **654**
Barrass, Hugh Cisco

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

Section number missed out in second sentence of preamble

SuggestedRemedy

Change to:

Similarly, sections 62.4 and 62.5(DMT PMD functional specifications and SCM PMD functional specifications) are mutually exclusive.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.1.2** *P* **322** *L* **13** # **978**

Vladimir Oksman Broadcom

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

2 Mb/s is mentioned instead 10. It is not clear that full duplex operation should be with 10 Mb/s. Also, the MII in EFM application actually operates in half duplex mode.

SuggestedRemedy

Clarify the wording, with meaning “10Mb/s simultaneously in both directions”.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The wording (as modifed by comment 223) has already been accepted.

Cl **62** *SC* **62.1.2** *P* **322** *L* **13** # **655**

Barrass, Hugh Cisco

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

Data rate is incorrect (typo) from previous comment.

SuggestedRemedy

Change data rate from 2Mbps to 10Mbps.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.1.2** *P* **322** *L* **15** # **656**

Barrass, Hugh Cisco

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

List of objectives is not enumerated correctly.

SuggestedRemedy

Third line should be c), fourth line should be d)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.1.2** *P* **322** *L* **17** # **657**

Barrass, Hugh Cisco

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

Third line of objectives does not match Task Force objective

SuggestedRemedy

Change line to:

c) To provide for operating over non-loaded voice grade twisted pair cable at distances up to 750m.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.1.4** *P* **322** *L* **25** # **308**

Shohet, Zion Infineon

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

This section is a general one, while figure 62-1 is a DMT PMA block digram. Need a different reference/Figure.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy.

Cl **62** *SC* **62.1.4** *P* **322** *L* **26** # **314**

Barnea, Eyal Metalink

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

Refernce to figure 62-1 is wrong , since this is a DMT-PMA functional diagram and not a general functional diagram

SuggestedRemedy

Add a new diagram for the PMA functional model,

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need a specific remedy.

Cl **62** *SC* **62.1.4.1** *P* **322** *L* **32** # **979**
Vladimir Oksman Broadcom

Comment Type **E** *Comment Status* **D**
Terminology VTU-O, VTU-R is not introduced and may be actually not appropriate here.

SuggestedRemedy
Clarify definitions of the system parts and link them clearly with VDSL standards if necessary.

Proposed Response *Response Status* **W**
PROPOSED REJECT.

Need specific remedy.

Cl **62** *SC* **62.1.4.1.1** *P* **322** *L* **45** # **660**
Barrass, Hugh Cisco

Comment Type **E** *Comment Status* **D**
Data signals are not shown in a table.

SuggestedRemedy
Delete sentence:

The data flow signals are described in Table 62–1.

Proposed Response *Response Status* **W**
PROPOSED REJECT.

Commnet 315 covers this

Cl **62** *SC* **62.1.4.1.2** *P* **322** *L* **54** # **658**
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **D**
Link synchronization state must be passed upwards across the alpha/beta interface.

SuggestedRemedy
Add line:

e) Receive PMA state machine sychnronized (PMA_receive_synchronized)

Additionally, the signal must be added to the table (Table 62.1)

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE. Needs more discussion at STF.

Cl **62** *SC* **62.1.4.1.2** *P* **322** *L* **54** # **659**
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **D**
Receive error signal must be passed upwards across the alpha/beta interface.

SuggestedRemedy
Add line:

f) Receive Forward Error Correction detected but not corrected error, asserted for the whole FEC frame in which the error is detected (PMA_FEC_uncorrected_error)

Additionally, the signal must be added to the table (Table 62.1)

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **62** *SC* **62.1.4.1.2** *P* **323** *L* # **315**
Barnea, Eyal Metalink

Comment Type **E** *Comment Status* **D**
data stream signals are missing in Table 62-1

SuggestedRemedy
Add Tx_s and Rx_s signals to the table

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **62** *SC* **62.1.4.1.2** *P* **323** *L* **1** # **980**
Vladimir Oksman Broadcom

Comment Type **E** *Comment Status* **D**
Table 62-1 doesn't include the data flow signals.

SuggestedRemedy
Add data flow signals TX_s, Rx_s to the Table.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **62** *SC* **62.1.4.1.2** *P* **323** *L* **17** # **661**

Barrass, Hugh Cisco

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

Table reference is wrong.

SuggestedRemedy

Change sentence to:

The synchronization flow signals are described in Table 62–1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.1.4.1.2** *P* **323** *L* **27** # **981**

Vladimir Oksman Broadcom

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

Wrong reference, should be “Table 62-1”.

SuggestedRemedy

Fix the reference.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.1.4.1.3** *P* **323** *L* **25** # **662**

Barrass, Hugh Cisco

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

OAM flow description should match Clause 61.

SuggestedRemedy

Replace sentence with:

OAM Information flow across the gamma interface will support access to the registers defined in Clause 45. Refer to Clause 45 for a complete description of access to TC, PMA and PMD registers from the MDIO interface.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.2.3** *P* **325** *L* # **819**

Simon, Scott Cisco Systems, Inc.

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

The FEC mechanism defines two variables K and R. The current text states that there are mulitple optional values for these variables. The draft should select one setting.

SuggestedRemedy

Change the text to fix R at 16 (as given in the two "mandatory" settings).
The text should be changed to fix K at either 128 or 224. The TF should discuss and decide on one value. If the value cannot be decided, fix it as TBD for the next draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The text will be changed to fix the value of K as TBD.

An editor's note will be added as follows:

The value of K will be fixed to 128 or 224 or more TBDs acccording to the decision of the STF before submission to WG ballot.

There is no reason to fix this at this point.

Cl **62** *SC* **62.3** *P* **332** *L* **2** # **295**

Shohet, Zion Infineon

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

Add text to indicate that reference to other documents is used in this sub-clause

SuggestedRemedy

Add the following directly after the sub-clause title:
"The SCM PMA functionality is specified by incorporating the following references:
- Reference 1-1: T1.424/Trial-Use standard Part 1
- Reference 1-2: T1.424/Trial-Use standard Part 2
- Reference 2: ITU-T G.993.1
- Reference 3-1: ETSI TS 101 270-1
- Reference 3-2: ETSI TS 101 270-2 "

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.3.2** *P* **332** *L* **50** # **296**
Shohet, Zion Infineon

Comment Type **E** *Comment Status* **D**
make reference to T1E1

SuggestedRemedy
1- Change title to: PMA Frame Format, reference 1-2 section 7.2.3.1
2- Replace text and figure in this section by: "Stet, with the exception that only Slow channel is applicable, i.e. F=0 "

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **62** *SC* **62.3.2.1** *P* **333** *L* **32** # **297**
Shohet, Zion Infineon

Comment Type **E** *Comment Status* **D**
make reference to T1E1

SuggestedRemedy
Replace the text and figures 62-6 & 62-7 of this section by:
"The Sub-frame structure is identical to the Slow codeword defined in Reference 1-2 section 7.2.3.3, with the exception that only "single latency" is applicable."

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **62** *SC* **62.3.2.1** *P* **333** *L* **40** # **663**
Barrass, Hugh Cisco

Comment Type **E** *Comment Status* **D**
Figure 62-6 shows variable size frame which is not relevant to this standard.

SuggestedRemedy
Delete word "max"

Change "P octets" to "181 octets"

Also, change "FEC 16 ctets" to "FEC 16 octets"

Proposed Response *Response Status* **W**
PROPOSED REJECT.

Not relevant if comment 296 accepted

Cl **62** *SC* **62.3.2.1** *P* **333** *L* **47** # **664**
Barrass, Hugh Cisco

Comment Type **E** *Comment Status* **D**
Reference to variable frame size needs to be removed.

SuggestedRemedy
Change phrase to:

a payload field of 181 octets,

Proposed Response *Response Status* **W**
PROPOSED REJECT.

Not relevant if comment 296 accepted

Cl **62** *SC* **62.3.2.1** *P* **334** *L* **1** # **982**
Vladimir Oksman Broadcom

Comment Type **E** *Comment Status* **D**
There is no “EOC” defined in this standard. There is no Reference for VOC. Same about the next two paragraphs.

SuggestedRemedy
Either remove EOC or add reference to it. Add reference to VOC

Proposed Response *Response Status* **W**
PROPOSED REJECT.

Refences to EOC and VOC are contained in 62.3.2.1.1 and 62.3.2.1.2

Cl **62** *SC* **62.3.2.2.1** *P* **334** *L* **52** # **298**
Shohet, Zion Infineon

Comment Type **E** *Comment Status* **D**
remove the editor's note.

SuggestedRemedy

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **62** *SC* **62.3.2.2.2** *P* **337** *L* **3** # **299**
Shohet, Zion Infineon

Comment Type **E** *Comment Status* **D**
Remove reference to NTR.

SuggestedRemedy
Change text to: " The Control-1 octet contains the o/r_trig ....."

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **62** *SC* **62.3.2.2.3** *P* **335** *L* **38** # **301**
Shohet, Zion Infineon

Comment Type **E** *Comment Status* **D**
The editor's note should be deleted

SuggestedRemedy

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **62** *SC* **62.3.2.2.3** *P* **335** *L* **38** # **665**
Barrass, Hugh Cisco

Comment Type **E** *Comment Status* **D**
Editor's note should be removed.

This editor's note is not relevant for this subclause, and is no longer relevant for subclause 62.3.2.2.2 (where it should have been placed).

The description of the NTR reserved bit in control word 1 will allow out of scope implementations to use NTR as defined elsewhere.

SuggestedRemedy
Remove editor's note.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **62** *SC* **62.3.2.2.3** *P* **335** *L* **45** # **302**
Shohet, Zion Infineon

Comment Type **E** *Comment Status* **D**
Table 62-8 should be here.

SuggestedRemedy

Proposed Response *Response Status* **W**
PROPOSED REJECT.

Table 62-8 will not fit (and we cannot restrict the page layout to a fine extent). Paragraph contains a reference to Table 62-8.

Cl **62** *SC* **62.3.2.2.6** *P* **336** *L* **49** # **666**
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **D**
There is no reason why this state machine should be "recommended" instead of simply "described."

SuggestedRemedy
Change from:

A recommended frame delineation state machine is presented here.

to:

The frame delineation state machine is presented here.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **62** *SC* **62.3.2.2.6** *P* **336** *L* **49** # **305**
Shohet, Zion Infineon

Comment Type **E** *Comment Status* **D**
add reference to T1e1

SuggestedRemedy
1- Change text from "... here." to "...in reference 1-2 section 11"
2- Delete rest of text and figure 62-8, on page 337.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **62** *SC* **62.3.2.2.6** *P* **337** *L* **14** # **667**

Barrass, Hugh Cisco

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

The values of "n" and "m" are defined elsewhere in the text, there is no need to use variables.

SuggestedRemedy

Replace n by 2.

Replace m by 6.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Not relevant if comment 305 accepted.

Cl **62** *SC* **62.3.2.2.6** *P* **337** *L* **33** # **668**

Barrass, Hugh Cisco

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

Variables, n and m, are defined as constants - which makes them redundant

SuggestedRemedy

change paragraphs to the following:

The state machine moves from the PRESYNC state to the SYNC state when the frame Sync_Event occurs consecutively 2 times. If a violated Sync_Event occurs during the PRESYNC state, the state machine returns to the HUNT state.

The state machine moves from the SYNC state to the HUNT state when the frame Sync_Event is violated consecutively 6 times.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Not relevant if comment 305 accepted.

Cl **62** *SC* **62.3.2.2.6** *P* **337** *L* **38** # **669**

Barrass, Hugh Cisco

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

Add note regarding link state synchronization signal.

SuggestedRemedy

Add paragraph at end of subclause:

Signal PMA_receive_synchronized is asserted when the state machine is in "SYNC" state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.3.2.2.9** *P* **339** *L* **35** # **670**

Barrass, Hugh Cisco

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

Remove options for interleaver block lengths.

SuggestedRemedy

Rewrite the paragraph as:

The incoming codeword of 200 octets is divided into interleaver blocks of 25 octets. The octets within the interleaver blocks are numbered from j = 0 to j = 24.

Proposed Response *Response Status* **W**

PROPOSED REJECT. Need more discussion at STF

Cl **62** *SC* **62.3.2.2.9** *P* **340** *L* **5** # **671**

Barrass, Hugh Cisco

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

Simplify values in table 62-10

SuggestedRemedy

Rewrite the first row of table:

Block Length (I) || I = 25 octets || S = 200 octets

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.4.3** *P* **342** *L* # **826**

Simon, Scott Cisco Systems, Inc.

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

There is no objective or reason for interoperability with MCM-VDSL.

SuggestedRemedy

Remove subclause 62.4.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.4.5.2.2** *P* **344** *L* **17** # **828**

Simon, Scott Cisco Systems, Inc.

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

The three paragraphs that start with "The frequency plans shall consist. . ." are redundant with Annex 62A. As is Table 62-12

SuggestedRemedy

Replace the paragraph with a smaller one that describes the fact that 10PASS-T can operate with up to 2 frequency bands in each direction. . . standard and user-defined band plans are described in Annex 62A.

Remove Table 62-12 and ensure the same information is conveyed as part of the bandplan profiles in Annex 62A

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Support for other frequency for use in private network is optional. Remove Table 62-12, ensure that information is conveyed in Annex 62A

Cl **62** *SC* **62.4.5.2.2** *P* **344** *L* **20** # **983**

Vladimir Oksman Broadcom

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

The listed band plans are inconsistent with 62A.

SuggestedRemedy

Fix the reference

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by comment 828

Cl **62** *SC* **62.4.5.2.2** *P* **345** *L* **1** # **984**

Vladimir Oksman Broadcom

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

The table lists the information which belongs to 62A.

SuggestedRemedy

Move the table to 62A

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.4.5.4** *P* **347** *L* # **820**

Simon, Scott Cisco Systems, Inc.

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

The draft has left out the reference for the MCM bitswapping function. The bitswapping function is required for complete specificaiton of an MCM PHY.

SuggestedRemedy

Add subclause:

62.4.5.4.7 Reference section 10.7
10.7 of MCM-VDSL is replaced with the relevant specifications in Clause 55 and Clause 61. (precise reference to be added)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Reference paragraph 10.7 should be "stet"

Cl **62** *SC* **62.4.5.8** *P* **353** *L* # **827**

Simon, Scott Cisco Systems, Inc.

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

The reference describes an optional mode of operation to use a different tone spacing than 4.3125KHz. This optional mode must be made manditory or removed. Since it is redundant to the operation of 10PASS-T (it adds no new capability), it should be removed

SuggestedRemedy

Remove subclause 62.4.5.8. Also update the text of 62.4.5 to remove the reference to MCM-VDSL Annex C

Proposed Response *Response Status* **W**

PROPOSED REJECT. No technical reason to remove it.

Cl **62** *SC* **62.4.6.1.1, 62.4.6.1.2, 6** *P* **354-358** *L* # **985**

Vladimir Oksman Broadcom

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

These sections are relevant for North America only, but presented as a generic ones. Also, the most of material relates to 62A. Same about Table 62-23

SuggestedRemedy

Add an explanation, and move the relevant Tables to 62A

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy.

Cl **62** *SC* **62.4.6.1.2** *P* **354** *L* # **821**

Simon, Scott Cisco Systems, Inc.

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

PSD masks should be specified in Annex 62A as part of the profile definitions

SuggestedRemedy

Move all PSD mask descriptions and tables to Annex 62A and number them as part of PMD profiles

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Entire subclause replaced by:

Transmit PSD is characterized by the PSD template and PSD mask. PSD templates and masks are defined in Annex 62A.

Cl **62** *SC* **62.4.6.1.3** *P* **358** *L* # **822**

Simon, Scott Cisco Systems, Inc.

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

Egress masking of HAM radio bands should be addressed as part of Annex 62A profiles. The text of Annex 62A already refers to band notch profiles.

SuggestedRemedy

Remove 62.4.6.1.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace entire subclause with:

To avoid potential harm to amateur radio service due to radiated emission from 10PASS-TS, it shall be possible to reduce the PSD of the transmit signal within the amateur radio bands. Specifications for egress power control are described in Annex 62A.

Cl **62** *SC* **62.5.1.1** *P* **359** *L* **54** # **672**

Barrass, Hugh Cisco

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

According to other sections, the stream may be split into one or two - not two or more - streams.

SuggestedRemedy

Change sentence to:

The frame is split into one or two streams (Figure 62–14 shows splitting into two streams).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.5.1.1** *P* **360** *L* **8** # **673**

Barrass, Hugh Cisco

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

"One or more" carriers should be "one or two" carriers.

SuggestedRemedy

Change sentence to:

One or more carriers can be transmitted in each transmission direction, although if one carrier can transmit all the input data, the other carriers may be not used.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.5.2.1** *P* **361** *L* **5** # **823**

Simon, Scott Cisco Systems, Inc.

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

The text refers to optional modes with more than two carriers in each direction. EFM PHYs should cap the number of carriers.

SuggestedRemedy

Change the text to state that K (the number of TX carriers) may be either 1 or 2.
Remove the final paragraph: "Note: Splitting procedure. . . link initialization and is TBD."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Use remedy form comment 674

Cl **62** *SC* **62.5.2.1** *P* **361** *L* **7** # **674**

Barrass, Hugh Cisco

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

Remove option for operation on more than 2 carriers.

SuggestedRemedy

Operation with one and two carriers (K=2) is mandatory, operation with more than two carriers is not covered in this standard.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Operation with one and two carriers (K=2) is mandatory, operation with three is allowed because there may potentially be 3 carriers in each direction.

Cl **62** *SC* **62.5.2.1** *P* **362** *L* **33** # **675**

Barrass, Hugh Cisco

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

Change out of scope reference to multipair PMD operation.

SuggestedRemedy

Change paragraph to:

Note: Splitting procedure with more than two carriers is useful for multi-loop operation, providing efficient aggregation of loop transport capacity on the physical layer. This mode of operation is outside the scope of this standard.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.5.4.1** *P* **368** *L* **37** # **678**

Barrass, Hugh Cisco

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

Subclause needs to reflect management access as defined in Clause 30, 45 etc.

SuggestedRemedy

Change subclause to read:

All options to control transmit PSD and wideband power are available independently in both transmission directions. Control parameters are defined in Clause 30. Access to PSD control through MDIO is defined in Clause 45. Access to remote PSD parameters during handshaking at link startup is defined in subclause 61.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.5.4.1.1** *P* **368** *L* **43** # **679**

Barrass, Hugh Cisco

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

Subclause needs to reflect the management defined in Clauses 30, 45 etc.

SuggestedRemedy

Change subclause to read:

The PSD of the transmit signals in both directions shall comply with the set PSD templates and the wideband power limitation to comply with regionally specific PSD templates and wideband power limitations. The standardized values are specified in Annex 62A, also in Reference 1-1 section 7.1, and Reference 3-1 section 8.2.5.2.1. The network operator should define the PSD template prior to first activation of the link. The default PSD template shall be as specified in subclause 62.5.6.2.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The PSD of the transmit signals in both directions shall comply with the set PSD templates and the wideband power limitation to comply with regionally specific PSD templates and wideband power limitations. The standardized values are specified in Annex 62A.

Cl **62** *SC* **62.5.4.1.2** *P* **368** *L* **51** # **680**

Barrass, Hugh Cisco

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

Subclause needs to reflect the management defined in Clauses 30, 45 etc.

SuggestedRemedy

Change subclause to read:

The system shall be capable to adjust the value and shape transmit PSD. The adjustment is provided via the management system, as specified in Clause 30. Access to the parameters via the MDIO interface is defined in Clause 45. Additional information is available in Annex 62A and subclause 62.5.6.2.2. In particular, the system shall provide capability for PSD reduction in the frequency range below 1.1 MHz to provide spectral compatibility with CO-based ADSL for cabinet and MDU deployments.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **62.5.4.2.2.2** *P* **365** *L* **53** # **676**

Barrass, Hugh Cisco

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

Remove optional spectral shaping modes.

SuggestedRemedy

Change paragraph to:

The transceiver must provide the excess bandwidth parameter of 0.2. Other excess bandwidth parameters, in the range between 0.1 to 0.2 with granularity of 0.025 may be provided outside the scope of this standard.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The transceiver must provide the excess bandwidth parameter of 0.2. Other excess bandwidth parameters, in the range between 0.1 to 0.2 with granularity of 0.025 is provided outside the scope of this standard.

Cl **62** *SC* **62.5.4.2.2.2** *P* **367** *L* **1** # **677**

Barrass, Hugh Cisco

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

Change out of scope note.

SuggestedRemedy

Change sentence to:

Note: Power and group delay templates for other values of a are outside the scope of this standard.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **table 62-8** *P* **336** *L* **1** # **303**

Shohet, Zion Infineon

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

Table 62-8 should be modified to include more details, and to fix some typo's.

SuggestedRemedy

1- IB-7: change "os_cr1" to "los_cr1"
2- For IB-7 & IB-8: add a note: "see reference 1-2 section 8.2.1.2"
3- IB-9: change "fsef" to "frdi". Change the Description to: "far-end Remote defect Indicator". Add a note: "see reference 1-1 section 10.3.1.4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **62** *SC* **table 62-9** *P* **336** *L* **21** # **304**

Shohet, Zion Infineon

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

add reference to items in table 62-9

SuggestedRemedy

1- IB-12 and IB-13: add a note: " see reference 1-1 section 10.3.3.2"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62** *SC* **table 62-7** *P* **335** *L* **11** # **300**

Shohet, Zion Infineon

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

Table 62-7 needs to be modified

SuggestedRemedy

1- add text to the note column of the first two items, trig&flag: "see section 62.5.6.3.4"
2- add text to the Value column of IB-1: "0=Normal stat, 1=failure condition"
3- Name of Bit 1 should be cahnged from "IB-5 (TBD)" to "IB-5". The Value column for this item should be cleared. The Description should be "reserved" only.
4- Name column of bit 0 should be changed from "NTR" to "not used". The Description and Value should be cleared.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change 4th element of remedy:

Description column change to "NTR is out of scope for this standard"

Cl **62A** *SC* **1** *P* **377** *L* **2** # **222**

Gustafsson, Jonas Ericsson

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

There is currently no Annex 62B.

SuggestedRemedy

Add Annex 62B.
Consider to add Annex 63A and 63B for 2PASS-TL/2BASE-TL with same purposes as 62A and 62B

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy. Baseline has been adopted covering 62B, 63A, 63B.

Cl **62A** *SC* **62A.3** *P* **377** *L* # **825**

Simon, Scott — Cisco Systems, Inc.

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

The text of the subclause refers to user-defined bandplan and PSD Mask profiles. No constraints are placed on the definition of user-defined bandplans.

SuggestedRemedy

Using appropriate editorial license, create subclause 62A.3.3.4.1 "User-defined bandplan" with the following text:

10PASS-T PHYs shall support user-defined bandplans within the limits described below. User defined bandplans are specified by choosing a set of frequency bands, their transmission direction and their boundaries.

Up to four frequency bands may be selected. Frequency band 0 may be selected to transmit in either the upstream or downstream direction. Frequency bands 1 and 3 transmit downstream. Frequency bands 2 and 4 transmit upstream.

The start and end frequencies of each band may be specified in integer multiples (n) of 4KHz, where n >= 6 and n <= 3000. The minimum separation between bands is TBD. If a PHY is set with a profile that violates a minimum band separation, then TBD (the PHY ignores the setting, or refuses to link, etc. If band 0 is selected as a downstream band, the band 0 end and band 1 start frequencies may be both set to n = 35, indicating that band 0 and band 1 will operate as a single contiguous downstream band.

Using appropriate editorial license, create subclause 62A.3.3.4.2 "User-defined PSD mask" with the following text:

For each selected frequency band, a user-defined PSD mask may also be specified by selecting a maximum transmit PSD for that band. 10PASS-T PHYs shall support setting the maximum transmit PSD of each band as follows in 0.5dBm/Hz increments. Band 0: TBD (ed note. this max PSD should match the same number from ADSL). Band 1: TBD, Band 2: TBD, Band 3: TBD, Band 4: TBD.

Also, include a table to summarize each of the parameters in a user defined profile and its limits. Example (and only and example!):

Band 0 Activate: 1,0
Band 0 Start: 4-34
Band 0 End: 5-35
Band 0 Max PSD: -40dBm/Hz
Band 1 Activate: 1,0
Band 1 Start: 35-3000
Band 1 End: 36-3000
Band 1 Max PSD: -55dBm/Hz
etc. etc. etc.

Also, add the following note to the bottom of 62A.3.1

Ed. Note: Comformance testing for 10PASS-T phys should be based on cycling each parameter above and observing the output of the PHY on a spectrum analyzer. The actual procedure and limits for doing so should be described in A62B.

Proposed Response *Response Status* **W**

PROPOSED REJECT. Need to be discussed at the SubTask Force. This is not suitable as defined and is restrictive.

Cl **62A** *SC* **62A.3.1** *P* **377** *L* **23** # **986**

Vladimir Oksman — Broadcom

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

Mentioned (Band 0+4) is not defined.

SuggestedRemedy

There should be an appropriate reference or a definition included.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy

Cl **62A** *SC* **62A.3.1** *P* **378** *L* **2** # **989**

Vladimir Oksman — Broadcom

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

There may be much more other useful combinations of used and unused band assignment.

SuggestedRemedy

Specify a “band allocation code” and provide explanation that all band combinations may be used. We can decide later whether we would like to use some as optional/mandatory ones.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy

Cl **62A** *SC* **62A.3.1** *P* **378** *L* **2** # **990**

Vladimir Oksman — Broadcom

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

ETSI and T1 specifications are mentioned not clear.

SuggestedRemedy

Use “T1.424-Trial Use Part 1” and “TS1 101 270 -1”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62A** *SC* **62A.3.1** *P* **378** *L* **2** # **988**

Vladimir Oksman Broadcom

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

There is no “Plan 998” and “Plan 997” in ITU.

SuggestedRemedy

Use “G.993.1 Bandplan A”, and “G.993.1 Bandplan B” instead.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **62A** *SC* **62A.3.2** *P* **377** *L* **45** # **987**

Vladimir Oksman Broadcom

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

There better be an exact reference which registers should be configured for relevant parameters specifying the profile. Otherwise, a confusion may happen.

SuggestedRemedy

Add reference and names of registers specifying each of the profile parameters.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy.

Cl **62A** *SC* **62A.3.3.5** *P* **378** *L* **41** # **824**

Simon, Scott Cisco Systems, Inc.

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

"Bandplans parameterization" has not been discussed in the TF. The text in the subclause does not clearly define the need for or function of "Bandplans paramerization"

SuggestedRemedy

Discuss in the TF the concept of "Bandplans parameterization." The editor shall take direction from the TF to remove or clarify the subclause.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy.

Cl **62A** *SC* **62A.3.3.5** *P* **378** *L* **44** # **991**

Vladimir Oksman Broadcom

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

The content of this paragraph is unclear. It seems to be more bit required to define the PSD, about 0.5 dB of accuracy is required.

SuggestedRemedy

Check the PSD definition and fix the text to be more clear.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy

Cl **62A** *SC* **62A.3.4** *P* **379** *L* **15** # **992**

Vladimir Oksman Broadcom

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

Neither SCM, nor MCM transmission profiles have payload rate granularity of 0.25MHz. Actually, two sentences in lines 26, 27 slightly contradict one another.

SuggestedRemedy

Include exact granularity, or use “minimum payload rate required” to allow particular technologies accommodate their specific granularity. Fix the text respectively.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need specific remedy

Cl **62A** *SC* **62A.3.4** *P* **379** *L* **15** # **307**

Shohet, Zion Infineon

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

400 steps of payload rates are defined. There is no need for infinite number of profiles, to comply with the short-range objective of EFC-Cu.
We need to define several basic payload rates such as: 2.5/2.5, 5/5, 7.5/7.5, 10/10, and so on.
These basic rates might also be used for testing of performance, as stated in the begining of this annex.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy

Cl **62A** *SC* **62A.3.5** *P* **379** *L* **34** # **993**

Vladimir Oksman Broadcom

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

There is not mentioned how and where the notch should be programmed.

SuggestedRemedy

Add a reference pointing the register and the explain briefly how to specify the notch.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need specific remedy

Cl **63** *SC* *P* **382** *L* **12** # **803**

Artman, Doug Texas Instruments

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

The note indicates that the text for 2BASE-TL refers to a document from an interim meeting of ITU SG15/q4. The referenced document is actually a draft version of the G.shdsl.bis standard that is in progress in the ITU. We should be referring to established standards where possible.

SuggestedRemedy

Modify references to use the latest released version of the G.991.2 (G.shdsl) standard.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** *SC* **1.1.2** *P* **383** *L* **48** # **226**

Gustafsson, Jonas Ericsson

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

Incorrect data rate.

SuggestedRemedy

Change to:
a) Provide 2Mbps encapsulated packet data rate at the alpha/beta interface.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** *SC* **63.1** *P* **376** *L* # **99019**

Wei, Dong SBC Communications,

Comment Type **TR** *Comment Status* **D** *D1.0 #416*

The PHY described in this subcluase is based on ADSL2 (G.992.3) Annex J. Since Annex J was developed primarily for some European countries where ADSL-over-ISDN is the dominant ADSL variant, G.992.3 does not specify the performance requirements of Annex J for North America. Therefore, Annex J is not suitable for deployment in the U.S. As a future ANSI standard, the P802.3ah draft should not adopt this PHY.

SuggestedRemedy

Delete the entire subclause (from Page 376 to Page 541).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by response to 99018

Cl **63** *SC* **63.1** *P* **376** *L* # **99018**

Wei, Dong SBC Communications,

Comment Type **TR** *Comment Status* **D** *D1.0 #415*

2BASE-TL is a much better PHY for the long-reach objective than 2PASS-TL due to the following reasons:
1) 2BASE-TL has a significantly better simulated rate/reach performance than 2PASS-TL for most noise models that are commonly used;
2) Lab/field testing and deployment have shown that the real-world performance of 2BASE-TL-type technologies (e.g., SHDSL, HDSL2/4) is very close to their simulated performance, and that of 2PASS-TL-type technologies (e.g., ADSL) is significantly below their simulated performance.
3) 2BASE-TL is a basis system in T1.417 and hence its deployment in the public access network is protected. 2PASS-TL does not have this advantage.
4) 2BASE-TL is a mature and proven technology, and 2PASS-TL is new and untested.
5) 2BASE-TL supports repeater mode, which is a common requirement for business applications. 2PASS-TL does not support repeater mode. Therefore, 2BASE-TL can be deployed on long loops and hence can achieve much broader market potential than 2PASS-TL.

SuggestedRemedy

Delete the entire subclause (from Page 376 to Page 541).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is an opinon. This would require a vote in the Task Force to overturn the adoption of 2 candidate PHYs and adopt only one PHY to meet the objective.

Cl **63** *SC* **63.1** *P* **376** *L* # **99017**

Wei, Dong SBC Communications,

Comment Type **TR** *Comment Status* **D** *D1.0 #414*

The PHY described in this subcluase is based on ADSL2 (G.992.3). ADSL2 is not a standardized technology in the U.S. In fact, any standardized DSL technology in the U.S. must be based on an ANSI standard. There does not exist any ANSI standard on which ADSL2 is based. As a future ANSI standard, the P802.3ah draft should not adopt any non-standardized DSL technology in the U.S.

SuggestedRemedy

Delete the entire subclause (from Page 376 to Page 541).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by response to 99018

Cl **63** *SC* **63.1** *P* **383** *L* **1** # **638**

WEI, DONG SBC Communications,

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

This comment is the same as Comment #415 on Draft 1.0.

2BASE-TL is a much better PHY for the long-reach objective than 2PASS-TL due to the following reasons:
1) 2BASE-TL has a significantly better simulated rate/reach performance than 2PASS-TL for most noise models that are commonly used;
2) Lab/field testing and deployment have shown that the real-world performance of 2BASE-TL type technologies (e.g., SHDSL, HDSL2/4) is very close to their simulated performance, and that of 2PASS-TL-type technologies (e.g., ADSL) is significantly below their simulated performance.
3) 2BASE-TL is a basis system in T1.417 and hence its deployment in the public access network is protected. 2PASS-TL does not have this advantage.
4) 2BASE-TL is a mature and proven technology, and 2PASS-TL is new and untested.
5) 2BASE-TL supports repeater mode, which is a common requirement for business applications. 2PASS-TL does not support repeater mode. Therefore, 2BASE-TL can be deployed on long loops and hence can achieve much broader market potential than 2PASS-TL.

SuggestedRemedy

Delete the entire subclause (from Page 383 to Page 409).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by response to 99018

Cl **63** *SC* **63.1** *P* **383** *L* **1** # **639**

WEI, DONG SBC Communications,

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

This comment is the same as Comment #416 on Draft 1.0.

The PHY described in this subcluase is based on ADSL2 (G.992.3) Annex J. Since Annex J was developed primarily for some European countries where ADSL-over-ISDN is the dominant ADSL variant, G.992.3 does not specify the performance requirements of Annex J for North America. Therefore, Annex J is not suitable for deployment in the U.S. As a future ANSI standard, the P802.3ah draft should not adopt this PHY.

SuggestedRemedy

Delete the entire subclause (from Page 383 to Page 409).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by response to 99018

Cl **63** *SC* **63.1** *P* **383** *L* **1** # **640**

WEI, DONG SBC Communications,

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

This comment is the same as Comment #414 on Draft 1.0.

The PHY described in this subcluase is based on ADSL2 (G.992.3). ADSL2 is not a standardized technology in the U.S. In fact, any standardized DSL technology in the U.S. must be based on an ANSI standard. There does not exist any ANSI standard on which ADSL2 is based. As a future ANSI standard, the P802.3ah draft should not adopt any non-standardized DSL technology in the U.S.

SuggestedRemedy

Delete the entire subclause (from Page 383 to Page 409).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by response to 99018

Cl **63** *SC* **63.1.1** *P* **383** *L* **30** # **32**

Kimpe, Marc ADTRAN

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

The specification should be consistent all PHYs proposed for clause 63. Either modifications to existing standards should be included or no modifications to existing. Operation of annex J over POTS is not a standard.
The comment also applies to the following sections:
63.1.1.3 page 384 line 15
63.1.1.4.2 page 386 line 12
63.1.3.10 page 395 line 6 to 13
63.1.3.13.1.3 page 397 line 16

SuggestedRemedy

Remove the annex J over POTS option.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Refer to baseline(slide 26) proposed as basis for the draft.

Cl **63** *SC* **63.1.2.1** *P* **386** *L* **3739** # **794**

Artman, Doug Texas Instruments

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

It is unclear as to whether EFM should maintain the feature of ADSL Annex J supporting up to four frame bearers. There are numerous sections in Annex J that would need to be modified if EFM chose to support less than 4 frame bearers. These sections include the one referenced in this subclause, as well as subclauses 63.1.2.5, 63.1.2.6, 63.1.2.6.2, 63.1.2.10.1.1, and 63.1.2.10.3.

SuggestedRemedy

EFM should restrict the number of frame bearers to 1 and each of these subclauses should be modified as appropriate to reflect this restriction.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Requires explicit vote to adopt this change.

Cl **63** *SC* **63.1.2.1** *P* **386** *L* **4143** # **795**

Artman, Doug Texas Instruments

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

Numerous subclauses in Clause 63 refer to sections in ADSL Annex J (G.992.3) which talk about the concept of a network timing reference (NTR). The additional subclauses in Clause 63 include 63.1.2.3 and 63.1.2.8.1

SuggestedRemedy

We should eliminate the concept of an NTR from 2PASS-TL and modify the specified subclauses in Clause 63 as appropriate.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** *SC* **63.1.2.11** *P* **389** *L* **50** # **423**

Tzannes, Marcos Aware

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

SRA is a very useful feature because it provides robustness to changing channel conditions by enabling data rate adaptation without errors or service interruption. If rate adaptation is not desirable for a particular link G.992.3 provides a MIB controlled parameter (RA_MODE) that can be used to disable or enable SRA. DRR applies only to systems with more than one latency path and for that reason should not be used in the EFM standard.

SuggestedRemedy

The EFM standard shall support optional SRA as defined in G.992.3
The EFM standard shall not support DRR.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Needs discussion on how it can work with Clauses 30 and 45.

Cl **63** *SC* **63.1.2.11** *P* **389** *L* **5054** # **797**

Artman, Doug — Texas Instruments

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

G.992.3 supports 3 forms of On-line Reconfiguration (OLR): Bitswap, Dynamic Rate Repartioning (DRR) and Seamless Rate Adaptation (SRA). Bitswap adjusts the number of bits applied to specific tones while keeping the total number of bits allocated constant. DRR also keeps the total number of bits constant, but readjusts the number of bits allocated to different latency paths. SRA is capable of modifying not only the bit distribution among all carriers but can also modify the overall data rate by adjusting the total number of bits allocated. In G.992.3 bitswap is required while DRR and SRA are optional. The EFM Task Force needs to decide whether they want to maintain support for DRR and SRA for 2PASS-TL. The other relevant subclauses in Clause 63 are 63.1.2.11.1, 63.1.2.11.1.1, 63.1.2.11.1.2 and 63.1.3.16.

SuggestedRemedy

EFM should maintain support for bitswap but simplify the OLR protocol and eliminate support for DRR and SRA. DRR is not required with only a single latency path and SRA has no utility if we are nailing the data rate up at 2 Mbps. It is suggested to modify the referenced subclauses as necessary to remove support for DRR and SRA.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Needs specific remedy

Cl **63** *SC* **63.1.2.12** *P* **390** *L* **26** # **424**

Tzannes, Marcos — Aware

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

Power management (L3 and L2) is a very useful feature because it provides power saving when data transmission requirements are reduced. If Power Management is not desirable for a particular link G.992.3 provides a MIB controlled parameter (PM_MODE) that can be used to disable or enable Power Management.

SuggestedRemedy

The EFM standard shall support Power Management as defined in G.992.3

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This must be resolved in conjunction with comment 798

Cl **63** *SC* **63.1.2.12** *P* **390** *L* **2630** # **798**

Artman, Doug — Texas Instruments

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

G.992.3 supports a Power Management mode wherein the ATU-C will dramatically reduce the downstream data rate (and subsequently save ATU-C power) when there is no data to be transmitted. The EFM Task Force must address this feature and determine if this should be supported as part of 2PASS-TL. The other relevant subclauses in Clause 63 pertaining to this issue are 63.1.3.5.1, 63.1.3.7, 63.1.3.7.2, 63.1.3.7.4, 63.1.3.7.5, 63.1.3.7.6, 63.1.3.17 and 63.1.4.

SuggestedRemedy

2PASS-TL should continually maintain a constant bit rate of 2 Mbps and not support this mode. The subclauses specified above should be modified to remove support for the power management mode.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This must be resolved in conjunction with comment 424

Cl **63** *SC* **63.1.2.4** *P* **387** *L* **913** # **796**

Artman, Doug — Texas Instruments

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

G.992.3 (ADSL2) provides support for multiple latency paths through the PHY layer. The EFM Task Force must decide if they want to maintain support for multiple latency paths as in G.992.3, or limit the number of potential latency paths and to what number do they wish to limit this to. In addition, the task force must decide if they want the latency on each path to be configurable (as in G.992.3 or fixed to a certain value. This issue is relevant not only to the subclause but also subclauses 63.1.2.5, 63.1.2.6, 63.1.2.6.2, 63.1.2.7.2, 63.1.2.10.1.1 and 63.1.2.10.3.

SuggestedRemedy

2PASS-TL should provide support for only 1 latency path, but the latency on that path should be provisionable as currently supported in G.992.3. The referenced subclauses of Clause 63 should be modified as appropriate to reflect this limitation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** *SC* **63.1.3.10** *P* **395** *L* **3** # **799**

Artman, Doug — Texas Instruments

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

The subclause reference in the first sentence is wrong.

SuggestedRemedy

The first sentence should be modified as follows: Spectral masks for the different service options are defined in subclauses 63.1.5 and 63.1.6.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** *SC* **63.1.3.14** *P* **403** *L* **3036** # **801**

Artman, Doug — Texas Instruments

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

G.992.3 provides for an optional Short Inititalization Procedure. The EFM Task Force needs to discuss support for this optional procedure and decide whether it should be supported in 2PASS-TL.

SuggestedRemedy

The primary utility of the Short Initialization Procedure is to provide a quicker training session to get to Showtime if the modems were previously in Showtime and need to retrain due to a change in line conditions. Although this feature is optional in G.992.3 and vendors could choose whether to provide support, we should just eliminate this from 2PASS-TL to further simplify the standard. It is unclear yet how well this feature will truly work as it has yet to be implemented in ADSL chipsets.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need specific remedy

Cl **63** *SC* **63.1.3.5.1** *P* **391** *L* **5254** # **800**

Artman, Doug — Texas Instruments

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

The EFM Task Force needs to decide whether 2PASS-TL should support the rate adaptive nature of G.992.3 or fix the US/DS rates to 2 Mbps in each direction. Modifications to this section (and possibly others) are required if the rate is to be fixed.

SuggestedRemedy

EFM should maintain the rate adaptive nature of G.992.3 and allow the ATU-C to simply provision the acceptable rates. No modifications are required to the text, other than an explanatory note. The Editor's Comment should be removed.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** *SC* **63.1.5** *P* **406** *L* **29** # **33**

Kimpe, Marc — ADTRAN

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

The title of clause 63.1.5 is "PSD Masks and Transmit Power- EFM Long Reach system operating in the frequency band over POTS". Clause 63 was meant to include the standard by reference with deviation from the standard highlighted, yet clause 63.1.5 does not exist within annex J and is listed here.

SuggestedRemedy

1- Clearly mark what are the changes with respect to existing standards.
2- remove all sections related to annex J over POTS.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Refer to baseline(slide 26) proposed as basis for the draft.

Cl **63** *SC* **63.1.5.2.2** *P* **407** *L* **2849** # **802**

Artman, Doug — Texas Instruments

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

The PSD masks for the upstream operating over POTS still need to be specified.

SuggestedRemedy

See accompanying contribution for the PSD masks to be used for the upstream direction while operating over POTS. The specified subclause should be modified with the proposed PSD masks.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** *SC* **63.2** *P* **410** *L* **56** # **804**

Artman, Doug — Texas Instruments

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

The sentence beginning with "The copper category" is confusing. I'm not sure what is trying to be said there. Is the intent to inform the reader that the type of copper pairs over which this service is intended identical to those being used in the access network?

SuggestedRemedy

Change sentence to: These copper pairs are identical to those currently used in the access network according to ANSI, ETSI and ITU-T standards.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** SC **63.2** P **542** L **10** # **99020**
Jackson, Stephen Hatteras Networks

Comment Type **E** *Comment Status* **D** *D1.0 #400*

"the copper networks"

SuggestedRemedy

needs claification, maybe say "public loop plants" like in the preceding paragraph

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by comment 804

Cl **63** SC **63.2** P **542** L **56** # **99021**
Artman, Doug Texas Instruments

Comment Type **E** *Comment Status* **D** *D1.0 #423*

The sentence beginning with "The copper category" is confusing. I'm not sure what is trying to be said there. Is the intent to inform the reader that the type of coppers pairs over which this service is intended identical to those being used in the access network?

SuggestedRemedy

These copper pairs are identical to those currently used in the access network according to ANSI, ETSI and ITU-T standards.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** SC **63.2.2** P **410** L **3132** # **805**
Artman, Doug Texas Instruments

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

The word operating is misspelled.

SuggestedRemedy

correct spelling

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** SC **63.2.2** P **410** L **33** # **806**
Artman, Doug Texas Instruments

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

The objective under f) doesn't really belong here. Bonding for long reach is being addressed in another clause and this clause should focus on the objectives for the PHY only.

SuggestedRemedy

Remove item f)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** SC **63.2.2** P **542** L **28** # **99022**
Artman, Doug Texas Instruments

Comment Type **E** *Comment Status* **D** *D1.0 #426*

The word operating is misspelled.

SuggestedRemedy

correct spelling

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** SC **63.2.2** P **542** L **30** # **99023**
Artman, Doug Texas Instruments

Comment Type **T** *Comment Status* **D** *D1.0 #424*

The objective under f) doesn't really belong here. Bonding for long reach is being addressed in another clause and this clause should focus on the objectives for the PHY only.

SuggestedRemedy

Remove item f)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Need updated material or presentation to discuss and then agree

Cl **63** SC **63.2.2 (e)** P **542** L **29** # **99024**
Jackson, Stephen Hatteras Networks

Comment Type **E** *Comment Status* **D** *D1.0 #401*

figure "6" should be "5"

SuggestedRemedy

change to "5"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** *SC* **63.2.3** *P* **410** *L* **41** # **807**
Artman, Doug Texas Instruments

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

The following statement should be removed: "When the above specification is superseded by an approved revision, the revision shall apply." We should be referencing a single standard here, and not leaving the door wide open to any other follow-on standards that may come later. I believe 802.3 should create a definitive standard and reference a specific standard if it exists, but not set itself up to have its standards implicitly modified by others.

SuggestedRemedy

Remove this sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** *SC* **63.2.3** *P* **542** *L* **36** # **99025**
Artman, Doug Texas Instruments

Comment Type **TR** *Comment Status* **D** *D1.0 #425*

The following statement should be removed: "When the above specification is superseded by an approved revision, the revision shall apply." We should be referencing a single standard here, and not leaving the door wide open to any other follow-on standards that may come later. I believe 802.3 should create a definitive standard and reference a specific standard if it exists, but not set itself up to have its standards implicity modified by others.

SuggestedRemedy

Remove this sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** *SC* **63.2.4.1.1** *P* **411** *L* **7** # **808**
Artman, Doug Texas Instruments

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

The acronyms STU-C and STU-R are not defined previously.

SuggestedRemedy

Editor should appropriately define these acronyms or use more generic terms.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy

Cl **63** *SC* **63.2.4.1.1** *P* **543** *L* **4** # **99026**
Artman, Doug Texas Instruments

Comment Type **E** *Comment Status* **D** *D1.0 #427*

The acronyms STU-C and STU-R are not defined previously.

SuggestedRemedy

Editor should appropriately define these acronyms or use more generic terms.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy

Cl **63** *SC* **63.2.4.1.3** *P* **411** *L* **27** # **809**
Artman, Doug Texas Instruments

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

The acronym OC-TC is not defined or referenced in Figure 63-2.

SuggestedRemedy

Editor should appropriately define this entity.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy

Cl **63** *SC* **63.2.4.1.3** *P* **543** *L* **23** # **99027**
Artman, Doug Texas Instruments

Comment Type **E** *Comment Status* **D** *D1.0 #428*

The acronym OC-TC is not defined or referenced in Figure 63-2.

SuggestedRemedy

Editor should appropriately define this entity.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy

Cl **63** *SC* **63.2.4.2** *P* **411** *L* **4748** # **810**

Artman, Doug — Texas Instruments

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

The statement "The PMD allows the optional use of a 4-wire mode and of repeaters to increase the reach or capacity of a copper link" should be modified to take out the 4-wire mode part. This feature should be adequately described in the bonding clause.

SuggestedRemedy

Change sentence to "The PMD allows the optional use of repeaters to increase the reach of a copper link."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. The use of repeater are not covered here.

Cl **63** *SC* **63.2.4.2** *P* **543** *L* **41** # **99028**

Jackson, Stephen — Hatteras Networks

Comment Type **E** *Comment Status* **D** *D1.0 #404*

Data mode may use any of several levels of TC.

SuggestedRemedy

Strike last sentence in (c)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **63** *SC* **63.2.4.2** *P* **543** *L* **43** # **99029**

Jackson, Stephen — Hatteras Networks

Comment Type **E** *Comment Status* **D** *D1.0 #402*

Since IEEE is creating its own bonding (loop aggregation) spec, the G991.2 PMD 4-wire mode is not relevant to this standard.

SuggestedRemedy

Strike sentence.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by response to comment 810

Cl **63** *SC* **63.2.4.2** *P* **543** *L* **4344** # **99030**

Artman, Doug — Texas Instruments

Comment Type **T** *Comment Status* **D** *D1.0 #429*

The statement "The PMD allows the optional use of a 4-wire mode and of repeaters to increase the reach or capacity of a copper link" should be modified to take out the 4-wire mode part. This feature should be adequately described in the bonding clause.

SuggestedRemedy

Change sentence to "The PMD allows the optional use of repeaters to increase the reach of a copper link."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See 810

Cl **63** *SC* **63.3.1.2** *P* **412** *L* **3443** # **811**

Artman, Doug — Texas Instruments

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

The agreement reached in 802.3ah was to reference G.shdsl as one of the potential long reach PHYs. This text is referring to "Enhanced SHDSL" or G.shdsl.bis which is a potential standard currently being discussed in other standards bodies. Although there are agreements in ITU-T to support higher data rates in G.shdsl.bis, there are no agreements on how this is to be accomplished. We should keep our reference to what was agreed in EFM, G.shdsl, and potentially consider later revisions of G.shdsl in a subsequent revision of the EFM standard.

SuggestedRemedy

Remove the value of 81 and reference to subclause editor's note in line 34, and remove the subclause editor's note in lines 37-43.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This requires a vote in the STF.

Cl **63** *SC* **63.3.1.2** *P* **544** *L* **32** # **99031**

Jackson, Stephen Hatteras Networks

Comment Type **E** *Comment Status* **D** *D1.0 #405*

isn't the correct formula:

2(n*64 + i*8) kbps

?

SuggestedRemedy

verify

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy

Cl **63** *SC* **63.3.1.2** *P* **544** *L* **3238** # **99032**

Artman, Doug Texas Instruments

Comment Type **TR** *Comment Status* **D** *D1.0 #430*

The agreement reach in 802.3ah was to reference G.shdsl as one of the potential long reach PHYs. This text is referring to "Enhanced SHDSL" or G.shdsl.bis which is a potential standard currently being discussed in other standards bodies. Although there are agreements in ITU-T to support higher data rates in G.shdsl.bis, there are no agreements on how this is to be accomplished. We should keep our reference to what was agreed to in EFM, G.shdsl, and potentially consider later revisions of G.shdsl in a subsequent revision of the EFM standard.

SuggestedRemedy

Remove the value of 81 and reference to subclause editor's note in lines 32 and 33, and remove the subclause editor's note in lines 34-38.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Duplicate of 811

Cl **63** *SC* **63.3.1.3** *P* **412** *L* **52** # **813**

Artman, Doug Texas Instruments

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

This section should be removed as it refers to bonding which is covered in another clause.

SuggestedRemedy

Remove this section.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Four wire mode is part of the specification, separate from PMI aggregation.

Cl **63** *SC* **63.3.1.3** *P* **412** *L* **54** # **812**

Artman, Doug Texas Instruments

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

There is a reference to a non-existent subclause (63.2.1.2)

SuggestedRemedy

Subclause editor should clarify the reference and what is intended.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to 63.3.1.2

Cl **63** *SC* **63.3.1.3** *P* **544** *L* **47** # **99033**

Artman, Doug Texas Instruments

Comment Type **E** *Comment Status* **D** *D1.0 #431*

There is a reference to a non-existent section (63.2.1.2)

SuggestedRemedy

Subclause editor should clarify the reference and what is intended.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to 63.2.1.2

Cl **63** *SC* **63.3.1.3** *P* **544** *L* **48** # **99034**

Jackson, Stephen Hatteras Networks

Comment Type **E** *Comment Status* **D** *D1.0 #406*

4 wire mode is out-of-scope due to the 802.3ah bonding mechanism

SuggestedRemedy

strike comments

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Covered by comment 813

Cl **63** *SC* **63.3.1.3** *P* **544** *L* **4853** # **99035**
Artman, Doug Texas Instruments

Comment Type **T** *Comment Status* **D** *D1.0 #432*

This section should be removed as it refers to bonding which is covered in another clause.

SuggestedRemedy

Remove this section.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Covered by comment 813

Cl **63** *SC* **63.3.14.4.1.2** *P* **491** *L* **29** # **99036**
Frazier, Howard Dominet Systems

Comment Type **E** *Comment Status* **D** *D1.0 #509*

IEEE Style manual limits us to 5 levels of indenture, e.g. 63.3.14.4.1

SuggestedRemedy

Renumber subclauses using limit of 5 levels of indenture.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

No longer relevant for new draft.

Cl **63** *SC* **63.4.1.2** *P* **415** *L* **5054** # **814**
Artman, Doug Texas Instruments

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

There are no agreements yet within ITU-T as to how to create a G.shdsl.bis, and we should remove all references to this. Previous agreements in 802.3ah were limited to G.shdsl.

SuggestedRemedy

Remove this note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Covered by comment 811

Cl **63** *SC* **63.4.1.2** *P* **547548** *L* **52541** # **99037**
Artman, Doug Texas Instruments

Comment Type **TR** *Comment Status* **D** *D1.0 #433*

There are no agreements yet within ITU-T as to how to create an G.shdsl.bis, and we should remove all references to this. Previous agreements in 802.3ah were limited to G.shdsl.

SuggestedRemedy

Remove this note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Covered by comment 811

Cl **63** *SC* **63.4.1.3.3** *P* **416** *L* **2931** # **815**
Artman, Doug Texas Instruments

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

This note refers to a standard which does not yet exist and has no substantial technical agreements yet. We should remove this note and keep our references to G.shdsl.

SuggestedRemedy

Remove this note.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by comment 811

Cl **63** *SC* **63.4.1.3.3** *P* **548** *L* **2122** # **99038**
Artman, Doug Texas Instruments

Comment Type **TR** *Comment Status* **D** *D1.0 #434*

This note refers to a standard which does not yet exist and has no substantial technical agreements yet. We should remove this note and keep our references to G.shdsl.

SuggestedRemedy

Remove this note.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Covered by comment 815

Cl **63** *SC* **63.4.8.1** *P* **421** *L* **3033** # **816**

Artman, Doug — Texas Instruments

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

There have been no agreements within 802.3ah to include an enhanced version of SHDSL, and discussion in ITU-T has not yet reached the point where agreements on expanding the bandwidth of SHDSL have been made. We should remove this note and keep our references to G.shdsl (as agreed earlier).

SuggestedRemedy

Remove this note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Covered by comment 813

Cl **63** *SC* **63.4.8.1** *P* **553** *L* **1719** # **99039**

Artman, Doug — Texas Instruments

Comment Type **TR** *Comment Status* **D** *D1.0 #435*

There have been no agreements within 802.3ah to include an enhanced version of SHDSL, and discussion in ITU-T has not yet reached the point where agreements on expanding the bandwidth of SHDSL have been made. We should remove this note and keep our references to G.shdsl (as agreed earlier).

SuggestedRemedy

Remove this note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Covered by comment 816

Cl **63** *SC* **Table 63-1** *P* **547** *L* **42** # **99040**

Jackson, Stephen — Hatteras Networks

Comment Type **E** *Comment Status* **D** *D1.0 #403*

T1E1.4 has acted to approve 32 TC-PAM and to study 64 and 128 TC-PAM; letter to this effect sent to ITU-T SG14/Q4.

SuggestedRemedy

Add necessary data to this chart to reference expanded constellations.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Need specific remedy

Cl **64A** *SC* **64A** *P* **426** *L* **19** # **566**

Dawe, Piers — Agilent

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

This might be a good place to include some informative material on upgrade possibilities re-using fibre outside plant.

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **64A** *SC* **64A.2.1** *P* **426** *L* **6** # **565**

Dawe, Piers — Agilent

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

The statement "EFM optical and copper links are specified to operate over a temperature range of (TBD)" is NOT the case; this is an informative annex. Trying to write one-size-fits-all temperature specs is a lost cause - temperatures vary with climate, with internal/external placing of equipment, with where the temperature is measured, with operator preferences for/against fans, ... We must stay out of this swamp. By defining spectral limits that allow a seamless trade-off in the wavelength range/spectral width space we have much less need for tying ourselves to temperature limits.

SuggestedRemedy

Write something fairly brief, informative, not too quantitative:
Temperature coefficient of wavelength, FP & DFB
Operating temperature window, DFB
Reliability
Fans
Climate?

And let the market participants get on with their business.
Specifically, replace the sentence quoted with "EFM optical and copper links may be required to operate over a wider temperature range than traditional campus-oriented Ethernet links."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The annex is intended to provide background to the assumptions made that yielded the spectral range.

More specific text is needed for Annex 64A. The commenter and/or any participant is invited to bring in more text for the Annex.