C **00** *S* *P* *L* # **99111**

Bharati, Barnali — Wipro Technologies

Comment Type **E** *Comment Status* **A** *D1.1 #171*

Please use either on/off or true/flase consistantly, rather than using all of them for the same variable.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Please provide specific instances and we will correct them.

C **00** *S* **21** *P* *L* # **266**

Dawe, Piers — Agilent

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

Clause 21 '100BASE-T' says it relates to 100BASE-FX. If so it may need updating to refer to 100BASE-LX10 and 100BASE-BX10 also, in 21.1, 21.1.2 and 21.7.

SuggestedRemedy

See longer comment against clause 60.

Proposed Response *Response Status* **C**

REJECT.
Clause 54, the introduction to EFM, provides the appropriate references.
It is not necessary to update Clause 21.

C **01** *S* **1.3** *P* *L* # **265**

Dawe, Piers — Agilent

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

I have entered comments about a normative reference (clause 1.3) and the definitions (1.4) against clause 60.

SuggestedRemedy

We could open a short draft of adds and changes to 1.3 and 1.4 for next time.

Proposed Response *Response Status* **C**

ACCEPT.
Editors should keep track of the adds to 1.3 and 1.4 in the editors note on the first page of each of their clauses. We will produce the changes to Clause 1 in draft D2, the WG ballot draft.

C **01** *S* **57.2.2** *P* **190** *L* **5** # **561**

Brown, Benjamin — AMCC

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

This reference needs to be added to Clause 1.3

SuggestedRemedy

Add this reference to Clause 1.3

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Reassigning comment to Clause 1. Add reference for "ITU-T Recommendation G.975" to 1.3

C **04** *S* **0** *P* **0** *L* **0** # **522**

Brown, Benjamin — AMCC

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

The ifsFECStretch variables make this clause too specific to a particular PHY function.

SuggestedRemedy

Use a more generic convention to expand the use of the existing ifsStretch variables, as provided in brown_p2mp_1_0103.pdf

Proposed Response *Response Status* **C**

ACCEPT.
Also need to update text in Clause 30.
30.3.1.1.33 aRateControlAbility to embrace 1000 Mbps P2MP w/ FEC and 30.3.1.1.34 aRateControlStatus.

C **22** *S* **22** *P* **13** *L* **33** # **610**

Daines, Kevin — World Wide Packets

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

Typo

SuggestedRemedy

Change "$420" to "#420"hb

Proposed Response *Response Status* **C**

ACCEPT.

C **22** *S* **22.2.4.1.11** *P* **14** *L* **30** # **612**

Daines, Kevin World Wide Packets

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

Register name could be more specific.

SuggestedRemedy

Change sub-clause name "Clause 45 Access Control register (Register 13)"
to "MMD Access Control register (Register 13)"

Proposed Response *Response Status* **C**

ACCEPT.

C **22** *S* **22.2.4.1.11** *P* **14** *L* **31** # **613**

Daines, Kevin World Wide Packets

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

Register name could be more specific.

SuggestedRemedy

Change paragraph to read
"The assignment of bits in the MMD Access Control register is shown in Table 22-9. The MMD Access Control register is used in conjunction with the MMD Access Address Data register (register 14) to provide access to the MMD address space using the interface and mechanisms defined in 22.2.4."

Proposed Response *Response Status* **C**

ACCEPT.

C **22** *S* **22.2.4.1.12** *P* **15** *L* **13** # **615**

Daines, Kevin World Wide Packets

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

Register name could be more specific.

SuggestedRemedy

Change sub-clause "Clause 45 Access Address Data register (Register 14)"
to "MMD Access Address Data register (Register 14)"

Proposed Response *Response Status* **C**

ACCEPT.

C **22** *S* **22.2.4.1.12** *P* **15** *L* **15** # **616**

Daines, Kevin World Wide Packets

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

Register name could be more specific.

SuggestedRemedy

Change paragraph to read
"The assignment of bits in the MMD Access Address Data register is shown in Table 22-10. The MMD Access Address Data register is used in conjunction with the MMD Access Control register (register 13) to provide access to the MMD address space using the interface and mechanisms defined in 22.2.4. Accesses to this register are controlled by the value of the fields in register 13 and the contents of the MMD's individual address field as described in 22.2.4.1.11."

Proposed Response *Response Status* **C**

ACCEPT.

C **22** *S* **22.2.4.1.12** *P* **16** *L* **30** # **621**

Daines, Kevin World Wide Packets

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

(Refer to comment re: 24.2.4.2, page 20, line 42)

No restriction is placed upon setting bit 0.1 when an OAM entity does not exist. This needs to be remedied to prevent any and all frames from being transmitted when link_status != OK.

SuggestedRemedy

Add text

"Bit 0.1 shall only be set when an OAM entity exists."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add text:
"Bit 0.1 shall only be set when an OAM sublayer entity exists and is enabled."

Create PICS option of the implementation of the OAM sublayer.
- OAM exists and is enabled.

Create PICS entry for 0.1
- Mandatory: If "1.7 and option exists" 0.1 may be set.
- Prohibited when above condition is not true.

Related to comment #620.

C **22** *S* **Table 22-10** *P* **15** *L* **22** # **617**

Daines, Kevin World Wide Packets

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

Register name could be more specific.

SuggestedRemedy

Change table name to "MMD Access Address Data register bit definitions"

Proposed Response *Response Status* **C**

ACCEPT.

C **22** *S* **Table 22-6** *P* **14** *L* **20** # **611**

Daines, Kevin World Wide Packets

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

Register name could be more specific.

SuggestedRemedy

Change "Clause 45 Access Control Register" to
"MMD Access Control Register"

Change "Clause 45 Access Address Data Register" to
"MMD Access Address Data Register

Proposed Response *Response Status* **C**

ACCEPT.

C **22** *S* **Table 22-9** *P* **14** *L* **36** # **614**

Daines, Kevin World Wide Packets

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

Register name could be more specific.

SuggestedRemedy

Change table name "Clause 45 Access Control register bit definitions"
to "MMD Access Control register bit definitions"

Proposed Response *Response Status* **C**

ACCEPT.

C **24** *S* **24.2.4.2** *P* **20** *L* **37** # **618**

Daines, Kevin World Wide Packets

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

Variable name is incorrect.

SuggestedRemedy

Change "mr_oam_enable" to "mr_unidirectional_oam_enable"

Proposed Response *Response Status* **C**

ACCEPT.

C **24** *S* **24.2.4.2** *P* **20** *L* **42** # **619**

Daines, Kevin World Wide Packets

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

Variable name is incorrect.

SuggestedRemedy

Change "mr_oam_enable" to "mr_unidirectional_oam_enable"

Proposed Response *Response Status* **C**

ACCEPT.

C **24** *S* **24.2.4.2** *P* **20** *L* **43** # **620**

Daines, Kevin World Wide Packets

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

If mr_unidirectional_oam_enable were set to TRUE and no OAM entity existed, the text on lines 42-43 would be correct. However, I believe this is not the intended behavior. I believe mr_unidirectional_oam_enable should only be set with an OAM entity exists.

SuggestedRemedy

Change "This allows the transmission of frames when link_status != OK."
to "This allows the transmission of OAMPDUs when link_status != OK."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Changed text:
"This enables the ability to transmit OAMPDUs when link_status != OK."

Related to comment #621.

C **24** *S* **24.2.4.2** *P* **22** *L* **37** # **523**

Brown, Benjamin AMCC

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

Used old variable name

SuggestedRemedy

Replace all instances of mr_oam_enable with mr_unidirectional_oam_enable

Proposed Response *Response Status* **C**

ACCEPT.

C **24** *S* **Figure 24-16** *P* **22** *L* **22** # **623**

Daines, Kevin World Wide Packets

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

Two problems with this figure. First, the variable name is incorrect and it appears the fonts are inconsistent.

SuggestedRemedy

Change "mr_oam_enable" to "mr_unidirectional_oam_enable" (lines 22, 24, 27)

Check font for each variable instance (lines 22, 24, 27)

Proposed Response *Response Status* **C**

ACCEPT.

C **24** *S* **Figure 24-8** *P* **21** *L* **1** # **622**

Daines, Kevin World Wide Packets

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

Variable name is incorrect.

SuggestedRemedy

Change "mr_oam_enable" to "mr_unidirectional_oam_enable".

Proposed Response *Response Status* **C**

ACCEPT.

C **30** *S* **30.11** *P* **45** *L* **18** # **491**

Matt, Squire Hatteras Networks

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

Suggest new element to cover remote configuration.

SuggestedRemedy

Add objects to cover: OAM_configuration, OAM_PDU_configuration, extension, and remote MAC address.

Proposed Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Delete sub-clause 30.11.2.
Delete oRemote from Fig 30-3, Fig 30-4.

Add attributes for suggested remedy in 30.11.1.

Editor will elaborate.

C **30** *S* **30.11.1** *P* **38** *L* **10** # **626**

Daines, Kevin World Wide Packets

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

Normally wouldn't comment on Editor's notes, but we should probably fix the spelling errors in this one.

SuggestedRemedy

Change
"suffiecnt" to "sufficient" (line 12)
"attrbute" to "attribute" (line 13)
"mschine" to "machine" (line 13)
"fat" to "far" (line 14)

Proposed Response *Response Status* **C**

ACCEPT.

C **30** *S* **30.11.1.1.1** *P* **38** *L* **27** # **627**

Daines, Kevin World Wide Packets

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

Grammar.

SuggestedRemedy

Change "a OAM" to "an OAM".

Proposed Response *Response Status* **C**

ACCEPT.

C **30** *S* **30.11.1.1.2** *P* **38** *L* **39** # **160**
Romascanu, Dan AVAYA Inc.

Comment Type **TR** *Comment Status* **R**
Need to explain what is the effect of setting oOAMAdminState to all other variables

SuggestedRemedy
Add explanation in the BEHAVIOUR clause

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

Clause 30 does not define the behaviour of attributes when the related entity is in disable state.

C **30** *S* **30.11.1.1.20** *P* **43** *L* **22** # **629**
Daines, Kevin World Wide Packets

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

SuggestedRemedy
Change "a Event" to "an Event".

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

C **30** *S* **30.11.1.1.21** *P* **43** *L* **33** # **630**
Daines, Kevin World Wide Packets

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

SuggestedRemedy
Change "a Event" to "an Event"

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

C **30** *S* **30.11.1.1.21** *P* **45** *L* **24** # **10**
Martin, David Nortel Networks

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

SuggestedRemedy
Change "aOAMLocalErrFrameSecsPeriodEvent" to "aOAMLocalErrFrameSecsEvent".

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

C **30** *S* **30.11.1.1.21** *P* **45** *L* **33** # **11**
Martin, David Nortel Networks

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

SuggestedRemedy
Change "Errored Frame Period Seconds TLV" to "Errored Frame Seconds TLV".

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

C **30** *S* **30.11.1.1.22** *P* **43** *L* **36** # **161**
Romascanu, Dan AVAYA Inc.

Comment Type **T** *Comment Status* **A**
Incorrect variable name

SuggestedRemedy
correct name - should be aOAMErrFramePeriodEvent

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

Propose we accept the variable name suggested in comment #202.

C **30** *S* **30.11.1.1.22** *P* **43** *L* **37** # **12**
Martin, David Nortel Networks

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

SuggestedRemedy
Change "aOAMVendorSpecificTx" to "aOAMLocalErrFramePeriodEvent".

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

C **30** *S* **30.11.1.1.22** *P* **43** *L* **37** # **202**
Ken, Murakami Mitsubishi Electric

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

SuggestedRemedy
Change "aOAMVendorSpecificTx" to "aOAMLocalErrFramePeriodEvent".

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

C **30** *S* **30.11.1.1.22** *P* **43** *L* **46** # **631**
Daines, Kevin World Wide Packets

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

SuggestedRemedy
Change "a Event" to "an Event"

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

C **30** *S* **30.11.1.1.23** *P* **44** *L* **1** # **632**
Daines, Kevin World Wide Packets

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

SuggestedRemedy
Change "A integer" to "An integer" (line 1)

Change "a Event" to "an Event" (line 2)

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

C **30** *S* **30.11.1.1.25** *P* **44** *L* **25** # **633**
Daines, Kevin World Wide Packets

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

SuggestedRemedy
Change "a Event" to "an Event"

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

C **30** *S* **30.11.1.1.26** *P* **44** *L* **37** # **634**
Daines, Kevin World Wide Packets

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

SuggestedRemedy
Change "a Event" to "an Event"

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

C **30** *S* **30.11.1.1.26** *P* **46** *L* **27** # **13**
Martin, David Nortel Networks

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

SuggestedRemedy
Change "aOAMRemoteErrFrameSecsPeriodEvent" to "aOAMRemoteErrFrameSecsEvent".

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

C **30** *S* **30.11.1.1.26** *P* **46** *L* **37** # **14**
Martin, David Nortel Networks

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

SuggestedRemedy
Change "Errored Frame Period Seconds TLV" to "Errored Frame Seconds TLV".

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

C **30** *S* **30.11.1.1.27** *P* **44** *L* **49** # **635**
Daines, Kevin World Wide Packets

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

SuggestedRemedy
Change "a Event" to "an Event"

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

C **30** *S* **30.11.1.1.28** *P* **45** *L* **3** # **636**
Daines, Kevin World Wide Packets

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

SuggestedRemedy
Change "A integer" to "An integer" (line 3)

Change "a Event" to "an Event" (line 4)

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

C **30** *S* **30.11.1.1.29** *P* **47** *L* **14** # **15**

Martin, David — Nortel Networks

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

Need to specify that the counter only counts loopback frames that are dropped.

SuggestedRemedy

Change "A count of frames that would otherwise" to "A count of loopback frames that would otherwise".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Edit:
Change 30.11.1.1.29 attribute name to aFramesLostDueToOAMError.

Edit:
In Multiplexer section, mention existence of this counter for MAC Client frames.

C **30** *S* **30.11.1.1.5** *P* **39** *L* **27** # **628**

Daines, Kevin — World Wide Packets

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

Inconsistent.

SuggestedRemedy

Remote "a " ('a' and two spaces) to make consistent with the other attributes.

Proposed Response *Response Status* **C**

ACCEPT.

C **30** *S* **30.5.1.1.12** *P* **36** *L* **48** # **624**

Daines, Kevin — World Wide Packets

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

Increment rate is missing.

SuggestedRemedy

Change "???_???" to "25 000 000".

Proposed Response *Response Status* **C**

ACCEPT.

C **30** *S* **30.5.1.1.12** *P* **36** *L* **53** # **625**

Daines, Kevin — World Wide Packets

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

Extra space.

SuggestedRemedy

Change "code- group" to "code-group".

Proposed Response *Response Status* **C**

ACCEPT.

C **30** *S* **30.5.1.1.4** *P* **35** *L* **24** # **159**

Romascanu, Dan — AVAYA Inc.

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

What is the value of sMediaAvailable while a loopback is performed on the link?

SuggestedRemedy

Explain behavior, possibly add 'in loopback' enumerated

Proposed Response *Response Status* **C**

REJECT.

As aMediaAvailable is a MAU object, the PHY, during OAM loopback, either at the remote or local device, is oblivious of the OAM sublayer activity.

C **30** *S* **Figure 30-3** *P* **28** *L* **12** # **158**

Romascanu, Dan — AVAYA Inc.

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

I do not understand how multuple EPON remote entities relate to OAM. The relatioship between oOAM and oRemote is one-to-one. Does this mean that multiple OAMs exist as per the number of remote ONUs, and they need to be dinamically created and deleted, when a new EPON remote link is established?

SuggestedRemedy

If I am right (not sure I understood correctly the diagram) then the relationship between the oOAM and oRemote needs to be one-to-many

Proposed Response *Response Status* **C**

REJECT.

See comment #491. oRemote will be removed.

C **36** *S* **36** *P* **49** *L* **40** # **637**

Daines, Kevin World Wide Packets

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

Normally don't comment on editor's notes, but for posterity's sake, let's fix the revision history.

SuggestedRemedy

Change "24.2.3.2" to "36.2.5.1.3" (line 40).

Repeat edit on line 41.

Proposed Response *Response Status* **C**

ACCEPT.

C **36** *S* **36.2.5.1.3** *P* **50** *L* **32** # **638**

Daines, Kevin World Wide Packets

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

Variable name is wrong.

SuggestedRemedy

Change "mr_oam_enable" to "mr_unidirectional_oam_enable" (2x)

Proposed Response *Response Status* **C**

ACCEPT.

C **36** *S* **36.2.5.2.1** *P* **50** *L* **40** # **639**

Daines, Kevin World Wide Packets

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

Variable name is wrong.

SuggestedRemedy

Change "mr_oam_enable" to "mr_unidirectional_oam_enable".

Proposed Response *Response Status* **C**

ACCEPT.

C **45** *S* **45.2** *P* **55** *L* **1** # **376**

Beili, Edward Actelis

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

Table 45-1 "PCS registers to add to clause 45" is located under 45.2.1.1.1 "MII receive during transmit".

SuggestedRemedy

Move the table to the top of 45.2.

Proposed Response *Response Status* **C**

REJECT.

The comment is correct, but framemaker and IEEE style guide call for the table to fall where it will. The table is anchored to 45.2 and will float around nearby based on the text.

C **45** *S* **45.2.1.1.1** *P* **54** *L* # **25**

Marris, Arthur Cadence

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

Delete " See 61.1.4.1.1." and replace with text below.

SuggestedRemedy

The variable tx_rx_simultaneously for the PHY-MAC Rate-Matching function takes on the value of this bit as defined in 61.2.1.3.2

Proposed Response *Response Status* **C**

ACCEPT.

C **45** *S* **45.2.1.1.2** *P* **55** *L* **38** # **24**

Marris, Arthur Cadence

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

REFERENCE does not reference anything

SuggestedRemedy

Make REFERENCE point to crs_and_tx_en_infer_col in 61.2.1.3.2

Proposed Response *Response Status* **C**

ACCEPT.

C **45** *S* **45.2.2.1** *P* **56** *L* **11** # **21**

Marris, Arthur — Cadence

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

The sentence "In the case where PMIs may be aggregated to multiple MIIs the availability must be limited such that no PMI may be mapped to multiple MIIs prior to enabling the links." does not read well and I think the use of the word "must" is incorrect.

The first "must" in the following sentence should be replaced with a "shall". "In this case, the reset state of the PMD_available_register must reflect the capabilities of the device, the management entity must reset appropriate bits to meet the restriction described."

SuggestedRemedy

How about? "For PMIs that may be accessed through more than one MII the availability shall be limited such that no PMI may be mapped to more than one MII prior to enabling the links.

In this case, the reset state of the PMD_available_register shall reflect the capabilities of the device, the management entity must reset appropriate bits to meet the restriction described."

I think this could be improved further but I am not entirely sure what the original author was trying to say here.

Proposed Response *Response Status* **C**

ACCEPT.

C **45** *S* **45.2.2.1** *P* **56** *L* **3** # **375**

Beili, Edward — Actelis

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

The word "package" is used throughout the text for a group of PMDs which may be aggregated. Think of another, more abstract word, that does not have "packed in the same physical device" meaning.

SuggestedRemedy

aggregation group (pool, clique, pack, ...)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Just remove bullet A.
Also remove bullet D, while we're here.

Replace instances of package with agregation group, define agg group in the definitions section

C **45** *S* **45.2.2.3** *P* **57** *L* **4** # **377**

Beili, Edward — Actelis

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

Remote Discovery mechanism allows to cope with multiple LTs connected to the same NT (multipoint-to-point). However there's no mechanism in place to deal with reverse situation of single LT connected to multiple NTs (point-to-multipoint). Such mechanism would allow automatic mapping of PMDs to a specific MII in Multi-MII LT application.

SuggestedRemedy

Define 2 new registers:
"Local ID" register (R/W) in NT - 6 bytes long
"Remote ID" register (RO) in LT - 6 bytes long

The idea is that NT would set "Local ID" register in all PMD to a unique value (e.g. NT's MAC address). The LT would be able to query this register (e.g. using G.handshake CLR message) obtaining its value in locally available "Remote ID" register. It would then be able to group PMDs with the same "Remote ID" value and map them to a specific MII (one MII per group of course).

Both "Remote Discovery" and "Remote ID" registers can be obtained during a single operation (single CLR message).

In table 45-5 (Aggregation Discovery Control register) change to:

Discovery operation 5 bits:
00001 = Ready (default)
00000 = Set Remote Discovery register at NT if clear
00011 = Clear Remote Discovery register at NT if same
10001 = Get NT' Remote Discovery register (value in Discovery Code register)
10010 = Get NT' Local ID register (value in Remote ID register)
10011 = Get Both Remote Discovery and Remote ID
the rest is reserved.

Discovery operation result 4 bits:
0000 = Discovery operation completed successfully (default)
0001 = Get NT' Remote Discovery operation unsuccessful
0010 = Get NT' Own ID operation unsuccessful
0011 = Both Get operations are unsuccessful
the rest is reserved.
---
7 bits are reserved.

Add a note that Unsuccessful Get operation clears the content of the relevant register (Discovery Code and/or Remote ID).

Proposed Response *Response Status* **C**

REJECT.

These registers are not required for aggregation discovery. The accepted aggregation proposal calls for a completely LT driven discovery mechanism.

Please see the text prepared by Hugh Barrass for examples of how aggregation discovery can work. (hbarrass_cmt_response377.pdf)

Direct the editors of C61 and C45 to include hbarrass_cmt_response377.pdf and additional text based on "hbarrass discovery presentation" in an appropriate place in the next draft.

Voting to accept in principle with the above remedy:
Y:12 N:0 A:6

C **45** *S* **45.2.2.3.1** *P* **57** *L* **34** # **492**

Matt, Squire — Hatteras Networks

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

I've read this ten times and still have no idea whats going on. Some help!

SuggestedRemedy

This description confuses me totally.

Proposed Response *Response Status* **C**

REJECT.

See the updated text submitted by Hugh for C61

C **45** *S* **45.3** *P* **62** *L* **38** # **578**

Simon, Scott — Cisco Systems, Inc

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

Registers should be added to express the state of the local (transmitted) indicator bits as well as the indicator bits received from the remote side.

SuggestedRemedy

Create a register "Local Indicator Status" with a bit for each VDSL indicator bit. The bits should be clear on read. A bit is set any time the local PMD transmits a VDSL frame with that bit set.

Create a register "Remote Indicator Status" with a bit for each VDSL indicator bit. The bits should be clear on read. A bit is set any time the local PMD receives a VDSL frame with that bit set.

The registers should be created for both the MCM and SCM versions.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The editor should work on a proposal that treats each indicator bit appropriately. IBs for SHDSL should also be addressed.

C **45** *S* **45.4** *P* *L* # **374**

Barnea, Eyal — Metalink

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

There are no registers fo suggested NT STP.
We need to add those registers.

SuggestedRemedy

See barnea_cmts_1_0103.pdf

Proposed Response *Response Status* **C**

ACCEPT.

C **45** *S* **45.4.1.10** *P* **70** *L* **10** # **368**

Barnea, Eyal — Metalink

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

TX and RX should be chnaged to DS and US as in T1.424
The LT should have RO permission to this register.

SuggestedRemedy

Change TX to DS and RX to US in the table.
Change the LT to RO permission.
Change the subclauses titles as well.

Proposed Response *Response Status* **C**

ACCEPT.

C **45** *S* **45.4.1.13** *P* **72** *L* # **370**

Barnea, Eyal — Metalink

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

TX and RX should be changed to DS and US as in T1.424.
The LT should have RO permission to this register.

SuggestedRemedy

See barnea_cmts_1_0103.pdf for suggested text.
Delete 45.4.1.14

Proposed Response *Response Status* **C**

ACCEPT.

C **45** *S* **45.4.1.5** *P* **67** *L* **17** # **365**
Barnea, Eyal Metalink

Comment Type **T** *Comment Status* **A**
The symbol rate should be defined for DS1, DS2, US1 and US2 as in T1.424.

SuggestedRemedy
See barnea_cmts_1_0103.pdf for suggested text.
Delete 45.4.1.6

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

C **45** *S* **45.4.1.7** *P* **68** *L* **20** # **366**
Barnea, Eyal Metalink

Comment Type **T** *Comment Status* **A**
The structure of the NT symbol register should be for DS and US as in T1.424
The LT should have RO permission to this register.

SuggestedRemedy
See barnea_cmts_1_0103.pdf for suggested text.
Delete 45.4.1.8

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

C **45** *S* **45.4.1.9** *P* **69** *L* **22** # **367**
Barnea, Eyal Metalink

Comment Type **T** *Comment Status* **A**
TX and RX shoud be changed to DS and US, as in T1.424 in table 45-24

SuggestedRemedy
Change TX to DSand RX to US in the table
Change the subcaluse titles as well.

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

C **45** *S* **45.4.11** *P* **71** *L* # **369**
Barnea, Eyal Metalink

Comment Type **T** *Comment Status* **A**
TX and RX should be changed to DS and US as in T1.424

SuggestedRemedy
See barnea_cmts_1_0103.pdf for suggested text.
Delete 45.4.1.12

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

C **45** *S* **General** *P* **0** *L* **0** # **524**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **A**
Missing Coding Violation Counter that should have been moved here from Clause 22 based on comments resolved in Kauai

SuggestedRemedy
Add the Coding Violation Counter, using text from Clause 22 in D1.1

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

C **45** *S* **Table 45-30** *P* **73** *L* **22** # **371**
Barnea, Eyal Metalink

Comment Type **T** *Comment Status* **A**
The NY must be able to write to the TX PSD level register in order to perfore UPBO.

SuggestedRemedy
Change the NT to NT:R/W.

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

The R/W ability is from the management perspective. The PHY itself performs UPBO and it may update the register as it wishes.

Text to clarify what value gets written here and when shall be added.

C **45** *S* **Table 45-32** *P* **74** *L* **15** # **372**
Barnea, Eyal Metalink

Comment Type **E** *Comment Status* **A**
Table title is wrong

SuggestedRemedy
RX power level register bit defintion

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

C **45** *S* **Table 45-32** *P* **74** *L* **20** # **373**
Barnea, Eyal Metalink

Comment Type **T** *Comment Status* **A**
The description is wrong

SuggestedRemedy
P:=value of bits
RX power=P/2 - 100 dBm

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

C **54** *S* **54.1** *P* **80** *L* # **398**
Braga, Aldobino IOL - UNH

Comment Type **E** *Comment Status* **R**
Figure 54-1 says that the OAM layer is optional, this is true, but the PHYs shown in the figure are strictly for EFM:P2P where OAM is not optional.

SuggestedRemedy
a) Remove optional from OAM Layer in Figure 54-1.

b) Remove EFM from figure caption.

Proposed Response *Response Status* **C**
REJECT.
Management is always optional in Ethernet.
55.1.1 and 55.1.6.1 need to be updated to reflect that OAM is optional

C **54** *S* **54.1** *P* **81** *L* # **399**
Braga, Aldobino IOL - UNH

Comment Type **E** *Comment Status* **R**
Figure 54-2 says that the OAM layer is optional, this is true, but the PHYs shown in the figure are strictly for EFM:P2MP where OAM is not optional.

SuggestedRemedy
a) Remove optional from OAM Layer in Figure 54-2.

Proposed Response *Response Status* **C**
REJECT.
Management is always optional in Ethernet.
55.1.1 and 55.1.6.1 need to be updated to reflect that OAM is optional

C **54** *S* **54.1.1** *P* **83** *L* **40** # **525**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
fix wording

SuggestedRemedy
Replace "the MPCP protocol, which communicates with an instance of MPCP" with "the MPCP, which communicates with an instance of the MPCP"

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

C **54** *S* **54.1.4** *P* **82** *L* # **402**
Braga, Aldobino IOL - UNH

Comment Type **E** *Comment Status* **A**
The word "Asymetric" should be spelled "Asymmetric"

SuggestedRemedy
Asymmetric

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

C **54** *S* **54.1.4** *P* **82** *L* **31** # **26**
Marris, Arthur Cadence

Comment Type **E** *Comment Status* **A**
Common spelt wrong on line 31

Symmetric spelt wrong on line 48

SuggestedRemedy
Replace comon with common.

Replace Symetric with Symmetric.

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

C **54** *S* **54.1.4** *P* **82** *L* **31** # **400**

Braga, Aldobino IOL - UNH

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

The word "comon" should be spelled "common".

SuggestedRemedy

common

Proposed Response *Response Status* **C**

ACCEPT.

C **54** *S* **54.1.4** *P* **82** *L* **48** # **401**

Braga, Aldobino IOL - UNH

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

The word "Symetric" should be spelled "Symmetric"

SuggestedRemedy

Symmetric

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* *P* **090** *L* **3** # **97**

Tetsuya, Yokomoto FUJITSU ACCESS LI

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

"b) Dying Gasp (DG). An recoverable local failure condition has occurred."The grammar error is included. And it differs from the meaning in the description about other Dying Gasp (DG).

SuggestedRemedy

Should read "b) Dying Gasp (DG). An unrecoverable local failure condition has occurred."

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* *P* **101** *L* **14** # **98**

Tetsuya, Yokomoto FUJITSU ACCESS LI

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

I think that I should specify the right or wrong of abandonment of the transmission MAC Client frames in case transmission of OAM_DG.request is performed. Moreover, when discarding it, I think that the processing method should be specified.
For example, if there is implementation which disregards the law of 10B symbol and interrupts transmission of MAC Client frames, it may cause incorrect operation of a communication partner's PHY.

SuggestedRemedy

Add the following description:
MAC Client frames under transmission may be discarded when transmitting OAM_DG.request.
In that case, MAC Client frames transmission is interrupted, and after adding an EOP symbol after minimum IFG, you should control to the lower layer to transmit OAM_DG.request.
When resuming transmission of MAC Client frames after OAM_DG.request transmission, you should control to the lower layer to add an SOP symbol and to transmit after minimum IFG.

Proposed Response *Response Status* **C**

REJECT.

The service primitives for transmitting frames between sublayer can not be interrupted. Rather, the service primitive occurs instantaneously.

The text in question talks about the setting of the dying gasp bit in the OAMPDU about to be transmitted. The text does not imply that a frame currently being transmitted can be interrupted, and another frame be sent.

If that were the case, your concerns about what happens on the media are valid. However, the conversion from frame to packet, the timing of IFG (IPG), etc is left up to the MAC sublayer. Encoding of the packet and adherence to coding rules is left up to the PCS.

C **55** *S* **1.1** *P* **088** *L* **5** # **526**

Brown, Benjamin AMCC

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

wrong word

SuggestedRemedy

Replace "which" with "that"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **1.1** *P* **088** *L* **9** # **527**

Brown, Benjamin AMCC

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

What does the sentence "OAM is intended for IEEE 802.3 physical layers." mean? OAM is not implemented in the PHY nor does it have a lot to do with the PHY, except perhaps the remote fault stuff.

SuggestedRemedy

Remove sentence.
The same things applies for the identical sentence in 55.1.6.1, page 89, line 52.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove sentence on line 9.

Change "physical layer devices" to "links" on line 52.

C **55** *S* **1.2** *P* **088** *L* **26** # **528**

Brown, Benjamin AMCC

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

What does this subclause add? It is already effectively duplicated in 55.1.3.

SuggestedRemedy

Remove this subclause.
Renumber following subclauses.
Rename the new 55.1.2 (the current 55.1.3) "Summary of objectives and major concepts"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Edits:
Suggested Remedy edits plus

Remove "additional" from first line of (new) 55.1.2

C **55** *S* **1.3** *P* **088** *L* **39** # **529**

Brown, Benjamin AMCC

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

The first 2 sentences in bullet a)2) need to be distinct.

SuggestedRemedy

In the first sentence, replace "Subscriber" with "Point to point subscriber"
In the second sentence, replace "Subscriber" with "Point to multipoint subscriber"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Also split into a)2) and a)3)

C **55** *S* **1.6.3** *P* **090** *L* **40** # **530**

Brown, Benjamin AMCC

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

This sentence makes it sound like the Pause mechanism only pauses OAMPDUs

SuggestedRemedy

Replace "transmission of OAMPDUs" with "transmission of all MA_DATA.requests, including OAMPDUs"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **1.6.4** *P* **090** *L* **45** # **531**

Brown, Benjamin AMCC

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

wrong word

SuggestedRemedy

Replace "which" with "that"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **3** *P* **091** *L* **25** # **532**

Brown, Benjamin AMCC

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

wrong word

SuggestedRemedy

Replace "which" with "that"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **3.2** *P* **090** *L* **49** # **533**

Brown, Benjamin AMCC

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

bad primitive name

SuggestedRemedy

Replace "OAM.indication" with "OAMPDU.indication"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **3.3** *P* **092** *L* **4** # **534**

Brown, Benjamin AMCC

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

wrong word

SuggestedRemedy

Replace "recoverable" with "unrecoverable"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **4.2** *P* **093** *L* # **152**

Hirai, Hideyuki Sumitomo Electric

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

Figure 55-3
In the current specification, as it is difficult for MAC Control Client of an ONU to know the necessary bandwidth of loopback frames, an ONU can not request the bandwidth to an OLT using a Report MPCPDU. Although there is no clear description in the specification, it seems the bandwidth for loopback frames should be calculated and allocated to an ONU by an OLT.
There can be a few ways for an OLT to allocate upstream bandwidth to an ONU
(1) An OLT calculates and allocates the bandwidth based on a request from the ONU.
(2) An OLT calculates and allocates the bandwidth without using information from the ONU.
(3) Mixture of (1) and (2)
OAM specification should allow any of those bandwidth allocation methods.

SuggestedRemedy

Loopback frames should be returned at MAC Client of an ONU, so that the specification can allow any of the bandwidth allocation method described above.

Proposed Response *Response Status* **C**

REJECT.

Within the OAM STF, there has been a requirement to prevent the passing of loopback frames up to the MAC Client sublayer within the remote device (ONU in the case of P2MP).

The OAM STF feels that option (2) described within the comment is adequate for allocating bandwidth for the ONU since the OLT is the source of the loopback traffic during the test.

Also, the OLT knows the amount of OAMPDU traffic that may originate in the ONU, due to min and max rate timer values and OAMPDU size.

This issue has been discussed in joint meetings with P2MP in September and November of 2002.

C **55** *S* **4.2** *P* **093** *L* **40** # **537**

Brown, Benjamin AMCC

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

In the case of Discovery, the remote device is required to send OAMPDUs.

SuggestedRemedy

Replace bullet c) with:

c) The remote device is required to send OAMPDUs to the local device in order to keep the Discovery process alive. It is also permitted to send other OAMPDUs to the local device.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

c) The remote device is required to maintain the minimum transmit rate while in loopback mode.

C **55** *S* **5.1** *P* **094** *L* **38** # **538**

Brown, Benjamin AMCC

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

There are no primitives that start with "Mux:"

SuggestedRemedy

Remove bullet b)

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **5.2** *P* **094** *L* *#* **153**

Hirai, Hideyuki — Sumitomo Electric

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

In the current specification, as it is difficult for MAC Control Client of an ONU to know the necessary bandwidth of OAM frames, an ONU can not request the bandwidth to an OLT using a Report MPCPDU. Although there is no clear description in the specification, it seems the bandwidth for OAM frames should be calculated and allocated to an ONU by an OLT.
There can be a few ways for an OLT to allocate upstream bandwidth to an ONU
(1) An OLT calculates and allocates the bandwidth based on a request from the ONU.
(2) An OLT calculates and allocates the bandwidth without using information from the ONU.
(3) Mixture of (1) and (2)

OAM specification should allow any of those bandwidth allocation methods.

SuggestedRemedy

Add primitives to indicate expiration of max_rate_timer and min_rate_timer, from OAM sublayer to OAM client sublayer. Also, add a primitive to request to send an Information OAMPDU, from OAM client sublayer to OAM sublayer.
When OAM client receives indication of max_rate_timer expiration, it may request to send any OAMPDU. When OAM client receives indication of min_rate_timer expiration, it has to issue a request to send an Information OAMPDU. When OAM sublayer sends an OAMPDU, it has to reset max_rate_timer and min_rate_timer.

This helps ONU to request all the bandwidth of sending frames including OAMPDUs,using a Report MPCPDU.

Proposed Response *Response Status* **C**

REJECT.

See response to comment #152.

C **55** *S* **5.3.1.1** *P* **095** *L* **18** *#* **539**

Brown, Benjamin — AMCC

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

In 2.3, Function describes the transfer of data between MAC Client peers.
It does not describe the transfer of data from MAC Client to MAC.

SuggestedRemedy

Repalce "an OAM entity" with "a peer OAM client entity"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **5.3.1.4** *P* **095** *L* **52** *#* **540**

Brown, Benjamin — AMCC

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

Should use the word sublayer when referring to the OAM entity

SuggestedRemedy

Replace this and all other instances in 55.5.3 of "OAM entity" with "OAM sublayer entity"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **5.3.1.4** *P* **095** *L* **54** *#* **541**

Brown, Benjamin — AMCC

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

wrong word

SuggestedRemedy

Replace "OAM sublayer entity" with "OAM client entity"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **5.3.3.2** *P* **096** *L* **51** *#* **542**

Brown, Benjamin — AMCC

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

Add the version parameter to the OAM_STATE.request primitive

SuggestedRemedy

Add to the parameter list on page 96, line 51.
Add to the end of the paragraph on page 97, line 8 "The version parameter is used in Information OAMPDUs for Discovery or to keep the link alive."
Add to parameter list on page 100, line 53
Add to list on page 103, line 11

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to #472.

C **55** *S* **5.3.6.2** *P* **098** *L* **30** # **543**

Brown, Benjamin AMCC

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

No parameter is necessary if the primitive is only generated when the timer expires

SuggestedRemedy

Remove paramater and its description

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #683.

LL primitive has been consolidated per #683.

C **55** *S* **5.6.1** *P* **102** *L* # **157**

Hirai, Hideyuki Sumitomo Electric

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

Figure 55-4
Figure 55-4 describes 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.

SuggestedRemedy

To make the document easily understandable, there should be Discovery state diagrams of Active mode node and that of Passive mode node.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #485.

C **55** *S* **5.6.1** *P* **102** *L* **54** # **544**

Brown, Benjamin AMCC

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

bad state

SuggestedRemedy

Replace "SEND_LOCAL_STATE_2" with "SEND_LOCAL_STATE_1"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **5.6.3** *P* **101** *L* **32** # **545**

Brown, Benjamin AMCC

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

Bullet e) is superfluous as it is merely an example of bullet d).

SuggestedRemedy

Remove this bullet.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.1.1** *P* **087** *L* **15** # **468**

Matt, Squire Hatteras Networks

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

Suggest we add a bullet specifically stating that write access to MIB variables is not provided.

SuggestedRemedy

Add a bullet (d) The ability to set/write remote MIB variables is not provided.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.1.6.1** *P* **088** *L* **1** # **114**

Veerayah, Kumaran Institute for Infocomm

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

The path from OAM Control to OAM Multiplexer is shown as "Control:MADR". Should be "Mux:MADR" instead.

SuggestedRemedy

Change to Mux:MADR

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

It has been noted by several other commentors that Figure 55-5 references Mux:MADR which is non-existent in Figure 55-2. Other comments suggested fixing Figure 55-5. Propose accepting those comments.

C **55** *S* **55.1.6.1** *P* **088** *L* **30** # **470**

Matt, Squire — Hatteras Networks

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

Placement of figure is confusing. The figure includes many architectural blocks which are not explained in the preceding or immediately following sections.

SuggestedRemedy

Move 55.5.7 and 55.5.8 (parser, multiplexor block descriptions) up into 55.1 or maybe 55.2. Add sections for control and OAM block. Or maybe from 55.5.5 instead.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Tend to agree that figure feels out of place. Suggest figure be moved to 55.5.

C **55** *S* **55.1.6.3** *P* **088** *L* **40** # **403**

Braga, Aldobino — IOL - UNH

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

The word "signalling" should be changed to "signaling"

SuggestedRemedy

signaling

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.1.6.4** *P* **090** *L* **45** # **16**

Martin, David — Nortel Networks

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

Recommended wording change.

SuggestedRemedy

Change "obtrusive" to "intrusive". This aligns with the terms 'non-intrusive' versus 'intrusive' typically used when describing monitoring and test functionality (at least that I'm familiar with).

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.1.6.l** *P* **087** *L* **54** # **481**

Matt, Squire — Hatteras Networks

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

Should we point out that we're really talking non-multiple access links? Our MIBs and procedures, for example, aren't setup for multiple-access links.

SuggestedRemedy

Specify we're talking about p2p, or emulated p2p for the PON case.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change first sentence to read:
"OAM is intended for point-to-point or emulated point-to-point IEEE 802.3 physical layer devices."

C **55** *S* **55.2.2** *P* **089** *L* **14** # **162**

Romascanu, Dan — AVAYA Inc.

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

Passive Devices should be capable of sending Event Notification OAMPDUs

SuggestedRemedy

add this capability to the Passive mode definition

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Editor Note:
Fix "Variable Requests"

C **55** *S* **55.2.2** *P* **089** *L* **20** # **469**

Matt, Squire — Hatteras Networks

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

Remove editors note, answering affirmative that passive-passive is excluded. One of the functions is link health, and that can't be verified with two passive links.

SuggestedRemedy

Yank note.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.2.2** *P* **091** *L* **21** # **648**

Thatcher, Jonathan — World Wide Packets

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

It is not clear if an active port can ignor requests form another active port.

SuggestedRemedy

Clarify

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

If a an active device is not happy with being connected to an active device, then it should not set satisfied and OAM should not come up on this link.

Edits:
Either add text to 55.2.1 or a separate sub-clause called "Responsibilities of the OAM Client"

C **55** *S* **55.3.2** *P* **091** *L* **49** # **17**

Martin, David — Nortel Networks

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

Typo.

SuggestedRemedy

Change "via the OAM.indication primitive" to "via the OAMPDU.indication primitive".

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.3.3** *P* **090** *L* **4** # **115**

Veerayah, Kumaran — Institute for Infocomm

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

typo: should be unrecoverable

SuggestedRemedy

Change to unrecoverable

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.3.4** *P* **090** *L* **18** # **404**

Braga, Aldobino — IOL - UNH

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

Table 55-1: Type 0 although reserved should still have a description.

SuggestedRemedy

Reserved for future use.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.3.4** *P* **090** *L* **20** # **83**

Nitosa, koji — NEC

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

Regulation of the window size of "Errored symbol period" in Table55-1 is unknown. This value should be clarified.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The size of the value fields in the TLVs will be sized to the smallest number of octets (1, 2, or 4) that can contain the maximum value as defined in the response to #163.

C **55** *S* **55.3.4** *P* **090** *L* **30** # **471**

Matt, Squire — Hatteras Networks

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

Too much information in table 55-1, seems like it creates a synchronization problem between this section and the later more detailed event section.

SuggestedRemedy

Can probably remove the type column from 55-1, and get rid of the sentences like "...can be found within the TLV...", and get rid of the RESERVED rows. The detailed descriptions will be found later anyway, and its less to keep in-sync.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.3.4** *P* **092** *L* **18** # **183**

Arnold, Brian — Cisco Systems

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

In November 2002, I thought we had agreed to include the use of thresholds in order for an OAM client to decide between sending an Errored-something TLV and a Severely-errored-something TLV. I see no reference to thresholds or severely errored anything in Draft 1.2 of Clause 55, so this is just an editorial comment asking what happened to the concept.

Recent reflector traffic on this topic has persuaded me that we'd be better off without the thresholding and severely-errored concepts in Clause 55, so even though I'm asking where they went, I currently prefer not adding them back in.

SuggestedRemedy

Absolutely nothing. Perhaps move on to more useful comments...?

Proposed Response *Response Status* **C**

REJECT.

C **55** *S* **55.3.4** *P* **092** *L* **24** # **182**

Arnold, Brian — Cisco Systems

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

This pertains to both Table 55-1 (55.3.4) and Table 55-8 (55.6.3.2):

Slight preference for combining EAM event types 2 and 3 (Errored frame seconds and Errored frame period) into one event type. While the current two types allow for more flexibility (time-centric versus frame-count-centric), unintended misuse can allow legal yet incorrect accumulation of counts, unless the relationship between Errored frame seconds (EFS) and Errored frame period (EFP) and more strict usage is defined in this clause.

For instance, consider an EN OAMPDU containing an EFSeconds TLV showing 6 errored frames and 10 seconds (all numbers out of thin air). The next EN OAMPDU contains an EFPeriod TLV showing 6 errored frames and 6,000 frames total in a measurement period. There is ambiguity here: is the EFPeriod TLV (the second) referencing the same period as the previous EFSeconds period (the first), or is it referencing a period immediately after the EFSeconds period, or is the EFPeriod TLV referencing an entirely different period not associated with the EFSeconds measurement period?

A EN OAMPDU receiver attempting to independently accumulate errors per unit time and errors per frame may accumulate incorrectly because of this ambiguity.

While it is possible to eliminate the ambiguity of usage of these two TLVs by a more complete definition of their use, it may be simpler to combine them into one TLV where the measurement period referenced is the same. This wouldn't remove all errored period usage ambiguities, but would make it easier to address those that remain.

SuggestedRemedy

Combine Event TLVs "Errored Frame Seconds" and "Errored Frame Period" into one TLV. Suggest calling it "Errored Frame Period".

Table 55-1 Description suggestion:

> A errored frame period is defined as a window where (number of errored frames) > 0. The number of frame errors and the size of the window are specified in the TLV(s) within the Event Notification OAMPDU, where the size of the window is measured in both seconds and frames.

Table 55-8 suggestions:

> Event: Errored Frame Period
> Type: 2
> Length: 14 octets
> Description: The value is coded as three unsigned 32-bit integers, where the first value is the number of seconds in the period, the second value is the number of frames in the period, and third is the number of errored frames in the period.

Proposed Response *Response Status* **C**

REJECT.

There are two approaches to simplicity. One approach is to combine events to make them as condensed and information full as possible. The second is to make them atomic as possible. The OAM STF feels that the latter case is more flexible.

C **55** *S* **55.3.4** *P* **092** *L* **24** # **18**

Martin, David Nortel Networks

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

Typo.

SuggestedRemedy

Change "An errored frame period is defined" to "An errored frame seconds is defined".

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.3.4** *P* **092** *L* **32** # **181**

Arnold, Brian Cisco Systems

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

The Loop Fault event was intended to represent a way to identify a specific pair within a set of aggregated pairs that a given event pertains to. While it is possible to communicate this identification within an EN OAMPDU, the ability would require a mapping of remote PMI to local PMI in order to be meaningful to the side receiving the EN OAMPDU, would require increasingly complex definitions of OAM events, probably including duplication of some events for PMI aggregation errors and non-aggregated errors, and generally starts to dive into media-specific issues. In order to keep OAM from becoming too complicated and to avoid having to define parts of OAM specifically for one or more versions of a copper PHY, the Loop Fault event should be eliminated. OAM would be better off not caring about whether a link is aggregated or not.

SuggestedRemedy

Remove the Loop Fault event from Table 55-1 (page 92) and from Table 55-8 (page 110).

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.4** *P* **090** *L* **45** # **490**

Matt, Squire Hatteras Networks

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

We have config variables that indicate if the remote guy can do loopback. We probably want to use them somehow.

SuggestedRemedy

Proposed Response *Response Status* **C**

REJECT.

As of D1.2, it is left to the OAM Client to inspect the information from the remote device and determine if, in fact, remote loopback could be requested.

C **55** *S* **55.4** *P* **090-092** *L* # **684**

Seyoun LIM SAMSUNG ELECTR

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

when Loopback is initiated or exited, two kinds of OAMPDU-Loopback Control OAMPDU and Information OAMPDU are used. Because of two kinds of OAMPDU to initiate or exit loopback mode, the procedure is quite complicated.

SuggestedRemedy

The remedy is to use only "Loopback control OAMPDU" for initation or exit of loopback mode. If Loopback control OAMPDU is only used, it's necessary to add new field to distinguish each message. the new field is supposed to be in loopback control OAMPDU and the length is 1 byte.
the value is below ;
0x01 : Initiate_Req : it's from local device to remote device with "loopback time != 0".
0x02 : Initiate_Ack : it's from remote to local when remote receives Initiate_Req with "loopback time != 0".
0x03 : Exit_Req1 : it's from local to remote to stop loopback before the loopback time is expired. this message carries "loopback time = 0"
0x04 : Exit_Req2 : it's from remote to local to indicate that remote just exit loopback
0x05 : Exit_Ack : it's from local to remote as acknowledement of Exit_Req2

Proposed Response *Response Status* **C**

REJECT.

See comment response #647.

C **55** *S* **55.4** *P* **092** *L* **48** # **649**

Thatcher, Jonathan — World Wide Packets

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

Change "During loopback, a device is permitted to send variable length frames..." to "During loopback, a remote device..."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change to:
"During loopback, the local device..."

The point being made within the 55.4 is that during loopback, there is not restriction on the size or type of frame being sent (other than being validly formed, etc). The local device sources these frames to the remote device.

C **55** *S* **55.4.3** *P* **091** *L* **53** # **84**

Nitosa, koji — NEC

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

The regulation in case acknowledgment is not received should be clarified. For example, the regulation of waiting time of acknowledgment etc.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

New text for 55.4 per daines_oam_3_0103.pdf resolves this comment.

C **55** *S* **55.4.4** *P* **092** *L* **10** # **479**

Matt, Squire — Hatteras Networks

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

Another reason for lost frames is asymmetric data rates (i.e. P2MP or VDSL).

SuggestedRemedy

Add another sentence: "When a bidirectional link has asymetric data rates, frame loss may occur because the transmit bandwidth is less then the received bandwidth."

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.4.4** *P* **094** *L* **13-16** # **1**

Shahram Davari — PMC-Sierra Inc.

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

It is not clear how a local device can read the value of the mentioned counter in a loopback test. Is it via Variable Request/Response and the difference between FramesReceivedOK and FramesTransmittedOK attributes?

SuggestedRemedy

Explain how this counter is read remotely.

Proposed Response *Response Status* **C**

REJECT.

The attribute 30.11.1.1.29, aLoopbackFramesLostDueToOAMError, is read via the Variable Request/Response OAMPDUs.

C **55** *S* **55.5.1** *P* **092** *L* **27** # **22**

Marris, Arthur — Cadence

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

Replace "must" with "shall". The IEEE style manual deprecates the use of the word "must" and says "shall" is used to indicate mandatory requirements

SuggestedRemedy

Replace "must" with "shall" on line 27 page 92 and also on line 32 on page 93.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.5.1** *P* **094** *L* **30** # **650**

Thatcher, Jonathan — World Wide Packets

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

It is not clear if the last sentence includes or excludes support for P2MP. Might it be the case that the language should say "outside the scope of this clause?"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Edits:
1) "MAC Client" -> "MAC Control client" (first line)
2) "cannot" -> "do not" (second line)
3) "an" -> "the"
4) "Delete "must"
5) Delete 3rd sentence.

C **55** *S* **55.5.1** *P* **094** *L* **38** # **2**

Shahram Davari PMC-Sierra Inc.

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

Seems that Mux primitive is never used in figure 55-2

SuggestedRemedy

Either:
a) delete Mux primitive in this section, or
b) change figure 55-2, so that the loopback from Parser to Multiplexer is marked as Mux:MADR instead of Parser:MADR.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Propose to accept (a).

C **55** *S* **55.5.2** *P* **092** *L* **44** # **683**

Seyoun LIM SAMSUNG ELECTR

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

The service interfaces between OAM sublayer and OAM client are quite complicated. The interfaces defined on Draft v1.2 are OAMPDU.request, OAMPDU.indication, OAM_STATE.request, OAM_DG.request, OAM_STATE.indication, OAM_LL.indication and OAM_EVENT.indication.

SuggestedRemedy

These interfaces should be modified as described below to reduce redundancy and to be simplified.
The proposal is
"OAMPDU.request -> OAMPDU.request
OAMPDU.indication -> OAMPDU.indication,
OAM_STATE.request+OAM_DG.request -> OAMCONTROL.request
OAM_STATE.indication+OAM_LL.indication+OAM_EVENT.indication -> OAMCONTROL.indication"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.5.2.1** *P* **095** *L* **4** # **3**

Shahram Davari PMC-Sierra Inc.

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

Seems that the OAM_LL.request is not correct. Sections 55.5.2 and 55.5.3.6 mention only OAM_LL.indication. So OAM_LL.request does not exist.

SuggestedRemedy

Change OAM_LL.request to OAM_LL.indication

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Per comment #683, propose service primitives be consolidated and this comment be incorporated.

C **55** *S* **55.5.3.1.2** *P* **093** *L* **27** # **472**

Matt, Squire Hatteras Networks

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

Flags field seems to be determined from other primitives or internal state. Do we need/want it here? What does it add? Ditto for version - can't we have that determined internally?

SuggestedRemedy

Remove the flags/version field from the interface.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Similar to comment #480.

In conflict with #542

- - -
Version field edits:
1) Remove version field from OAMPDU frame structure.
2) Add OAM_Version field in OAM_Information TLV, constant value 0x01.
3) satisfied parameter could be augmented
4) Remove version from OAM Client service interfaces

Flags field edits:

C **55** *S* **55.5.3.2.2** *P* **094** *L* **12** # **480**

Matt, Squire — Hatteras Networks

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

Version handling and flag handling should be internal to OAM.

SuggestedRemedy

Remove version/flags from interface.

Proposed Response *Response Status* **C**

REJECT.

See response to #472.

C **55** *S* **55.5.3.3.2** *P* **095** *L* **7** # **640**

Daines, Kevin — World Wide Packets

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

The parameter satisfied is incorrectly defined.

SuggestedRemedy

Change "The satisfied parameter is set by the OAM client as a result of comparing local configuration and remote configuration found in the received remote OAM_Information TLV.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.5.3.3.2** *P* **096** *L* **42-51** # **4**

Shahram Davari — PMC-Sierra Inc.

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

Which one of these parameters are local parameters? the parameters that don't start with "remote_"?

SuggestedRemedy

Explain that which parameters are local. Such as: parameters not starting with "remote_" are local parameters.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.5.3.5.2** *P* **096** *L* **5** # **681**

Seyoun LIM — SAMSUNG ELECTR

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

The primitive of OAM_DG.request hasn't any parameter.

OAM_DG.request(

)

SuggestedRemedy

A parameter should be defined and its description should be also added.

OAM_DG.request(
, , Local_dying_gasp
)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #683.
Parameter will be added so the consolidation will work.

C **55** *S* **55.5.3.5.3** *P* **098** *L* **10** # **5**

Shahram Davari — PMC-Sierra Inc.

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

It seems that "unrecoverable" is wrong. The Dying Gasp mentioned in page 42 says DG is a recoverable local failure.

SuggestedRemedy

Change "unrecoverable" to "recoverable"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.5.3.6** *P* **098** *L* **17-43** # **6**

Shahram Davari PMC-Sierra Inc.

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

It is not clear at all what the Lost Link Timer is, and what values can the Lost_link_timer_done can take (is it True/False or a number?)

SuggestedRemedy

Clarify what lost Link Timer is and what is it used for?

Proposed Response *Response Status* **C**

REJECT.

Per text in 55.5.5.1.4, all timers operate in a manner consistent with 14.2.3.2. Hence, a lost_link_timer_done variable exists for the lost_link_timer.

Clause 55 defines the lost_link_timer as a mechanism to detect the resetting or fault of one end of the OAM link.

C **55** *S* **55.5.5.1.1** *P* **097** *L* **50** # **482**

Matt, Squire Hatteras Networks

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

Shouldn't version be a constant?

SuggestedRemedy

Add version as a constant?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response #472.

C **55** *S* **55.5.5.1.2** *P* **098** *L* **19** # **483**

Matt, Squire Hatteras Networks

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

link_status being true/false seems confusing.

SuggestedRemedy

Change link_status to link_ok, or change true/false to ok/not_ok.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change values to link_status/OK and FAIL.

C **55** *S* **55.5.5.1.2** *P* **098** *L* **20** # **164**

Romascanu, Dan AVAYA Inc.

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

Link status definition seems broken. The indication is about the status, and not the establishment of the link

SuggestedRemedy

Change to "Indicated the status of the established link, as determined by the PHY.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change to "Indicates the status of the established link, as determined by the PHY.

See #483 for edits to name and values.

C **55** *S* **55.5.5.1.4** *P* **099** *L* **53** # **484**

Matt, Squire Hatteras Networks

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

We currently govern PDU transmission by max_rate_timer, which is controlled by the maximum number of PDUs in a second, thus we're limited to a very rigid one PDU every 1/N seconds. Our original goal was to make this more flexible, allowing the PDUs to be more uneven in case something 'bad' happens.

SuggestedRemedy

Can we define a variable that controls whether we can transmit (without crossing the max), rather than the strict interval timer?

Proposed Response *Response Status* **C**

REJECT.

Commentor surrendered.

C **55** *S* **55.5.5.4** *P* **099** *L* **30** # **7**

Shahram Davari PMC-Sierra Inc.

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

The last part of the sentence "Shall not be forwarded" is not accurate.

SuggestedRemedy

Change it to: OAM PDUs travel only a single link and shall not be forwarded any further.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The text "shall not be forwarded" steps slightly outside the scope of 802.3, but is nonetheless correct. OAMPDUs are not forwarded by 802.1 bridges or any MAC Clients for that matter. Instead, OAMPDUs are passed between OAM Client entities and OAM sublayer entities.

The text in question could be clarified a bit by adding the statement that OAMPDUs are passed between peer OAM client/sublayer entities if that satisfies the commentor.

Edit:
New bullet f)
OAMPDUs traverse a single link and are passed between OAM Client entities or OAM sublayer entities. OAMPDUs are not forwarded by IEEE 802.1 bridges.

C **55** *S* **55.5.6** *P* **102** *L* **37** # **477**

Matt, Squire Hatteras Networks

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

OAM:MADR should be OAM:MADI

SuggestedRemedy

Fix typo.

Proposed Response *Response Status* **C**

ACCEPT.

Same as comments #117, 86.

C **55** *S* **55.5.6.1** *P* **100** *L* **22** # **475**

Matt, Squire Hatteras Networks

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

The use of "oam_enable=FALSE" as a reason to enter the SEND_LOCAL_ONLY state confuses me. I think its supposed to capture the case where one disbles and enables OAM? Is that right? Maybe I'm reading it wrong, but I read that if you disable OAM, you start to send frames from the SEND_LOCAL_ONLY state.

SuggestedRemedy

Fix my confusion.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

oam_enable term will be removed from discovery and loopback (if applicable).

oam_enable description in parameter section will be augmented with additional text lifted from 30.11.1.1.2.

"shall" will be added to oam_enable parameter definition.

C **55** *S* **55.5.6.1** *P* **100** *L* **29** # **474**

Matt, Squire Hatteras Networks

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

Can replace "<=" with "=" in the diagram as we have only two states, STABLE and UNSTABLE.

SuggestedRemedy

Proposed Response *Response Status* **C**

REJECT.

Per the List of Special Symbols on page vii,

"=" has the meaning "equal to"

and

"<=" has the meaning "assignment operator"

I believe "<=" is correct even with a single-bit variable.

C **55** *S* **55.5.6.1** *P* **100** *L* **30** # **485**

Matt, Squire — Hatteras Networks

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

State machine doesn't cover passive mode.

SuggestedRemedy

Add additional states/transitions to cover passive mode.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Active mode is mentioned in the text while passive mode is missing from state diagram and noticeably absent from text.

The description of the Discovery state diagram will be augmented with text covering the Passive mode, references to the parameter ok_to_tx, remote_state_valid, etc.

C **55** *S* **55.5.6.1** *P* **100** *L* **43** # **104**

Takashi, Ezawa — Oki Electric Industry

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

Typo

SuggestedRemedy

Change "Active Mode (See 55.4.1)" to "Active Mode (See 55.2.1)".

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.5.6.1** *P* **100** *L* **54** # **105**

Takashi, Ezawa — Oki Electric Industry

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

Typo

SuggestedRemedy

Change "SEND_LOCAL_REMOTE_2 state" to "SEND_LOCAL_REMOTE_1 state".

Proposed Response *Response Status* **C**

ACCEPT.

Same as comment #116.

C **55** *S* **55.5.6.1** *P* **100** *L* **54** # **116**

Veerayah, Kumaran — Institute for Infocomm

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

typo: the state machine returns to the SEND_LOCAL_REMOTE_1 state, not SEND_LOCAL_REMOTE_2.

SuggestedRemedy

Change from SEND_LOCAL_REMOTE_2 to SEND_LOCAL_REMOTE_1

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.5.6.2** *P* **101** *L* **8** # **680**

Seyoun LIM — SAMSUNG ELECTR

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

"While the Discovery process is in not in the SEND_ANY state:" should be corrected.

SuggestedRemedy

It should be corrected like "While the Discovery process is not in the SEND_ANY state:"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.5.6.2** *P* **103** *L* **8** # **19**

Martin, David — Nortel Networks

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

Typo.

SuggestedRemedy

Change "process is in not in the" to "process is not in the".

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.5.9** *P* **101** *L* **52** # **486**

Matt, Squire — Hatteras Networks

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

We have no text in the loopback section.

SuggestedRemedy

Enhance the loopback section diagrams with descriptive text.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Dependent upon resolution to comment #647, see daines_oam_3_0103.pdf.

C **55** *S* **55.5.9** *P* **102** *L* **15** # **85**

Nitosa, koji NEC

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

Because "Unidirectional" is parameter about OAMPDU, "unidirectional" in Figure55-5 should not be used as DATA frame transmitting conditions. Reference : 55.5.3.3.2,Table55-5

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

REJECT.

Perhaps I didn't understand the comment, but !unidirectional is the term that is evaluated as a condition for entering TRANSMIT_DATA_FRAME.

The condition "unidirectional=FALSE OR link_status=TRUE" is there to ensure OAM only send non-OAMPDUs when either the link is up OR when unidirectional is FALSE. When the link is up, OAM transmits normally. When unidirectional=FALSE, OAM transmits normally (as if transparent) and lets the downstream layers handle it.

C **55** *S* **55.5.9** *P* **102** *L* **37** # **117**

Veerayah, Kumaran Institute for Infocomm

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

Figure 55-6: typo in Receive Data block.

SuggestedRemedy

Should be Generate OAM:MADI

Proposed Response *Response Status* **C**

ACCEPT.

Same as comments #477, 86.

C **55** *S* **55.5.9** *P* **102** *L* **37** # **86**

Nitosa, koji NEC

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

"Generate OAM:MADR" in Figure55-6 should be "Generate OAM:MADI"

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

Same as comments #477, 117.

C **55** *S* **55.5.9** *P* **102** *L* **9** # **476**

Matt, Squire Hatteras Networks

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

Mux:MADR doesn't appear anywhere in the earlier diagram showing the interfaces between or in the descriptions.

SuggestedRemedy

Add Mux:MADR to earlier diagrams or replace it in this diagram with the terms from p87.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Mux:MADR changed to Control:MADR per comment #27.

C **55** *S* **55.5.9** *P* **104** *L* **37** # **185**

Arnold, Brian Cisco Systems

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

Figure 55-6: Parser state diagram:
In order to be consistent with Figure 55-2 (OAM sublayer block diagram), the reference to OAM:MADR in the RECEIVE_DATA state should be changed to OAM:MADI.

SuggestedRemedy

In the RECEIVE_DATA state, replace OAM:MADR with OAM:MADI.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.5.9** *P* **104** *L* **9** # **184**

Arnold, Brian Cisco Systems

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

Figure 55-5: Multiplexer state diagram:
In order to be consistent with Figure 55-2 (OAM sublayer blck diagram), the arrow from WAIT_FOR_TRANSMIT to TRANSMIT_OAMPDU currently labeled Mux:MADR should be relabeled Control:MADR. Likewise, the reference to Mux:MADR next to the arrow from WAIT_FOR_TRANSMIT to CHECK_LINK_STATUS should be changed to Control:MADR.

SuggestedRemedy

1. Change label Mux:MADR to Control:MADR alongside the arrow from WAIT_FOR_TRANSMIT to TRANSMIT_OAMPDU.

2. Change usage of Mux:MADR to Control:MADR in usage alongside the arrow from WAIT_FOR_TRANSMIT to CHECK_LINK_STATUS should be changed to Control:MADR.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.6** *P* **104** *L* **20** # **489**

Matt, Squire — Hatteras Networks

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

Suggest we add a section for the OAM Code.

SuggestedRemedy

The value of the OAM code in the PDU is set by OAM Control. Information PDUs, Looopback Control PDUs, and Variable Request PDUs are processed by OAM Control,. Event notifications and variable responses are passed to the OAM client. OAM PDUs with unknown OAM codes are passed to the OAM client as well.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Propose add new
"55.5.6.2.3 Code field

The value of the OAM Code field is set by the OAM Control block for Information OAMPDUs it generates. The OAM Client sets the OAM Code field for all OAMPDUs it generates."

C **55** *S* **55.6** *P* **104** *L* **20** # **488**

Matt, Squire — Hatteras Networks

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

Suggest we add a section on the version field, maybe a new 55.6.2.1.

SuggestedRemedy

The version field is set to the value '1' on transmit by the OAM control block. OAM frames with values other than '1' are discarded on reception by OAM Control.

Proposed Response *Response Status* **C**

REJECT.

See response #472.

C **55** *S* **55.6.2.1** *P* **104** *L* **24** # **487**

Matt, Squire — Hatteras Networks

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

Its not clear who sets the flags field, and what you do with them.

SuggestedRemedy

Add: The flags field is set on transmit by the OAM Control block, and is received and parsed by the OAM Control block on reception. OAM Control ignores the value of the reserved bits in the flags field.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Edits:
1) Remove 55.5.3.7. OAM_EVENT.indication primitive
2) Widen 30.11.1.1.24 to 16-bits (the entire flags field).
3) Widen flags parameter

C **55** *S* **55.6.3.1** *P* **105** *L* **17** # **644**

Daines, Kevin — World Wide Packets

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

During one of the Discovery states, the remote OAM_Information TLV should not be sent.

SuggestedRemedy

Reword paragraph as follows
"The Information OAMPDU is used to send OAM state information to the remote device. The Information OAMPDU data field shall be as shown in Figure 55-10. during the SEND_LOCAL_ONLY Discovery state, the remote OAM_Information TLV shall not be sent.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Propose accept suggested remedy except capitalize "during".

C **55** *S* **55.6.3.1** *P* **105** *L* **20** # **87**

Nitosa, koji — NEC

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

"Figure55-10" is typo.

SuggestedRemedy

"Figure55-10"-->"Figure55-9"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.6.3.1** *P* **106** *L* **35** # **405**

Braga, Aldobino IOL - UNH

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

Table 55-5: Although bits 7:3 are reserved there should be a description.

SuggestedRemedy

Reserved field should be set to zero when sending an OAMPDU, and should be ignored on reception.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.6.3.1** *P* **107** *L* **22** # **478**

Matt, Squire Hatteras Networks

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

Why are these called extensions and not identifiers?

SuggestedRemedy

Rename local extensions to local identifiers.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

If I understand the comment, the commentor wishes to change the field "Local_Extension" to "Local_Identifier", correct? If so, that change will be made throughout in addition to changing "Remote_Extension" to "Remote_Identifier".

C **55** *S* **55.6.3.1** *P* **107** *L* **25-45** # **8**

Shahram Davari PMC-Sierra Inc.

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

The Information OAMPDU is divided to two parts. The local and the remote information. It is not clear why two parts is needed, and which entity should fill up each part. A local device could always send its local info to the remote device by filling up the first part of this OAMPDU. The remote device could also fill up the first part of this OAMPDU to report its information. So it is not clear what is the purpose of the second part of this PDU? Surely we don't want to report a devices status back to itself !

SuggestedRemedy

If not used, then delete the second part of the Information OAMPDU (Remote part of it).

Proposed Response *Response Status* **C**

REJECT.

The Information OAMPDU is used to convey state/configuration information to the remote device. During Discovery, a device sends its own information to the remote device. Once it learns the remote device's information, it sends a "this is what I understand/just learned" TLV back to the remote device. In this way, the OAM Client on both devices can determine "satisfied" and allow the OAM to be established on the link.

This is patterned after Clause 43, Link Aggregation.

C **55** *S* **55.6.3.2** *P* **108** *L* **3** # **5500**

OAM STF

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

To increase the likelihood that EN OAMPDUs are received, the OAM Client should be allowed to sent multiple EN OAMPDUs. This requires a sequence number in the data field of the EN OAMPDU.

SuggestedRemedy

Add sequence number to EN OAMPDU data field. Add text in 55.6.3.2 regarding multiple transmits and behavior of client in the new Responsibilities of OAM Client sub-clause.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.6.3.2** *P* **108** *L* **35** # **682**

Seyoun LIM SAMSUNG ELECTR

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

In Table 55-8, the TYPE of Event TLVs for Vendor Specific is only "255". It's not enough to delivery lots of vendor specific events efficiently.

SuggestedRemedy

"128 ~ 255" should be defined as Types for Vendor Specific.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.6.3.2** *P* **110** *L* *#* **146**

Fujita, Toshihiko Hitachi Communicati

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

The event name of Type=4 is written to be "Loop fault" in Table 55-1, and is written to be "PHY Aggregation Error" in Table 55-8.

SuggestedRemedy

It recommends unifying description of Table 55-8 with Table 55-1.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Deleted per #181.

C **55** *S* **55.6.3.2** *P* **110** *L* **16-26** *#* **9**

Shahram Davari PMC-Sierra Inc.

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

The Value column says these the first 3 fields are two unsigned 32-bit integers. That means they are 8 bytes long. Why is that the Length indicates 10 bytes?

SuggestedRemedy

Change the Length of the first 3 fields to "8" from "10".

Proposed Response *Response Status* **C**

REJECT.

The length of a TLV represents the total length of all of the fields (Type, Length and Value). Since the Type and Length are defined as one octet in length, the total length is correctly represented as 10 octets.

This is consistent with prior encodings of TLVs within 802.3.

C **55** *S* **55.6.3.2** *P* **110** *L* **20** *#* **186**

Arnold, Brian Cisco Systems

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

Table 55-8: Event TLVs:
The "seconds" field of an Errored Frame Seconds TLV is currently a 32-bit unsigned integer representing seconds. 2^32 -1 seconds between measurement periods seems a bit excessive, and forcing 802.3ah-compliant designs to adhere to this wide of a range may place an unnecessary burden on designers and implementations. It is suggested that the STF consider bounding the values of the seconds field, or otherwise limiting the values to saner, more reasonable ranges.

SuggestedRemedy

Several options:

1. Change the seconds field of the Errored Frame Seconds TLV to be only 16-bits wide.

2. Limit the seconds field to 0-3600 (one hour)

3. Change the seconds field to represent tenths of seconds, and limit it to 16-bits.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Since comment #548 is similar, propose we accept option #3.

C **55** *S* **55.6.3.2** *P* **110** *L* **21** # **606**

Barrass, Hugh — Cisco Systems

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

The definition of "Errored Frame Seconds" is redundant (given the definition of "Errored Frame Period"). It could be defined more usefully as "the number of seconds within the period during which one or more errors occurred."

This definition would allow a network engineer to distinguish between bursty and constant errors - which is not possible with the aggregate error reporting currently defined.

SuggestedRemedy

Change value column for "Errored frame seconds" to:

"The value is coded as two unsigned 32-bit integers, where the first value is the number of seconds in the period and the second value is the number of seconds during which one or more errors occurred in the period."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The Errored Frames Period event is considered different from the Errored Frame Seconds event in that the number of frames in a second can be variable, and knowing that 1/N frames were corrupt versus 1/10N frames were corrupt seemed useful. However, to address the commentors concern, we will define a new event defined as follows (to be added to the event table):
"
Errored Frames Seconds Summary. An errored second is defined as the number of seconds during which one or more errored frames occur. The size of the window (measured in seconds) and the number of errored seconds within that window are specified in the TLV(s) within the Event Notification OAMPDU.
"

C **55** *S* **55.6.3.2** *P* **110** *L* **29** # **20**

Martin, David — Nortel Networks

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

Need to pick a consistent name for the "PHY Aggregation Error" event.

SuggestedRemedy

Need to pick a consistent name for the "PHY Aggregation Error" event. Note that in Table 55-1 it is called a "Loop Fault" event. Don't have a strong opinion on which one to use.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #146.

C **55** *S* **55.6.3.2** *P* **110** *L* **4** # **609**

Barrass, Hugh — Cisco Systems

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

My reading of this paragraph is that the sender may determine the length of period defined for the OAMPDU. This should be stated explicitly and there should be upper and lower bounds on the periods allowed.

The lowest possible lower bound for period length is 1 second, I suggest that 1 minute may be more appropriate.

The upper bound could be any value but it would seem to be asymptotically approaching useless. I suggest that the value should be 10 minutes.

These bounds are necessary in order to allow designers of the receiving entity to scope the system requirements and to guarantee some minimal level for expected behavior.

SuggestedRemedy

Add the following to the end of the paragraph:

"The period defined for the OAMPDU is defined by the sending system. The period may be any number of seconds between 60 and 600 inclusive. The period must be the same length and have the same boundares for all TLVs."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to #163.

C **55** *S* **55.6.5.1** *P* **110** *L* **2** # **165**

Romascanu, Dan — AVAYA Inc.

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

The placement of tables 55-11 and 55-12 seems wrong

SuggestedRemedy

move table under 55.6.4.2

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This is an artifact of pagination. The table anchor is located immediately following 55.6.4.2.

C **55** *S* **55.6.5.1** *P* **110** *L* **36** # **166**

Romascanu, Dan AVAYA Inc.

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

I do not understand the error with the code 0x04. If the polling is too rare, then an overflow error happens, and we have error code 0x03 for this. Excessive polling cannot be a source of error.

SuggestedRemedy

remove error 0x04, and realling the codes of the following errors accordingly.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **55.7.3.1** *P* **097** *L* **6** # **473**

Matt, Squire Hatteras Networks

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

The semantics are confusing to me. These flags can be set/unset on any frame. Do we issue the indication every frame? Every frame in which they're set? When they change state? Etc. The "When generated" section says every frame - that seems a bit much when the info isn't really changing.

SuggestedRemedy

Change the semantics to say that we issue this indication whenever the flags field of the frame changes from the most recent frame (and of course upon the first frame as well).

And let's just pass the whole flags field too, makes it cleaner.

Proposed Response *Response Status* **C**

REJECT.

See response to #487. This section is deleted.

C **55** *S* **6.1** *P* **105** *L* **34** # **546**

Brown, Benjamin AMCC

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

bad bullet number - the style guide doesn't allow two "a)" in the same subclause

SuggestedRemedy

Replace "a)" with "e)"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Note: Should be page 103 *not* 105.

Also, comment #545 removes this bullet, right? In that case, comment #546 becomes superfluous. . .

C **55** *S* **6.3** *P* **107** *L* # **154**

Hirai, Hideyuki Sumitomo Electric

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

Table 55-3
It is not possible to request to send OAM state information of remote device.

SuggestedRemedy

In addition to AUTONOMICAL Information OAMPDU, Information Request/Response OAMPDU should be provided.

Proposed Response *Response Status* **C**

REJECT.

The commentor is correct that Information OAMPDUs are sent autonomously by the OAM sublayer.

The OAM STF does not see the need to provide Information Request and Information Response OAMPDUs.

C **55** *S* **6.3.1** *P* **107** *L* **20** # **547**

Brown, Benjamin AMCC

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

wrong reference

SuggestedRemedy

Replace "55-10" with "55-9"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **6.3.1** *P* **109** *L* *#* **155**

Hirai, Hideyuki — Sumitomo Electric

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

55.4.4 Loss of frames during OAM loopback
Table 55-6

Operators of CO and workers for installing ONUs to subscribers expect that if the loopback test completes without any loss of frames, the line and the equipment is ok, and if the loopback test completes with some error or loss of frames, something wrong in the line or the equipment. If the specification allows frame loss even though there is no error, it is hard to use the loopback function in the field.

In the meantime, remote device may not be able to return the loopback frames in full line rate. Therefore, there should be a method to notify the maximum rate which the device can return the loopback frames without any loss, to the remote device.

SuggestedRemedy

The maximum rate to loopback frames should be added to configuration parameters.

Proposed Response *Response Status* **C**

REJECT.

Sufficent attributes (frame tx/rx/drop counters) are provided to determine if link/equipment errors exist following loopback test.

The maximum rate at which a device is able to transmit loopback frames is out of scope.

C **55** *S* **6.3.2** *P* **110** *L* **21** *#* **548**

Brown, Benjamin — AMCC

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

This is a 32-bit number. Isn't the granularity of seconds a little broad?

SuggestedRemedy

Replace with some appropriate fraction of a second, perhaps milliseconds?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #186.

C **55** *S* **6.3.4** *P* **111** *L* *#* **156**

Hirai, Hideyuki — Sumitomo Electric

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

Although the total size of variable containers may exceed the maximum size of an OAMPDU, there is no specification for that case.

SuggestedRemedy

To be notified that the variable container size is more than maximum OAMPDU size, event code of the Variable Response should be provided apart from events of Table55-12.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

New Error code will be created for the condition mentioned in comment.

C **55** *S* **fig 55-5** *P* **102** *L* *#* **27**

Iori, Ueda — Matsushita Communi

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

Replace "Mux:MADR" with "Control:MADR".
Replace "!Mux:MADR" with "!Control:MADR".

Because "Control:MADR" is used in Fig 55-2.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **Figure 55-12** *P* **112** *L* **40** *#* **643**

Daines, Kevin — World Wide Packets

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

Extraneous line in figure

SuggestedRemedy

Remove extraneous line beginning at upper left corner.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **Figure 55-3** *P* **093** *L* **4** # **536**

Brown, Benjamin AMCC

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

Missing OAM Client

SuggestedRemedy

Split the MAC Client block and include OAM Client beside the MAC Client

In addition, in 55.4.2, bullet a) replace "and OAMPDUs sourced through the local Control block" with "from the OAM Client or the OAM sublayer"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **Figure 55-4** *P* **100** *L* **40** # **641**

Daines, Kevin World Wide Packets

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

The purpose of the SEND_LOCAL_ONLY state is to prevent passive to passive links from being established. This state is not returned to after losing link for less than lost_link_timer (5 secs). Instead, the state diagram returns to SEND_LOCAL_REMOTE_1 and proceeds from there.

SuggestedRemedy

Change "BEGIN + oam_enable=FALSE + lost_link_timer_done" (line 22)
to "BEGIN + oam_enable=FALSE + lost_link_timer_done + link_status=FALSE".

Remove link_status=TRUE from condition on line 31.

Remove link_status=FALSE from conditions on lines 35 and 39.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **Figure 55-4** *P* **100** *L* **41** # **642**

Daines, Kevin World Wide Packets

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

SEND_ANY state can be simplified by removing the assignment.

SuggestedRemedy

Remove "local_stable <= STABLE" since it is redundant with the prior state.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **Figure 55-5** *P* **102** *L* **22** # **645**

Daines, Kevin World Wide Packets

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

Per daines_oam_2_0103.pdf, modify Figure 55-5.

SuggestedRemedy

Change reference to local_lb variable to parser_action.

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **Figure 55-6** *P* **102** *L* **40** # **646**

Daines, Kevin World Wide Packets

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

Per daines_oam_2_0103.pdf, modify Figure 55-6

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **Figure 55-7** *P* **103** *L* **23** # **647**

Daines, Kevin World Wide Packets

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

Remove Figure 55-7, per daines_oam_2_0103.pdf and daines_oam_3_0103.pdf.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Modify 55.4, add timing considerations and PICS entries.

C **55** *S* **figures 55-10 to 55-13** *P* **111** *L* **40** # **167**

Romascanu, Dan AVAYA Inc.

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

These being examples, the exact number of octets can be specified for the Data field, instead of 41-1495

SuggestedRemedy

write 3 instead of 41-1495

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **Table 55-1** *P* **090** *L* **20** # **163**

Romascanu, Dan AVAYA Inc.

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

It is unclear how error events 1-3 are generated. From the Description one could read that an event 1-3 is generated for each errorred symbol or errored frame.

SuggestedRemedy

Correct as suggested by Don O'Connor in his mail from 12/21. For example for Errored symbol period events the definition should be:

"This event is generated when the number of symbol errors detected in a window of X received symbols exceeds a threshold of Y symbol errors. The window size and threshold are parameters in the Clause 30 MIB"

I am not advocating setting the period or symbol remotely. These should be configured remotely, but they will be represented in the MIB.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

All parameters for threshold crossing will be correlated to Clause 30 variables, and each variable will have specified default values, and upper/lower bounds. For the currently defined events, these values are:

Errored Symbol Period:
Value default: The number of symbols in one second for that interface type
Lower bound: The number of symbols in one second for that interface type
Upper bound: The number of symbols in one minute for that interface type
Threshold default: 0 symbol errors
Lower bound: 0 symbol errors
Upper bound: unspecified

Errored Frame Seconds:
Value default: 1 second
Lower bound: 1 second
Upper bound: 60 seconds
Threshold default: 0 frame errors
Lower bound: 0 frame errors
Upper bound: unspecified

Errored Frame Period:
Value default: The number of 64B frames that can be transmitted on the specific media in one second
Lower bound: same
Upper bound: The number of 64B frames that can be transmitted on the specific media in 60 seconds
Threshold default: 0 frame errors
Lower bound: 0 frame errors
Upper bound: unspecified

Errored frames seconds summary:
Value default: 60 seconds
Lower bound: 10 seconds
Upper bound: 600 seconds
Threshold default: 0 errors
Lower bound: 0 errors
Upper bound: unspecified

- - -

A default threshold value shall be x. In the case of a managed device, these may be modified by the appropriate attributes.

Bounds in 55 and 30.
Default in 55.

TLV definitions will cover bounds, default values.

- - -

C **55** *S* **Table 55-1** *P* **092** *L* **24** # **535**

Brown, Benjamin AMCC

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

wrong word

SuggestedRemedy

Replace "period" with "seconds"

Proposed Response *Response Status* **C**

ACCEPT.

C **55** *S* **Table 55-3** *P* **105** *L* **1** # **5501**

OAM STF

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

In order to provide for other entities to effectively use the vendor specific Code, changes should be made.

SuggestedRemedy

Change OAMPDU Code Table 55-3, to have the following entries:

05-FE - Reserved
FF - Vendor Specific

Add Vendor Specific OAMPDU section 55.6.3.x.

Define data field to include OUI immediately after Code field.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* *P* *L* # **56001**

Ariel Maislos

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

Discovery state-machine diagrams require cleanup in order to simplify diagram and enhance understanding of discovery process

SuggestedRemedy

Adopt maislos_cmts_4_0103.pdf diagrams prepared during meeting as basis for new discovery state-diagrams.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* *P* *L* # **58**

Kramer, Glen Teknovus

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

Typos

Page 128 line 6: "Trnsmit" should be "Transmit"
Page 134 line 4: "existance" should be "existence"
Page 147 line 49: "TIme" should be "Time"
Page 168 line 8: "instanciation" should be "instantiation"
Page 170 line 4: "instanciation" should be "instantiation"

SuggestedRemedy

Fix the typos as indicated above.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* *P* **121** *L* **12** # **434**

I2R, Onfig Team Institute For Infocom

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

REGISTER_REQUEST is not consistent with the rest of the document

SuggestedRemedy

Suggest replacing REGISTER_REQUEST with REGISTER_REQ

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* *P* **121** *L* **14** # **406**

I2R, Onfig Team Institute For Infocom

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

The sentence "discovery window - .. the exchange of DISCOVERY_GATE," is not complete

SuggestedRemedy

Suggest removing "the exchange of DISCOVERY_GATE,"

Proposed Response *Response Status* **C**

ACCEPT.
E not T

C **56** *S* **???** *P* **???** *L* **???** # **99100**

Tom Murphy Infineon

Comment Type **TR** *Comment Status* **D** *gate D1.1 #911*

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* **Z**

PROPOSED ACCEPT IN PRINCIPLE.
See attached diagram
See 514

C **56** *S* **00** *P* *L* # **437**

Kramer, Glen Teknovus

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

Currently, the draft 1.2 presents an inconsistent approach to the scheduling protocol. On the one hand, the scheduling protocol is left to be implementation-dependant (see D1.2 page 122, line 53: [Clause 56] does not deal with topics including bandwidth allocation strategies…). On the other hand, protocol messages have fixed format that do not allow implementation-dependant information to be passed between the OLT and ONUs.

SuggestedRemedy

Allow three types of fields in the GATE and REPORT messages:

1. Fixed field
2. Well-known optional field
3. Vendor-specific optional fields

This approach is explained in detail in the accompanying presentation kramer_cmts_2_0103.pdf

Proposed Response *Response Status* **Z**

PROPOSED REJECT.
Comment does not fix anything broken in standard.
Standard is consistent in its approach to scheduling:
Primitives provide for reporting from ONUs, and for gating by OLT.
It is left to the implementor to devise an allocation method. It is not left to the implementor to invent new protocol elements.
Fixed message formats are what allow for interoperability in a standard.

Suggested remedy is a completely different protocol.
Effect on stabilility of standard can not be understated for this major modification.
Absolutely no interoperability may be achieved when vendors are free to craft their proprietary protocols.

C **56** *S* **3.6.1.6** *P* **154** *L* **1** # **53**

Hirth, Ryan Terawave Communic

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

Figure 56-21 - The Force Registration flag of Table 56-5 is never used.

SuggestedRemedy

remove the force registration flag from table 56-5 if it is not necessary.

Proposed Response *Response Status* **C**

REJECT.
See 431 for exact solution

C **56** *S* **3.6.1.6** *P* **156** *L* **1** # **52**

Hirth, Ryan Terawave Communic

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

An ONU should be Deregistered if a Report is not received after an interval of time. (i.e. the ONU was removed from the network).

SuggestedRemedy

State REGISTERED_WAIT should have a time out if no Report messages are received.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
ONU generates reports and does not receive them.
Proposed fix:
OLT to deregister ONU after no Reports received.
ONU to deregister after no Gates received.

Arming mechanism to be added in Figure 56-17 for indication error state.
For OLT:
Input from indication to be processed in new diagram, that will issue indication to INDICATE DEREGISTER state.

For ONU
Input from indication to be processed in new diagram, that will issue indication to DEREGISTER state.

C **56** *S* **53.3.6.1.6** *P* **156** *L* **10** # **430**

I2R, Onfig Team Institute For Infocom

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

There is no explicit description about the process of deregister. Neither can we see clearly how the deregister process is done between ONU and OLT from figure 56-23.

SuggestedRemedy

(1) Add explicit text description like following for the deregister process into line 4 of page 146:
For the registered ONU, it can also send REGISTER_REQ (set the corresponding bit in it) message to OLT for deregistering itself. When the OLT receive such REGISTER_REQ it will deregister the associated ONU and send a REGISTER (set the corresponding “flag” field in REGISTER MPCPDU) message to inform this ONU that it has been deregistered. Upon receipt of this REGISTER message, the “registered” variable for this ONU is set to false. So the whole process of deregister is completed. This ONU will try to reregister at the earliest opportunity, once allowed.

(2) Change figure 56-23 in page 156 correspondingly.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
Editor will add text to describe deregistration process to 56.3.6 header.

C **56** *S* **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

C **56** *S* **56** *P* **123** *L* **1** *#* **520**

Maislos, Ariel — Passave

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

Counters missing throughout text

SuggestedRemedy

Add counters and variables, updating text and diagrams for reference by Clause-30

Proposed Response *Response Status* **C**

ACCEPT.
Editor will draft list of Clause 30 management variables for inclusion prior to ballot.
Interface variables would be included in this list.
See 324

C **56** *S* **56.1** *P* **122** *L* **20** *#* **467**

Pesavento, Gerry — Teknovus

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

"signal" should be plural

SuggestedRemedy

change "signal" to "signals"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1** *P* **122** *L* **26** *#* **438**

Pesavento, Gerry — Teknovus

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

ONU does not transmit necessarily when grant arrives

SuggestedRemedy

Change sentance to "When the grant arrives, the ONU should then transmit frames at wire speed during its assigned time slot."

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1** *P* **122** *L* **35** *#* **440**

Pesavento, Gerry — Teknovus

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

Figure 56.1 needs label for drop fiber, and indication of more than 3 ONUs

SuggestedRemedy

Add "Drop" in 56-1 Diagram on line from Splitter to ONU, and change "ONU 3" to "ONU N".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Also add dotted line from ONU 2 to ONU N

C **56** *S* **56.1** *P* **122** *L* **49** *#* **439**

Pesavento, Gerry — Teknovus

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

clause deals with allocation of "upstream" transmission resources

SuggestedRemedy

Change line to "...clause include allocation of upstream transmission resources..."

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1** *P* **123** *L* **14** *#* **441**

Pesavento, Gerry — Teknovus

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

capitalize "control"

SuggestedRemedy

Change Multi-Point MAC control to Multi-Point MAC Control.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1** *P* **123** *L* **8** # **54**

Kramer, Glen — Teknovus

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

Use of abreviation LLID before it is explained.

SuggestedRemedy

Add a reference to a corresponding subclause in clause 57.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Definition is to be added to Clause 1.4
Editor will add Cross-Ref to 57.1.3.1.2

C **56** *S* **56.1.1** *P* **123** *L* **30** # **442**

Pesavento, Gerry — Teknovus

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

g) Negotiation of PMD parameters allowing flexibility in design of PMD

--> this is still being debated in PMD group concerning ONU parameters.

SuggestedRemedy

Add Editor Note under (g) to say:
"Necessity to negotiate ONU PMD parameters is under study"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Based on motions adopted in meeting, advertisement of PMD parameters for laser is not required.
Fields used to advertise these parameters should be removed from messages as well.

Modify objective g) to read:
g) Negotiation of PMD receiver parameters allowing flexibility in design of PMD

C **56** *S* **56.1.1** *P* **123** *L* **37** # **443**

Pesavento, Gerry — Teknovus

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

l) Continuous ranging for thermal compensation.
This is the main variable, but other variables may cause timing variance

SuggestedRemedy

Change to:
l) Continuous ranging for compensating round trip time variation
or something like that...

Proposed Response *Response Status* **C**

ACCEPT.
See 521

C **56** *S* **56.1.2** *P* **123** *L* **38** # **407**

I2R, Onfig Team — Institute For Infocom

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

The sub clause heading Position of Optical Multipoint within the IEEE 802.3ah hierarchy should be changed to reflect the change to Multi-Point MAC Control in the passage

SuggestedRemedy

Suggest changing Optical Multi-Point to Multi-Point MAC Control

Proposed Response *Response Status* **C**

ACCEPT.
E not T

C **56** *S* **56.1.2** *P* **123** *L* **39** # **55**

Kramer, Glen — Teknovus

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

Subclause title should read "Position of Multi-Point MAC Control within the IEEE 802.3 hierarchy"

SuggestedRemedy

Change the title

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.2** *P* **123** *L* **41** # **445**

Pesavento, Gerry — Teknovus

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

"Architectural" - spelled wrong

SuggestedRemedy

Change to "architectural"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.2** *P* **123** *L* **42** # **444**

Pesavento, Gerry — Teknovus

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

"multiplexing control sublayer" should be "Multi-Point MAC Control sublayer"

SuggestedRemedy

Change as suggested in Comment

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.2** *P* **123** *L* **46** # **446**

Pesavento, Gerry Teknovus

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

Optical Multi-Point (OMP) title was changed

SuggestedRemedy

Change to Multi-Point MAC Control

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.2** *P* **123** *L* **53** # **447**

Pesavento, Gerry Teknovus

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

Change MPCP to "Multi-Point Control Protocol (MPCP)", and change "OMP" to either "EPON" or "P2MP"

SuggestedRemedy

Change MPCP to "Multi-Point Control Protocol (MPCP)", and change "OMP" to either "EPON" or "P2MP"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.2** *P* **124** *L* **20** # **449**

Pesavento, Gerry Teknovus

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

Change PMD to P2MP-PMD as per the Figure PMD layer.

SuggestedRemedy

Change PMD line in Figure 56-2 to:

P2MP-PMD=POINT-TO-MULTI-POINT PHYSICAL MEDIUM DEPENDENT

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.2** *P* **124** *L* **24** # **408**

I2R, Onfig Team Institute For Infocom

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

Figure 56-2
The figure title "Relationship of OMP …" should be changed to reflect the change to Multi-Point MAC Control in the passage

SuggestedRemedy

Suggest changing "OMP" to "Multi-Point MAC Control"

Proposed Response *Response Status* **C**

ACCEPT.
E not T

C **56** *S* **56.1.2** *P* **124** *L* **24** # **450**

Pesavento, Gerry Teknovus

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

Figure 56-2 title should not say "OMP", nor the line 26 below.

SuggestedRemedy

Change "OMP" to "Multi-Point MAC Control Sublayer" in Figure 56-2 title

Also remove the text "OMP functional block" in the paragraph below (page 124 line 26).

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.2** *P* **124** *L* **52** # **451**

Pesavento, Gerry Teknovus

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

Change sentance "... a single copy of a frame and this frame is being received by all ONUs" to

SuggestedRemedy

"... a single copy of a frame that is received by all ONUs"

Also, there should be a period after the word "once" in this paragraph.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.2** *P* **124** *L* **53** # **112**

Karasawa, Satoru — Oki Electric Industry

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

As a MAC client can have its own MAC address, the OLT can have N MAC addresses when N ONUs connect to the OLT. However, the OLT has only one physical port. Therefore, it is natural that the OLT has a MAC address for the PON port.

SuggestedRemedy

Add the following sentence into the subclause 56.1.2.
"Although the OLT has N MAC clients, the MAC address of the OLT can be one."

Proposed Response *Response Status* **C**

REJECT.
As each PON port has a MAC associated with it, the MAC has an address. The address assignment strategy is an implementation decisions.

C **56** *S* **56.1.2** *P* **124** *L* **53** # **409**

I2R, Onfig Team — Institute For Infocom

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

The number of MAC instances and clients supported for P2PE is N+1. However, for shared LAN emulation it is 2N+1

SuggestedRemedy

Add another passage or sentence to indicate this.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
Add paragraph in compatibility considerations describing use of shared emulation

---

C **56** *S* **56.1.2** *P* **124** *L* **8** # **448**

Pesavento, Gerry — Teknovus

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

Change "MAC CONTROL (OPTIONAL)" to "MULTI-POINT MAC CONTROL" in Figure 56-2

SuggestedRemedy

Change "MAC CONTROL (OPTIONAL)" to "MULTI-POINT MAC CONTROL" in Figure 56-2

Proposed Response *Response Status* **C**

REJECT.
T not E
See 308

C **56** *S* **56.1.2** *P* **125** *L* **2** # **452**

Pesavento, Gerry — Teknovus

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

Take out capitalization of Emulation

SuggestedRemedy

Change to "emulation" with lower case

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.2** *P* **125** *L* **42** # **307**

Khansari, Masoud — Centillium Communic

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

The MAC supported in EPON is only full duplex. Any reference to CSMA/CD should be removed.
Also at page 126 line 28

SuggestedRemedy

Remove any reference to CSMA/CD when refering to EPON MAC

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.3** *P* **125** *L* # **433**

I2R, Onfig Team — Institute For Infocom

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

From Fig 56-4, we can't see clearly the relationship between Mac Control Client and the OMP function block.

For example, as is known the Discovery Processing block needs to indicate the Mac Control Client the results(Ma_Control.indication(denied/accepted)) or states(Ma_Control.indication(in_progress)) of the discovery process.

On the other side the Mac Control Client generates Ma_Control.request() to control the transmit of the OMP function block.

And the OMP.request() and OMP.indication() can only be used within the OMP function block.

SuggestedRemedy

See the file: raymond_cmts_2_0103.pdf.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
See kramer_cmts_3_0103.pdf for exact solution.

C **56** *S* **56.1.3** *P* **125** *L* **24** # **453**

Pesavento, Gerry Teknovus

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

It is not clear what this Functional Block is titled. A label needs to be added in the Figure 56-4 line, and also made more clear in the block itself.

SuggestedRemedy

Change Figure 56-4 Functional Block Diagram to "Figure 56-4 - Multi-Point MAC Control Instance Functional Block Diagram"

Change Figure 56-4 "Multiplexing MAC Control instance N" to "Multi-Point MAC Control instance n" and put this label not on the bottom right, but add room at the top of the block for this label.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change title of figure 56-4 to read: "Multi-Point MAC Control Functional Block Diagram".
See kramer_cmts_3_0103.pdf for actual diagram.

C **56** *S* **56.1.3** *P* **125** *L* **6** # **454**

Pesavento, Gerry Teknovus

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

Change "Optical Multi-Point (OMP)" to "Multi-Point MAC Control" - the functional block diagram has more than the OMP block.

SuggestedRemedy

change text to "Multi-Point MAC Control"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.3** *P* **126** *L* **44** # **505**

Maislos, Ariel Passave

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

Study of interaction between PAUSE and MPCP has reached maturity level and is probably concluded.

SuggestedRemedy

Add text as in file maislos_cmts_1_0103.pdf

Proposed Response *Response Status* **C**

ACCEPT.
Editor will add in new compatibility consideration section the following:

Even though MPCP is compatible with flow control, flow control may not be efficient in the case of large propagation delay.

C **56** *S* **56.1.3** *P* **127** *L* **7** # **500**

Jaeyeon Song Samsung

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

It is not clear the connection between MAC Control Client and Multi-point MAC Control instance n.

SuggestedRemedy

Clarify the connection between MAC Control Client and Multi-point MAC Control instance n.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See attached diagram for modified interaction with MAC Control Client
See also 433

C **56** *S* **56.1.4** *P* **126** *L* **4** # **456**

Pesavento, Gerry Teknovus

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

Change "Optical Multi-Point functional block" to "Multi-Point MAC Control functional block"

SuggestedRemedy

Change "Optical Multi-Point functional block" to "Multi-Point MAC Control functional block"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.1.4** *P* **126** *L* **6** # **457**

Pesavento, Gerry Teknovus

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

Change (a) "....for synchronizing the multiple MAC clients...." to "for synchronizing Multi-Point MAC Control Instances..."

SuggestedRemedy

Change (a) "....for synchronizing the multiple MAC clients...." to "for synchronizing Multi-Point MAC Control Instances..."

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2** *P* **126** *L* **3** # **410**

I2R, Onfig Team — Institute For Infocom

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

The phrase "Optical MAC Control" should be changed to Multi-Point MAC Control to reflect the change to Multi-Point MAC Control in the figure 56-4

SuggestedRemedy

Suggest changing "Optical Multipoint" to "Multi-Point MAC Control"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
E not T
use Multi-Point MAC Control

C **56** *S* **56.2** *P* **126** *L* **9** # **455**

Pesavento, Gerry — Teknovus

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

Change (b) "Multi-Point" to "Multi-Point MAC Control Instance"

SuggestedRemedy

Change (b) "Multi-Point" to "Multi-Point MAC Control Instance"

Proposed Response *Response Status* **C**

ACCEPT.
See 501

C **56** *S* **56.2** *P* **128** *L* **15** # **311**

Khansari, Masoud — Centillium Communic

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

Description of function (d) Control Mutiplexer needs to be rewritten

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor is open to suggestions, but please suggest what changes to make.

C **56** *S* **56.2** *P* **128** *L* **9** # **501**

Jaeyeon Song — Samsung

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

The block name b) is wrong.

SuggestedRemedy

b) Multi-Point --> Multi-point MAC Control Instance n

Proposed Response *Response Status* **C**

ACCEPT.
See 455

C **56** *S* **56.2** *P* **128** *L* **9** # **310**

Khansari, Masoud — Centillium Communic

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

In function (c) is not clear what Multi-Point is refered to

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.1** *P* **126** *L* **25** # **56**

Kramer, Glen — Teknovus

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

"As depicted in Figure 56–4, the layered system may instantiate multiple MAC entities, using a single Multi-Point MAC Control."

This is a very confusing statement. Perhaps, the intention was to say that "Multi-Point MAC Control sublayer may instantiate multiple Multi-Point Control instanses in order to interface multiple MAC and MAC Control clients above with multiple MACs below."

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add text as suggested in the comment body.

C **56** *S* **56.2.1** *P* **126** *L* **53** # **57**

Kramer, Glen Teknovus

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

"At the ONU, a single MAC instance is used to communicate with each MAC instance at the OLT."

single MAC at ONU communicates with a single MAC at the OLT.

SuggestedRemedy

Remove "each"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.1** *P* **126** *L* **54** # **459**

Pesavento, Gerry Teknovus

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

Parer should be Parser

SuggestedRemedy

Parer should be Parser

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.1** *P* **127** *L* **27** # **458**

Pesavento, Gerry Teknovus

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

Conversely is spelled wrong (line 28)
transmission is spelled wrong (line 38)

SuggestedRemedy

Change to Conversely (line 28)
Change to transmission (line 38)

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.1** *P* **127** *L* **36** # **461**

Pesavento, Gerry Teknovus

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

Change "..instance Multiplexer.." to "...Multi-Point MAC Control Instance..."

SuggestedRemedy

Change "..instance Multiplexer.." to "...Multi-Point MAC Control Instance..."

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.1** *P* **127** *L* **49** # **460**

Pesavento, Gerry Teknovus

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

Change Multi-Point MAC control to Multi-Point MAC Control -- several instances of this throughout document, make changes

SuggestedRemedy

Change Multi-Point MAC control to Multi-Point MAC Control -- several instances of this throughout document, make changes

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.1** *P* **128** *L* **14** # **463**

Pesavento, Gerry Teknovus

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

Change "Parser/Multiplexer" to "Multi-Point MAC Control"
Correct spelling of independent on same line

SuggestedRemedy

Change "Parser/Multiplexer" to "Multi-Point MAC Control"
Correct spelling of independent on same line

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.1** *P* **128** *L* **19** # **464**

Pesavento, Gerry Teknovus

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

"It" is unspecified - should it be "Multi-Point MAC Control Instance"
Also in same paragraph line 20 instances is spelled wrong
Also in same paragrap change "Multi-Point control" to "Multi-Point MAC Control"

SuggestedRemedy

"It" is unspecified - should it be "Multi-Point MAC Control Instance"
Also in same paragraph line 20 instances is spelled wrong
Also in same paragrap change "Multi-Point control" to "Multi-Point MAC Control"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.1** *P* **128** *L* **25** # **502**

Jaeyeon Song Samsung

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

The index of Figure 56-4 is not correct. It is the Figure 56-5 below the sentence.

SuggestedRemedy

"As depicted in Figure 56-4..." -->"As depicted in Figure 56-5..."

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.1** *P* **128** *L* **54** # **312**

Khansari, Masoud Centillium Communic

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

"Parer" should read "Parser"

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.1** *P* **128** *L* **6** # **462**

Pesavento, Gerry Teknovus

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

Trnsmit - change to Transmit

SuggestedRemedy

Trnsmit - change to Transmit

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.1** *P* **129** *L* **39** # **388**

Tae-Whan Yoo ETRI

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

The MAC multiplxer is not defined.

SuggestedRemedy

It would be clear if "MAC multiplexer" is substituted with "Control Multiplxer".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
"Multi-Point MAC Control instance"

C **56** *S* **56.2.1** *P* **130** *L* **16** # **390**

Tae-Whan Yoo ETRI

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

The description from line 15 to line 17 is not clear.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "..while the receive .."
to "..while the receive and transmit operation for the opcode dependent MAC Control function remains unchanged."

C **56** *S* **56.2.1** *P* **130** *L* **6** # **389**

Tae-Whan Yoo ETRI

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

Typo error

SuggestedRemedy

Trnsmit -> Transmit

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.2** *P* **128** *L* **33** # **411**

I2R, Onfig Team — Institute For Infocom

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

"The purpose of the Multiplexing Control is to provide arbitration of frames from different MAC Clients at the RS layer and below when multiple clients share a single PHY." is a bit difficult to understand.

SuggestedRemedy

Suggest changing to "The purpose of the Multiplexing Control is to allow only one of the multiple clients to transmit to the RS layer at any one time."

Proposed Response *Response Status* **C**

ACCEPT.
E not T

C **56** *S* **56.2.2** *P* **128** *L* **49** # **412**

I2R, Onfig Team — Institute For Infocom

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

Fig 56-7
The caption "Multi-Point Control Service Interfaces" does not reflect the figure shown.

SuggestedRemedy

The caption "Multi-Point Control Service Interfaces" should be changed to "Multiplexing Control Service Interfaces"

Proposed Response *Response Status* **C**

ACCEPT.
E not T

C **56** *S* **56.2.2** *P* **128** *L* **53** # **465**

Pesavento, Gerry — Teknovus

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

Change "OMP_n" to "Multi-Point MAC Control Instance n"

SuggestedRemedy

Change "OMP_n" to "Multi-Point MAC Control Instance n"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.2** *P* **129** *L* **11** # **466**

Pesavento, Gerry — Teknovus

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

This Figure 56-8 is nearly identical to Figure 56-5; I recommend combining them to one Figure

SuggestedRemedy

This Figure 56-8 is nearly identical to Figure 56-5; I recommend combining them to one Figure

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Further combine these diagrams into Figure 56-4.
With new Figure 56-4 approved, current Figures 56-5, 56-6 and 56-8 should be removed.

C **56** *S* **56.2.2** *P* **129** *L* **3** # **413**

I2R, Onfig Team — Institute For Infocom

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

Fig 56-8
"MAC Clients" does not reflect both the MAC Client and MAC Control Client.

SuggestedRemedy

Suggest changing it to "Clients" or "MAC and MAC Control Clients"

Proposed Response *Response Status* **C**

REJECT.
Figure 56-8 is to be removed as per comment 466.

C **56** *S* **56.2.2** *P* **131** *L* **29** # **391**

Tae-Whan Yoo — ETRI

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

Typo error

SuggestedRemedy

"Multiplexig" -> "Multiplexing"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.2.1.2** *P* **129** *L* **52** # **59**

Kramer, Glen — Teknovus

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

TransmitPending is not boolean and cannot be set to "on". It is an eanum with three values.

SuggestedRemedy

Change the sentence to "Setting them to DATA or CONTROL indicates that the selected instance is ready to transmit data of MAC Control frame respectively."

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.2.1.2** *P* **130** *L* **17** # **414**

I2R, Onfig Team — Institute For Infocom

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

The definition "transmission_in_progress" is missing

SuggestedRemedy

Suggest copying the definition from pg 134, clause 56.2.3.1.2

Proposed Response *Response Status* **C**

ACCEPT.
See 315

C **56** *S* **56.2.2.1.2** *P* **130** *L* **9** # **60**

Kramer, Glen — Teknovus

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

Suggest using consistent naming:

either multipoint_transmit_pending and transmit_pending[j]
or MultipointTransmitPending and TransmitPending[j]

SuggestedRemedy

Change variable names as indicated in the comment

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.2.1.2** *P* **131** *L* **50** # **314**

Khansari, Masoud — Centillium Communic

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

Variable transmitPending[j] is defined but not used anywhere in the state diagram (Figure 56-9)

SuggestedRemedy

Remove this variable

Proposed Response *Response Status* **C**

REJECT.
TransmitPending is used to calculate multupoint_transmit_pending and is not redundant

C **56** *S* **56.2.2.1.3** *P* **130** *L* **24** # **415**

I2R, Onfig Team — Institute For Infocom

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

It seems that there are 2 definition for the select function's return value

SuggestedRemedy

Suggest deleting "The function returns false when the transmitPending array is empty. Thus it allows the selection of an active element from the transmitPending list."

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.3** *P* **132** *L* **13** # **416**

I2R, Onfig Team — Institute For Infocom

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

Fig 56-10
The direction of the arrow is opposite

SuggestedRemedy

Invert it.

Proposed Response *Response Status* **C**

REJECT.
ReceiveFrame is described correctly, one of the paradoxes of Ethernet.
See Figure 2-2 in sub-clause 2.2.2

C **56** *S* **56.2.3** *P* **132** *L* **3** # **417**

I2R, Onfig Team — Institute For Infocom

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

Fig 56-10
MAC Control function activation is not described in 56.2.3

SuggestedRemedy

Please describe it or split the signal into "MAC_CONTROL.indication", "OMP.indication" and "PAUSE.indication"

Proposed Response *Response Status* **C**

ACCEPT.
Text describing function activtion will be addd by editor based on 31.5 as notes to Figure 56-13:
NOTE: The opcode-specifc operation is launched as a parallel process by the MAC Control sublayer, and not as a synchronous function. Progress of the generic MAC Control Receive state machine (as shown in this figure) is not implicitly impeded by the launching of the opcode specific function.

State text to read: Perform opcode-specific operation, per annex.
See note.

C **56** *S* **56.2.3** *P* **132** *L* **32** # **418**

I2R, Onfig Team — Institute For Infocom

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

"transmission_in_progress[n]" seems to be missing from the diagram

SuggestedRemedy

Add this signal with an outgoing arrow below the TransmitPending[n] signal

Proposed Response *Response Status* **C**

ACCEPT.
See 419

C **56** *S* **56.2.3** *P* **133** *L* **11** # **419**

I2R, Onfig Team — Institute For Infocom

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

Fig 56-12
"transmission_in_progress" seems to be missing from the diagram

SuggestedRemedy

Add this signal with an outgoing arrow on the right of the Control Multiplexer block

Proposed Response *Response Status* **C**

REJECT.
transmission_in_progress variable is not used in the ONU.
See 418

C **56** *S* **56.2.3** *P* **133** *L* **43** # **393**

Tae-Whan Yoo — ETRI

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

Typo error

SuggestedRemedy

perfomed -> performed

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.3** *P* **134** *L* **22** # **503**

Jaeyeon Song — Samsung

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

In Figure 56-11 and Figure 56-12, Control Multiplexer has three request primitive. But, In case of OMP.request, it is included in the MA_CONTROL.request according to the state diagram.

SuggestedRemedy

Remove the OMP.request primitive from those figures.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.3.1.2** *P* **133** *L* **51** # **420**

I2R, Onfig Team — Institute For Infocom

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

"TXAllow is always true for the OLT, and changes its value according to the state of the Gate Processing functional block." is a bit confusing.

SuggestedRemedy

Suggest changing it to "TXAllow is always true for the OLT but changes its value according to the state of the Gate Processing functional block for the ONUs."

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.3.1.2** *P* **135** *L* **31** # **319**

Khansari, Masoud — Centillium Communic

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

Some of the Variables are only defined in OLT state diagrams and it does not make sense to have default values of them in the case of ONU. For example TXAllow is only used in ONU Multiplexer state diagram (Figure 56-15) and it on uncessary of it to have default value for OLT.

SuggestedRemedy

All the variables defined in this section should be reviewed to make sure that the default values are defined when they are necessary

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.3.1.2** *P* **135** *L* **39** # **318**

Khansari, Masoud — Centillium Communic

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

LaserControl is defined but not used in any of the corresponding state diagrams (Figures 56-14, 56-15, 56-16).
This is also true for variable "Master" defined in page 136

SuggestedRemedy

remove the definitions of LaserControl and master variables

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.3.1.3** *P* **136** *L* **46** # **320**

Khansari, Masoud — Centillium Communic

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

Function TransmitFrame() is used in Multiplexer state diagrams of OLT and ONU (Figures 56-14 and 56-15) but not defined.

SuggestedRemedy

Define TransmitFrame() function in subclause 56.2.3.1.3

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.3.1.5** *P* **135** *L* **9** # **421**

I2R, Onfig Team — Institute For Infocom

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

The definition for MA_CONTROL.request and MA_DATA.request is not copied over from the previous draft.

SuggestedRemedy

Suggest adding them back "MA_CONTROL.request(DA, SA, m_sdu) The service primitive used by a client to request a MAC Control sublayer function with the specified request_operands."and " MA_DATA.request(DA, SA, m_sdu) The service primitive used by a client to a MAC function with the specified request_operands."

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.3.1.5** *P* **137** *L* **2** # **321**

Khansari, Masoud — Centillium Communic

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

The following messages are not defined:
ReceiveFrame
MA_CONTROL_request
MA_DATA_request

but used in the following state diagrams

SuggestedRemedy

Clearly define the above messages.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.3.1.6** *P* **137** *L* **8** # **88**

Nitosa, koji — NEC

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

"transmitPending=false" in Figure56-14 sould be "transmitPending=NONE"

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.2.3.1.6** *P* **138** *L* **18** # **422**

I2R, Onfig Team — Institute For Infocom

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

Fig 56-15
There is no priority between CONTROL and DATA frames.

SuggestedRemedy

Suggest copying the transmitPending = DATA and transmitPending = CONTROL from fig 56-14 to this figure

Proposed Response *Response Status* **C**

REJECT.
Multiplexing is not performed in ONU upstream as there is a single LLID instance, therefore it is not required to add signals to interface to multiplexing control in the ONU.

C **56** *S* **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

C **56** *S* **56.3** *P* **140** *L* **47** # **322**

Khansari, Masoud — Centillium Communic

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

"State Variables" is defined as one of the functions of OMP but is not depicted in Figure 56-4.

SuggestedRemedy

Add "State Variables" to Figure 56-4

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.1** *P* **139** *L* **23** # **23**

Marris, Arthur — Cadence

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

Replace the word "must" with "shall".

SuggestedRemedy

Replace the word "must" with "shall". also on line 25, and on page 145 line 37

Proposed Response *Response Status* **C**

ACCEPT.
Editor shall fix other occurances in the text as well.

C **56** *S* **56.3.1** *P* **140** *L* **25** # **506**

Maislos, Ariel — Passave

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

therough

SuggestedRemedy

through

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.1** *P* **141** *L* **14** # **395**

Tae-Whan Yoo — ETRI

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

Once the P2PE is done, the link chracteristic becomes symmetric both in the downstream and in the upstream. It would, therefore, be better to add the gating function in the downstream, too.

SuggestedRemedy

The sentence for item e) is rewritten as follows,

" e) Such gating of transmission is orchestrated through the Gate Processing function in the upstream direction and through Multiplexing Control function in the downstream direction."

Proposed Response *Response Status* **C**

REJECT.
At the hierarchy were this is defined, there is no problem in the downstream direction as it was previously solved.

C **56** *S* **56.3.1** *P* **141** *L* **25** # **396**

Tae-Whan Yoo ETRI

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

Typo error

SuggestedRemedy

therough -> through

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.2** *P* **140** *L* **38** # **514**

Maislos, Ariel Passave

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

All available OLT transceivers require incoming reset signal synchronized with upstream burst.

SuggestedRemedy

change:
An additional interface is exported towards the MAC and Physical layer in order to enable and disable the lasing at the PMD.
to:
Additional interfaces are exported towards the MAC and Physical layer in order to enable and disable the lasing at the PMD, or reseting of the receiver.

Proposed Response *Response Status* **Z**

PROPOSED ACCEPT IN PRINCIPLE.
See 99100

C **56** *S* **56.3.2** *P* **141** *L* **38** # **324**

Khansari, Masoud Centillium Communic

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

The service interface to PMD should be clarified (either through explicit interface or layer management variables)

SuggestedRemedy

This issue needs to be clearly defined before going to working group ballet

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor will draft list of Clause 30 management variables for inclusion prior to ballot.
Interface variables would be included in this list.
See also 520

C **56** *S* **56.3.3** *P* **140** *L* **44** # **507**

Maislos, Ariel Passave

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

5MPCP

SuggestedRemedy

MPCP

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.3.4** *P* **142** *L* # **130**

Ochiai, Koji NTT corporation

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

There is no description about the ONU processing time between receiving a GATE MPCP and sending a frame to OLT.
If it isn't defined,there are some problems as following.
[Problem:1]ONU couldn't send a frame at the time assigned by OLT,if the ONU processing time is longer than the gap between the Normal Gate timestamp and the start time.
[Problem:2]ONU couldn't send a Resister_Req frame within the Discovery Window has been opening by OLT,if the ONU processing time is longer than the gap between the Discovery Gate timestamp and the start time.

SuggestedRemedy

We need to define the maximum value of processing time in the ONU.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See also presentation hirth_1_0103.pdf option 3.

Editor will add section in compatibility considerations to specify maximal processing time in ONU of 20microSeconds.
Section will also say how OLT is indifferent to this information.

This gives higher bound on penalty to RTT (so we don't exceed 20km too much), while allowing implementation freedom.

C **56** *S* **56.3.5.1.1** *P* **141** *L* **34** # **423**

I2R, Onfig Team Institute For Infocom

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

There is an error in the phrase "… setting the max_time_between_omp timer."

SuggestedRemedy

Suggest changing it to "setting the omp_timer."

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.5.1.1** *P* **142** *L* **38** # **508**

Maislos, Ariel — Passave

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

Fix maximal timout at 5 seconds.

SuggestedRemedy

Remove note specifiying open issue.

Proposed Response *Response Status* **C**

REJECT.
Timeout value would be fixed to 1 second.

C **56** *S* **56.3.5.1.2** *P* **144** *L* **1** # **325**

Khansari, Masoud — Centillium Communic

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

Variables "Master" and "local_time" already defined as shared variable in subclause 56.3.4

SuggestedRemedy

Remove these variables from this subclause

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.5.1.3** *P* **143** *L* **39** # **509**

Maislos, Ariel — Passave

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

Timers need to be cleaned up based on conventiones of 14.2.3.2.

SuggestedRemedy

Allow editor to change timer conventions for Draft 1.3

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.5.1.5** *P* **145** *L* **23** # **504**

Jaeyeon Song — Samsung

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

In interfaces, the Opcode is in front of the Timestamp. It is in wrong order.

SuggestedRemedy

OMP.indication(DA, SA, timestamp, opcode, m_sdu)
-->OMP.indication(DA, SA, opcode, timestamp, m_sdu)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See technical comments

C **56** *S* **56.3.5.1.6** *P* **144** *L* **11** # **203**

Ken, Murakami — Mitsubishi Electric

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

Figure 56-17
Whenever the MPCPDU including Discovery GATE with the broadcast MAC address is received, the omp_timer is re-invoked in the UPDATE TIMER state as shown in Figure 56-17.
If the ONU_timer[MAC] expires in the Discovery Process at the OLT, the MAC client may issue the MA_CONTROL.request primitive in which the DA is broadcast MAC address not unicast MAC address. In this case, the ONU receives the Discovery GATE with the broadcast MAC address in the REGISTERED WAIT state. According to the current state diagram shown in Figure 56-23, the ONU ignores this message. On the other hand, the omp_timer is re-invoked in the UPDATE TIMER state as shown in Figure 56-17. As a result, the state inconsistency between OLT and ONU cannot be resolved.
If the omp_timer is not re-invoked when the Discovery GATE with the broadcast MAC address is received, the omp_timer will expire and the state of the ONU will be cleared.
This comment relates to the response to comment #706 of D1.1.

SuggestedRemedy

When the Discovery GATE with the broadcast MAC address is received, the omp_timer should not be re-invoked.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Two distinct problems and solutions ensue:
1. When registered, the ONU ignores all Discovery Gates that are sent to it.
2.The OMP watchdog is armed only by normal GATE messages.

C **56** *S* **56.3.5.16** *P* **144** *L* **2528** # **89**

Nitosa, koji — NEC

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

"Subtype==GATE" in Figure56-17 sould be "opcode==GATE"

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.
See 511

C **56** *S* **56.3.6** *P* *L* # **99101**

Miyoshi, Hidekazu Sumitomo Electric In

Comment Type **T** *Comment Status* **R** *gate D1.1 #637*

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* **C**

REJECT.
See coment 99103

C **56** *S* **56.3.6** *P* **145** *L* **31** # **90**

Nitosa, koji NEC

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

"unpsecified" is typo.

SuggestedRemedy

"unpsecified"-->"unspecified"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.6** *P* **147** *L* **26** # **335**

Khansari, Masoud Centillium Communic

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

During the Kuaui meeting, Editor promised to add a table for deafult values of discovery window size vs. throughput to ensure stability of the 1-persistent algorithm proposed in the draft. The table currently is missing from this clause and need to added as promised.

SuggestedRemedy

Please make the changes before sending the draft to working ballot.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Table with informative values will be added:
X axis number of ONUs.
Y axis distance variation.
Value is minimal window size required to avoid instability.

C **56** *S* **56.3.6** *P* **148** *L* # **168**

Miyoshi, Hidekazu Sumitomo Electric In

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

Since registration is initiated by ONU, the expression of "MA_CONTROL.request(registration)" in figure 56-19 is only required in ONU discovery process.

SuggestedRemedy

Move MA_CONTROL.request(registration) from figure 56-19 to figure 56-20.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.6.1.1** *P* **149** *L* # **134**

Ochiai, Koji NTT corporation

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

There is a lack of constants illustrated in Fig.56-21.

SuggestedRemedy

We need to define the "wait_for_resister_ack" constant. This is used in the Figure 56-21(P.156 L.49).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
T not E
Editor will add constant definition to text.
Propose value set to 50milliSec

C **56** *S* **56.3.6.1.2** *P* **149** *L* *#* **333**

Khansari, Masoud — Centillium Communic

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

The following variables and constants are used in state diagrams decpited in Figures 56-21, 56-22 and 56-23, but are not defined:
TxAllow
LaserControl
IDLE_Time
regsiter_req_length
laser_on_time
laser_off_time
my_MAC

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
T not E
Editor will add definitions and references to variables
see 135

C **56** *S* **56.3.6.1.2** *P* **149** *L* **16** *#* **332**

Khansari, Masoud — Centillium Communic

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

Variables "local_time" and "Master" are already defined as shared variables in subclause 56.3.4

SuggestedRemedy

Remove these two variables from this clause (56.3.6.1.2)

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.6.1.2** *P* **150** *L* *#* **135**

Ochiai, Koji — NTT corporation

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

There are two lacks of variables illustrated in Fig.56-21.

SuggestedRemedy

We need to define the "IDLE_time" variables. This is used in the Figure 56-22(P.157 L.29).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See 333

C **56** *S* **56.3.6.1.2** *P* **150** *L* *#* **124**

Ochiai, Koji — NTT corporation

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

There is a lack of variables illustrated in Fig.56-21.

SuggestedRemedy

We need to define the "register_reg_length" variables. This value is used in the Figure 56-21(P.157 L.33).

Proposed Response *Response Status* **C**

REJECT.
Timers for grant_window are not required based on previous comments.

C **56** *S* **56.3.6.1.3** *P* **148** *L* *#* **82**

Kramer, Glen — Teknovus

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

supported_capability() and check_capability() functions should be defined precisely.

SuggestedRemedy

Expand the functions either as pseudo-code of state diagrams

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Capability vectors are currently neither well defined, nor used.
Proposed that capability vector fields be removed from protocol messgaes.

C **56** *S* **56.3.6.1.3** *P* **150** *L* **20** *#* **334**

Khansari, Masoud — Centillium Communic

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

The following functions and variables are used in ONU discovery state diagram (Figure 56-22) but not defined:
accepted_capability,
master_capability,
minimal_capability

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Capability vectors are to be removed.
See 82.

C **56** *S* **56.3.6.1.4** *P* **150** *L* **12** # **424**

I2R, Onfig Team — Institute For Infocom

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

There is a repeat of the explanation " and thus reduce the probability of invocation of the deferral process, thus lowering the expectency of registration time .."

SuggestedRemedy

Suggest deleting "reduce the probability .. deferral process,"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.6.1.4** *P* **151** *L* **47** # **331**

Khansari, Masoud — Centillium Communic

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

The following timers are used in Slave Discovery processing state machine but not defined:
IDLE_Timer
grant_window

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

ACCEPT.
T not E
Editor will add definitions for missing timers
see 125

C **56** *S* **56.3.6.1.4** *P* **152** *L* # **136**

Ochiai, Koji — NTT corporation

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

There is a lack of the definitions about timers illustrated in Fig.56-21.

SuggestedRemedy

We need to define the "IDLE_time" variables. This is used in the Figure 56-22(P.157 L.29).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See 333

C **56** *S* **56.3.6.1.4** *P* **152** *L* # **125**

Ochiai, Koji — NTT corporation

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

There is a lack of the definitions about timers illustrated in Fig.56-21.

SuggestedRemedy

We need to define the "grant_window" variables. This is used in the Figure 56-22(P.157 L.33).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See 333

C **56** *S* **56.3.6.1.5** *P* **151** *L* **23** # **515**

Maislos, Ariel — Passave

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

Adjust interface primitive definitions to allow one opcode per discovery message, gate or report message.

SuggestedRemedy

Follow example in maislos_cmts_3_0103.pdf, adjusting also diagrams to reflect coherence in naming.
Similar approach to be used for Gate and Report processing.
Fix also 56.3.7.1.5 and 56.3.8.1.5 using example as outline for solution.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.6.1.5** *P* **151** *L* **46** # **65**

Kramer, Glen — Teknovus

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

"MA_CONTROL.indication(reset):
The service indication issued by the Discovery Process to notify the client and Layer Management that the OLT has requested that all ports should be reset." What are the ports at ONU?

SuggestedRemedy

MA_CONTROL.indication(reset) is not needed. MA_CONTROL.indication(deregister, SA) does the same function and is sufficient.

Proposed Response *Response Status* **C**

ACCEPT.
MA_CONTROL.indication(reset) is not required, and should be removed.

C **56** *S* **56.3.6.1.6** *P* **154** *L* **1** # **113**

Karasawa, Satoru — Oki Electric Industry

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

The state diagrams depicted in Figures 56-21,22 and 23 don't include the case where the ONU is re-regitered (in other words re-discovered).

Using a Register message that has a force_regitration flag, the re-register sequence is as follows;
(1) OLT sends a Register with force_registartion flag.
(2) OLT sends a Discovery gate message with unicast DA.
(3) ONU sends a Register_Ack message.
(4) OLT calculates the RTT with the received Register_Ack.

OLT can know the ONU's laser_on time and so on because it has already dicsovered the ONU successfully.

SuggestedRemedy

Add the re-registraition sequence that is described in the above comment as an example into Figures 56-21,22 and 23.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Sequence will be added to diagrams by editor.
See 431 for exact solution

C **56** *S* **56.3.6.1.6** *P* **154** *L* **1** # **51**

Hirth, Ryan — Terawave Communic

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

Figure 56-21 - Flag names are not consistent with definitions of messages.
Deregister, Destruct, Destroy, DeAllocate be consistent where possible.

SuggestedRemedy

Use Destruction for ONU to OLT request.
Use DeAllocate for OLT to ONU request.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use Deregister ONU<-> OLT for protocol action
Use Deallocate OLT<->ONU for internal layer action

C **56** *S* **56.3.6.1.6** *P* **154** *L* **17** # **425**

I2R, Onfig Team — Institute For Infocom

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

fig 56-21
The parameter "length" is missing from the "MA_CONTROL.request function"

SuggestedRemedy

Suggest adding ", length" after the "grant_length" parameter.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.6.1.6** *P* **154** *L* **20** # **426**

I2R, Onfig Team — Institute For Infocom

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

There are additional parameters and wrong "requested_ports, first_flag, destroy_flag" of the function "OMP.indication".

SuggestedRemedy

Suggest deleting "requested_ports, first_flag" and renaming "destroy_flag" to "deallocate_flag" from the function.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.6.1.6** *P* **155** *L* *#* **431**

I2R, Onfig Team Institute For Infocom

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

Figure 56-22
1.¸ There is only one instance, one LLID per ONU, therefore when an LLID is deregistered or reset, the MAC should not be destroyed, but rather become inactive.
2.¸ The following timers are set but their timeouts are not checked anywhere: IDLE_timer, grant_window, wait_for_register_msg.
3.¸ When an ONU does not receive REGISTER within max_register_wait, it should assume collision and wait for next discovery window. In the present state diagram, as long as the next discovery gate hasn't come, ONU will respond to any delayed REGISTER. wait_for_register_msg timer is not working.
4.¸ Differences of reregister, Nack and unsupported capability are not shown.
5.¸ When an ONU is asked to reregister at the next discovery window, i.e. Force registration flag is true, it should immediately go back to wait for next discovery gate rather than WAIT state.

SuggestedRemedy

1.¸ For states UNICAST DISCOVERY and DEREGISTER, cancel checking of if(me==Broadcast_ID) and their "false" link to END state.
2.¸ Check timeout(IDLE_timer) before START TX, check timeout(grant_window) before STOP TX.
3.¸ Let state ARRIVING REGISTER follow STOP TX sequentially, rather than returning to REGISTERING. If timer wait_for_register_msg times out before receiving a REGISTER, go back to wait for next discovery window.
4.¸ In ARRIVING REGISTER, check for the following possibilities separately: Force reregistration, capability not supported, Nack. The responses are shown in dotted box.
5.¸ If ONU is forced reregistration, go to wait for next discovery window.
Please refer to file raymond_cmts_3_0103.pdf. The modified states/paths are highlighted. (raymond_cmts_4_0103.pdf is not highlighted).

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
Plese separate to multiple commetns in the future.

1. ACCEPT

2. ACCEPT IN PRINCIPAL, no need to check grant_window based on previous comments

3. ACCEPT

4. ACCEPT

5. ACCEPT

C **56** *S* **56.3.6.1.6** *P* **155** *L* **1** *#* **336**

Khansari, Masoud Centillium Communic

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

State diagram of the Master's discover processing block as shown in Figure 56-21 can have only one outstanding discovery window, and it is not possible to have multiple pending discovery windows. This is an unnecessary limitation

SuggestedRemedy

Please make the required changes to Figure 56-21 such that it is possible to have multiple pending discovery windows at any given time.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Solution to 338 will also provide for this.

C **56** *S* **56.3.6.1.6** *P* **155** *L* **33** *#* **304**

Nitosa, koji NEC

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

Terms to exit state "TURN LASER ON" in Figure56-22 should be "timeout(IDLE_timer)

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.
See 431

C **56** *S* **56.3.6.1.6** *P* **155** *L* **35** *#* **305**

Nitosa, koji NEC

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

Terms to exit state "REGISTER REQ" in Figure 56-22 should be "timeout(grant_window)"

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

REJECT.
No need for grant_window timer as demonstrated by previous comments

C **56** *S* **56.3.6.1.6** *P* **155** *L* **37** # **306**

Nitosa, koji NEC

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

"Wait_for_register_msg" timer is unnecessary, because "BACKOFF" was deleted.
REGISTER REQ in Figure56-22,
ARRIVING REGISTER in Figure56-22,
ZERO STATE in Fgure56-23,
56.3.6.1.4 Timers

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

REJECT.
Possibility of contention still exists, thus it it is still required to wait for register message with timer.

C **56** *S* **56.3.6.1.6** *P* **156** *L* # **170**

Miyoshi, Hidekazu Sumitomo Electric In

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

I don't think that the CHECK DESTRUCT ID block in figure 56-21 is necessary, because the broadcast MAC in OLT never receives packets ("the broadcast MAC can only transmit packets." page 185, line 1).

SuggestedRemedy

Remove this block, and the arrow from the INDICATE DEREGISTER block needs to be directly connected to the FREE LLID block.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.6.1.6** *P* **156** *L* # **171**

Miyoshi, Hidekazu Sumitomo Electric In

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

According to table 56-5, OLT can send the Register message with Deallocate flag. But no clear description can be found in figure 56-21 regarding under what condition OLT sends this message.
I see two possibilities regarding when OLT sends REGISTER with deallocate. One condition would be when OLT receives REGISTER_REQ with destruction from an ONU, and the other is when a higher layer requests to send the message.

SuggestedRemedy

Please clarify under what circumstances OLT sends REGISTER with deallocate.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Deallocation process would be clarified in text and diagrams based on other more specific comments.

C **56** *S* **56.3.6.1.6** *P* **156** *L* # **169**

Miyoshi, Hidekazu Sumitomo Electric In

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

There are inconsistent state flows regarding discovery process between OLT and ONU. On the one hand, there is a case where a slave (ONU) receives the discovery gate with an unicast MAC-DA address as shown in figure 56-22. On the other hand, as can be seen in figure 56-21, master (OLT) sends only the discovery gate with the broadcast address (MA_CONTROL.request(grant, broadcast_id,,,) in the SEND REGISTER WINDOW block).

SuggestedRemedy

"Broadcast_id", the second argument of MA_CONTROL.request() in the SEND REGISTER WINDOW block of figure 56-21, should be replaced to "DA" that is passed from the second argument of MA_CONTROL.request (create_discovery_window,DA,,,).

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.6.1.6** *P* **157** *L* # **174**

Miyoshi, Hidekazu Sumitomo Electric In

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

In figure 56-22, the ONU behavior of receiving REGSITER is not clear. The flag field of the register message could take various values, but there is not enough description how ONU reacts in response to each flag value.

SuggestedRemedy

Please add detailed statements (something like below: assuming that OMP.indication conveys the flag field just as it is) in the ARRIVING REGISTER block in figure 56-22.

If (flag == NACK)
  Go to the NACK block
Else If (flag == SUCCESS) and (minimal_capability(accepted_capability)<>0)
  Go to true
Else If (flag == SUCCESS) and (minimal_capability(accepted_capability)==0)
  Go to the NACK block
Else If (flag == FORCE_REGISTRATION)
  Go to ???
Else If (flag == DEALLOCATION)
  Go to ???

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Diagram should be cleaned using this principle.

C **56** *S* **56.3.6.1.6** *P* **157** *L* *#* **175**

Miyoshi, Hidekazu Sumitomo Electric In

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

Since ONU does not have the broadcast MAC ("The ONU only requires one MAC instance..."page 127, line 1), the "if (m==Broadcast ID)" condition in the UNICAST DISCOVERY block in figure 56-22 is not necessary. For the same reason, the "if condition" in the DERGISTER block in figure 56-23 is not needed.

SuggestedRemedy

Remove both "if conditions" from the figures.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use check of registered flag instead of checking me==Broadcast ID before performing deregistration.

C **56** *S* **56.3.6.1.6** *P* **157** *L* *#* **173**

Miyoshi, Hidekazu Sumitomo Electric In

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

In the current draft, the discovery gate message is passed from the OMP parser to the discovery process in the form of OMP.indication. In this sense, the arrow below the REGISTERING block in figure 56-22 and the REGISTERED WAIT in figure 56-23 should be represented by OMP.indication().

SuggestedRemedy

Change MA_CONTROL.request() to OMP.indication() in the figures.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.6.1.6** *P* **158** *L* *#* **172**

Miyoshi, Hidekazu Sumitomo Electric In

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

There are a couple of unclear points on the state transition of the ONU deregistration in figure 56-23. First, I think the ONU deregistration occurs at the REGISTERED WAIT block when a higher layer requests MA_CONTROL.request (deregister). If this is true, why the ONU discovery process issues MA_CONTROL.indication (deregistered) to the higher layer at the DERGISTER block? For the higher layer, this indication is too obvious, since it initiates this process. Another unclear point I have is why "remove_timer(wait_for_register_msg)" in the ZERO STATE block is required. Finally, I don't know whether it is possible for ONUs to send REGISTER_REQ with deallocate both during discovery window and during normal gate.

SuggestedRemedy

Please clarify the process of the ONU deregistration.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See 72,73 for exact solutions.

C **56** *S* **56.3.7** *P* *L* *#* **179**

Miyoshi, Hidekazu Sumitomo Electric In

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

There is a possibility for OLT to receive two different types of report messages, autonomous report and queue report, which may cause OLT to misinterpret current queue status in ONU.
As can be seen in figure 56-26, the autonomous report is generated by the report processing and never includes queue status, while the queue report is originated by Mac control client and does contain queue status. The queue status conveyed by the queue report, however, may be empty if there is no data to send in the current queue of the ONU. In the current draft, there is no distinction in terms of message format between autonomous report and queue report, thus when OLT receives a report message with empty queue status, OLT can not identify whether queue is really empty or not (the autonomous report always shows empty queue status whether or not the queue in the ONU contains data).

SuggestedRemedy

Why don't we set below definition regarding the number of queue sets field in the report message? In the case of autonomous report, the number of queue sets field always indicates zero, while in the case of queue report, the field represents a non-zero value.

Proposed Response *Response Status* **C**

ACCEPT.
Autonomous report conveys no information i.e. it does not report on any queue as oposed to a report convaying information that says queue n has 0 bytes.
So autonomous report would have queue sets set to 0.

C **56** *S* **56.3.7.1.1** *P* **158** *L* **22** *#* **518**

Maislos, Ariel Passave

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

Timeout value is not finalized

SuggestedRemedy

Fix timeout value to 50 milisecond. This would be in line with carrier requirements for failover detection.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.7.1.2** *P* **159** *L* **40** # **344**

Khansari, Masoud — Centillium Communic

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

"Master" variable is already defined as shared variable in 56.3.4 and there is no need to redefine is here.

SuggestedRemedy

Remove definition of "Master" variable

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.7.1.5** *P* **159** *L* **16** # **521**

Maislos, Ariel — Passave

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

RTT should be reported for every indication to allow constant compensation by the OLT

SuggestedRemedy

Add RTT reporting in .indication interface for every incoming REPORT msg.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add indication of RTT to every .indication following reception of MPCP message at the OLT.

C **56** *S* **56.3.8** *P* **163** *L* # **176**

Miyoshi, Hidekazu — Sumitomo Electric In

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

Since the gate process never involves with the reception of the discovery gate message, the arrow of MA_CONTROL.request(create_discovery_window) below the GATE Processing block in figure 56-27 is not needed. Also the description of the MA_CONTROL.request(create_discovery_window) in page 166, line 45 is not necessary.

SuggestedRemedy

Get rid of the arrow and the description.

Proposed Response *Response Status* **C**

ACCEPT.
See 142

C **56** *S* **56.3.8.1** *P* **162** *L* **25** # **516**

Maislos, Ariel — Passave

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

last hierarchy is superfluous.

SuggestedRemedy

renumber text to 56.3.8 removing .1 hierarchy

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.8.1.2** *P* **162** *L* **11** # **91**

Nitosa, koji — NEC

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

DEFAULT VALUE that corresponds to "force_report" doesn't exist in the list.

SuggestedRemedy

Add DEFAULT VALUE for "force_report".

Proposed Response *Response Status* **C**

ACCEPT.
T not E
see 141

C **56** *S* **56.3.8.1.2** *P* **162** *L* **48** # **297**

Dawe, Piers — Agilent

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

At the last meeting we learned that too much flexibility is seen as a bad thing by influential industry players. That being so, the granularity of laser_on_time and laser_off_time should be greatly coarsened. The shortest advertised time (which is a maximum: PMDs are free to go faster) should be that below which any extra efficiency in voice-oriented EPONs is not worth fighting for; proposed value is 600 ns. The next shortest advertised time should be AT LEAST double that. Further steps should be on an exponential scale - keep doubling - if that is seen as convenient to implement. The proposed remedy delivers 512, 1024 etc ns. It wastes startup message bits but so what.

Similarly for AGC Settling Time and CDR Lock Time.

SuggestedRemedy

Any entity transmitting these quantities to report a 32 bit unsigned number in which only one bit is set, and the least significant 5 bits are always zero;
Any entity receiving these quantities to ignore all but the most significant bit.
Similarly for AGC Settling Time and CDR Lock Time.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Attempt is made to reconcile also shorter transmission times in order to accommodate faster devices when and if available.
96, 208, 304, 400 ns are permissible.
As representation is in TQ (16 bit times) proposed legal values for the parameters are: 6, 13, 19, 25, etc.
Usage of laser_on and laser_off parameters is to be discontinued.

C **56** *S* **56.3.8.1.2** *P* **163** *L* # **347**

Khansari, Masoud — Centillium Communic

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

Variable "local_time" is already defined as shared variable in 56.3.4 and should not be redefined

SuggestedRemedy

Remove "local_time" variable from this section

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.8.1.2** *P* **164** *L* **11** # **141**

Ochiai, Koji — NTT corporation

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

About "current_grant" variable.
There is a partial lack of initial value of the "current_grant.force_report".

SuggestedRemedy

It might be "DEFAULT VALUE:{FF-FF-FF-FF-FF-FF,00-00-00-00-00-00,false,false}

Proposed Response *Response Status* **C**

ACCEPT.
T not E
See 91

C **56** *S* **56.3.8.1.5** *P* **166** *L* **16** # **355**

Khansari, Masoud — Centillium Communic

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

Are we still supporting "local" grants???
If not remove this paragraph.

SuggestedRemedy

local variable in MA_CONTROL.request primitive for grant messages is not well-defined and not clear what is its purpose

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Paragraph is to be removed

C **56** *S* **56.3.8.1.5** *P* **166** *L* **45** # **143**

Ochiai, Koji — NTT corporation

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

The "MA_CONTROL.request(create_discovery_window) message is defined.

SuggestedRemedy

I think of that it should be deleted.

Proposed Response *Response Status* **C**

ACCEPT.
See 176,142

C **56** *S* **56.3.8.1.6** *P* **166** *L* *#* **432**

I2R, Onfig Team Institute For Infocom

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

1.¸ If ONU is in WAIT state waiting for timeout(IDLE_timer) while GATE messages keep coming in and being processed, START TX may be delayed. Effective grant length is reduced. In fact it is not necessary to update grants immediately during a grant execution, as long as the next grant is not chosen yet.
2.¸ To choose the earliest grant, Gate processing must go through all existing grants every time. If the grant list is in a sorted order, read/comparison operations will be minimized.
3.¸ Checking whether a grant is valid in state SORT is confusing. It can be simplified.
4.¸ In SORT state, if the chosen grant is outdated, it should be removed from grant_list and then repeat SORT state.
5.¸ If the grant list is empty, ONU should enter WAIT to wait for next incoming gate.
6.¸ Since only normal grants are passed to Gate Processing, it is not necessary to check ¸ if (!discovery) in state PROGRAM.

SuggestedRemedy

1.¸ Execute TURN LASER ON, START TX, STOP TX in a sequential order. Grants can be updated while waiting for timeout(grant_start). It would give a clearer view of transmission sequence.
2.¸ insert_list would first compare a new grant with the last grant in list and onwards and insert in a time order. The grant list would then be sorted. The next grant is just the next in the list.
3.¸ In SORT state, check if (local_time < current_grant.start+current_grant.length-laser_on_time-IDLE_time-laser_off_time) would be sufficient to select the next valid grant.
4.¸ In SORT, if the selected grant is not valid, remove it from grant list.
5.¸ If grant list empty, go to WAIT for next incoming gate.
6.¸ Delete if (!discovery) in state PROGRAM.
Please refer to file raymond_cmts_1_0103.pdf.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
Check for discovery flag is redundant and should be removed.
Diagram is to be split to two sub diagrams:
1. control of grant window
2. protocol element

see diagram GATE-protocol.pdf and GATE-grant.pdf

C **56** *S* **56.3.8.1.6** *P* **166** *L* **3** *#* **519**

Maislos, Ariel Passave

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

Spontaneous generation of MA_CONTROL.indication precedented in 31B.3.6.4

SuggestedRemedy

remove comment, closing issue

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.3.8.1.64** *P* **168** *L* *#* **177**

Miyoshi, Hidekazu Sumitomo Electric In

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

I think that in the SORT block of figure 56-29, the remove_list function must be called inside the else condition associated with "if time>laser_on_time + IDLE_time+laser_off_time".

SuggestedRemedy

In the SORT block, add remove_list() as shown below.

```
...
if time > laser_on_time + IDLE_time+laser_off_time
   set_timer()
else
   remove_list()
   repeat block while !empty()
```

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.4.1** *P* **172** *L* **8** *#* **427**

I2R, Onfig Team Institute For Infocom

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

Table 56-1
The References table is not updated with the change in headings of the various MPCPDU

SuggestedRemedy

Suggest changing the references to "GATE 56.4.2, REPORT 56.4.3, .. REGISTER_ACK 56.4.6" from "56.3.3 …"

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.4.2** *P* **146** *L* *#* **99103**

Miyoshi, Hidekazu — Sumitomo Electric In

Comment Type **T** *Comment Status* **R** *gate D1.1 #636*

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* **C**

REJECT.
Mechanisms in MPCP should remain independent of specific DBA algorithms.
Vendors may already use PAD/Reserved fields for exchange of proprietary information.
Also, vendors may use network management to set policy parameters for their ONU, same as weight-fair-queuing or round-robin setup in P2P networks.
Policy setup is out of scope of our TF.

Accept editor's response
Y: 15 N: 4 A: 3 >= 75%
PASS

C **56** *S* **56.4.2** *P* **146** *L* *#* **99102**

Miyoshi, Hidekazu — Sumitomo Electric In

Comment Type **T** *Comment Status* **D** *gate D1.1 #634*

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.
Mechanisms in MPCP should remain independent of specific DBA algorithms.
Vendors may already use PAD/Reserved fields for exchange of proprietary information.

Motion to approve editor's response
M: Tom Dineen S: Ariel Maislos
Y: 15 N: 8 A: 2

Motion to accept suggested remedy and make appropriate changes to text
M: Hideoki Miyoshi S: Glen Kramer
Y: 7 N: 15 A: 3

C **56** *S* **56.4.2** *P* **168** *L* **21** # **204**

Ken, Murakami — Mitsubishi Electric

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

Table 56-2
The description "at the next transmission opportunity" is not suitable.

SuggestedRemedy

Change "at the next transmission opportunity" to "at the corresponding transmission opportunity indicated in this GATE".

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.4.2** *P* **168-169** *L* **13** # **207**

Lee Ho-Sook — ETRI (Electronics Tel

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

line 13 of page 168 (Table 56-2) and line 47 of page 169 (Fig 56-31)
Fig. 56-31, and Table 56-2
1st proposal : Change 1 byte “number of grants/flags” field to 4 bytes
0-2 bit : # of grants
3 bit : discovery gate / normal gate
4-7 bit : flags for forced report
2 bytes : 4bit flags for vendor specific extension (4bit flags *4 grants info.)
1 byte : vendor specific information

2nd proposal : Insert 3 bytes of “vendor specific fields” into “Pad/Reserved” field
2 bytes : 4bit flags for vendor specific extension (4bit flags *4 grants info.)
1 byte : vendor specific information

SuggestedRemedy

please refer the 8th slide of the hosook_cmts_1_0103.pdf

Proposed Response *Response Status* **C**

REJECT.
This comment leads to proprietary protocols with no interoperability in the standard.
This is the oposite of what we attempt to do in the task-force.

C **56** *S* **56.4.2** *P* **170** *L* **1** # **349**

Khansari, Masoud — Centillium Communic

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

When force report flag of a grant period is set, does it mean that a report has to be sent during that grant period or it means to send a report message at the first possible oppurtunity? If the latter is meant then it is not clear why every grant period (of the possible 4) has its own force report flag. If two are set and the other two are not, what does ONU is required to do?

SuggestedRemedy

Please clarify the force report mechanism and the responsibility of ONU when it receives a gate message with some of its force report flag set.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Clarification to be added as in comment 204.

C **56** *S* **56.4.2** *P* **170** *L* **44** # **350**

Khansari, Masoud — Centillium Communic

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

AGC settling time, CDR lock time values are sent by OLT to ONU by every gate message. Does this really needed as these parameters are negotiated during capability checking of registeration. Would it be possible to dynamically changing these variables without going through re-registeration?

SuggestedRemedy

In the working group ballet draft, it should be clear if dynamic changes of these parameters is allowed and if yes what is the mechanism for it and if it is not allowed what is the need for them to be sent with every GATE message.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
There is no need to send these variables in every gate.
They are present in a discovery gate, otherwise an ONU does not know how to transmit his REGISTER_REQ.
Clarification would be added to this effect in the text.

C **56** *S* **56.4.3** *P* **171** *L* # **180**

Miyoshi, Hidekazu — Sumitomo Electric In

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

Autonomous report is initiated by the report processing (not MAC control client), thus the word "must" in the sentence, "MAC control client must issue REPORT message occasionally", is not appropriate.

SuggestedRemedy

Change "MAC control client" to "ONU" in the sentence.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **56.4.3** *P* **171** *L* **24** # **92**

Nitosa, koji NEC

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

"Number of requests" in Figure56-32 should be "Number of queue sets"

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT.
See 118

C **56** *S* **56.4.3** *P* **172** *L* **4** # **351**

Khansari, Masoud Centillium Communic

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

For interoperability purposes, it should be clear what ONU is reporting when it is sending REPORT messages to inform OLT of the status of its queues. If there is a intent for vendor differentiation, then there should be mechanism for equipment from different vendors to fall back to default mode of operation. This is an absolute must for interoperability

SuggestedRemedy

REPORT message structure and format should be clarified to ensure interoperability before going to working group ballet.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Cleare wording to be added to 56.4.3.c that queue status is specified in word multiples.

C **56** *S* **56.4.4** *P* **172** *L* **8** # **428**

I2R, Onfig Team Institute For Infocom

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

Table 56-4
The table is not updated with the change in the the "REGISTER_REQ description".

SuggestedRemedy

Suggest deleting the row "1 Initial registration First registration following reset" and renaming "Destruction" to "Deallocate"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See also 178

C **56** *S* **56.4.4** *P* **174** *L* # **178**

Miyoshi, Hidekazu Sumitomo Electric In

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

I think that "Initial registration" should be just "Registration", because "initial registration" is a particular word used for multiple LLID per ONU environment.

SuggestedRemedy

Change the word to "Registration."

Proposed Response *Response Status* **C**

ACCEPT.
See 119

C **56** *S* **56.4.6** *P* **175** *L* # **81**

Kramer, Glen Teknovus

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

"Supported Capabilities. This is a 64 bit capability vector that is passed during the registration process between the higher-layer entities. This field is not parsed by MPCP. It holds the OLT capabilities supported and acknowledged by the ONU."

Capability vector should be clearly defined. Without doing so, interoperability cannot be achieved.

SuggestedRemedy

Suggest making capability vector a list of field-codes that ONU and OLT supports in the GATE and REPORT messages.

Proposed Response *Response Status* **Z**

PROPOSED ACCEPT IN PRINCIPLE.
Capability vector intended as vehicle for use by higher layers.
If higher layer protocols can not use this fields, then interoperability is better served by removing capability vector fields.

C **56** *S* **56.4.6** *P* **176** *L* **6** # **429**

I2R, Onfig Team — Institute For Infocom

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

The "Success" flag in this page is not necessary. Because for the simplification of the discovery process, when the ONU's registration is denied by OLT, the OLT don't need to send a GATE to the ONU for the transmission of the REGISTER_ACK . That is to say when the ONU is informed by the REGISTER message that its registration is denied for whatever reasons it does not need to send any REGISTER_ACK message to OLT.

SuggestedRemedy

Take out the "Success" flag field in the REGISTER_ACK MPCPDU and delete the sentence of OMP.REQUEST (SA,DA,opcode=REGISTER_ACK,success=false) in line 7-8 of figure 56-22 in page 155 correspondingly.

Proposed Response *Response Status* **U**

REJECT.
Success=1 flag informs OLT that registration is complete fr the ONU.
Success=0 flag informs OLT that in spite of sucessful REGISTER, ONU is NACKing the registration.

C **56** *S* **Figure** *P* **146** *L* # **326**

Khansari, Masoud — Centillium Communic

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

The caption for this figure should read "OMP Parser State Diagram"

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

ACCEPT.
Chage Figure 56-17 to OMP Parser State Diagram
Chage Figure 56-18 to OMP Multiplexer State Diagram

C **56** *S* **Figure 56-15** *P* **140** *L* **10** # **129**

Ochiai, Koji — NTT corporation

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

In the Fig.56-15.
At the "INIT" block.
The "transmit_in_progress == false" semms an erroneous description.

SuggestedRemedy

I think of that the "transmission_in_progress == false" might be an exact description.

Proposed Response *Response Status* **C**

ACCEPT.
Duplicate 128

C **56** *S* **Figure 56-22** *P* **155** *L* # **68**

Kramer, Glen — Teknovus

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

There is no need to split the Slave discovery processing state diagram into two pages.

SuggestedRemedy

the state diagram with changes layout that fits on one page is submitted to the editor

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
T not E
See file kramer_cmts_1_0103.pdf
Submitted diagram introduces many changes assumed by other comments, and thus can not be accepted independently.

New diagram to be used in Draft 1.3 will use this diagram together with all fixes as instructed by comments.

C **56** *S* **Figure 56-10** *P* **134** *L* **13** # **126**

Ochiai, Koji — NTT corporation

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

In Fig.56-10.
Under the "Control Parser" block.
The direction of the arrow that leads to the "ReceiveFrame" is not correct.

SuggestedRemedy

The direction of the arrow might be opposite.

Proposed Response *Response Status* **C**

REJECT.
See 416

C **56** *S* **Figure 56-10** *P* **134** *L* **16** # **394**

Tae-Whan Yoo — ETRI

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

The direction of the arrow indicating ReceiveFrame is wrong.

SuggestedRemedy

The direction should be reversed.

Proposed Response *Response Status* **C**

REJECT.
See 416

C **56** *S* **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

C **56** *S* **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

C **56** *S* **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

C **56** *S* **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

C **56** *S* **Figure 56-11** *P* **134** *L* *#* **317**

Khansari, Masoud — Centillium Communic

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

Transmission_in_progress[n] output is missing from this diagram

SuggestedRemedy

Add this output

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **Figure 56-12** *P* **156** *L* *#* **338**

Khansari, Masoud — Centillium Communic

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

When a REGISTER_REQ message is received outside of the discovery window (direct transition from IDLE state to INSIDE REGISTER WINDOW), OLT after checking this messge will send a REGISTER message and wait in INSIDE REGISTER WINDOW state and cannot get back to IDLE state as there is no "register_window_size" timer to be expired. Therefore, when it recieves an acknowledgement for its REGISTER message from ONU, it does not know what to do.

SuggestedRemedy

This flaw needs to be fixed before going to working group ballet.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Probably comment meant Figure 56-21, not 56-12.
This is a deadlock situation in the discovery diagram.

Editor proposes to split diagram to two sub diagrams:
Diagram 1 - setting up of discovery windows.
Diagram 2 - dealing with register_req/register_ack messages.

Diagram 1 will raise a flag saying "in window/out of window", while Diagram 2 will do the discovery protocol.
Editor believes this will significantly simplify the discovery diagram.

If this is sucessful, we can do this also for the ONU.

See also 336

C **56** *S* **Figure 56-14** *P* **139** *L* *#* **323**

Khansari, Masoud — Centillium Communic

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

There are two states with the same name "SIGNAL".

SuggestedRemedy

Either combine them into one state or use different name for them.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change names to SIGNAL DATA and SIGNAL CONTROL.
States can not be removed to show precedence of control over data.

C **56** *S* **Figure 56-14** *P* **139** *L* **7** *#* **128**

Ochiai, Koji — NTT corporation

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

In the Fig.56-14.
At the "INIT" block.
The "transmit_in_progress == false" seems an erroneous description.

SuggestedRemedy

I think of that the "transmission_in_progress == false" might be an exact description.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **Figure 56-15** *P* **138** *L* *#* **62**

Kramer, Glen — Teknovus

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

ONU Control multiplexor should check if the frame it is about to transmit fits into the remaining grant.

SuggestedRemedy

(a) Suggest differentiating "GATE processing" from "grant processing"
"GATE processing" is parsing of GATE messages, verifying grants, and creating sorted list of grants. "Grant processing" is enabling and disabling transmissions at right times.

(b) Suggest moving "grant processing" from GATE processing state diagram to ONU Multiplexor state diagram. Control Multiplexor will be responsible for taking next grant from the (already) sorted list and verifying that frames fit in the grant before transmitting them.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add remaining_time variable, similar in behavior to local_time.
Variable is updated based oncalculated end of grant by Gate Processing.
Variable is used to all of frame transmission.
See attached diagram for suggested solution.
If formula: (sizeof(m_sdu)+30<=remaining_time)
30 is 8 preamble + 6 DA + 6 SA + 4 FCS + 6 /T/R/R/.

Y: 13 N: 1 A: 3

C **56** *S* **Figure 56-16** *P* **141** *L* *#* **63**

Kramer, Glen Teknovus

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

Interface to OMP Parser/Multiplexor (Figure 56-16) does not correspond to Control Parser interface.

Control Parser (Figure 56-10) has interface called "MAC Control function activation", but it is connected to OMP's interface called "MA_CONTROL.indication"

SuggestedRemedy

Use MA_CONTROL.indication for both

Proposed Response *Response Status* **C**

ACCEPT.
See also 510

C **56** *S* **Figure 56-17** *P* **140** *L* **28** *#* **123**

Ochiai, Koji NTT corporation

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

In the Fig. 56-17.

On the connection line between "PARSE TYPE" and "PASS TO DISCOVEY PROCESSING"
The "subtype == GATE" seems an erroneous description.

SuggestedRemedy

I think of that the "opcode == GATE" might be an exact description.

Proposed Response *Response Status* **C**

ACCEPT.
See 511,89

C **56** *S* **Figure 56-17** *P* **144** *L* *#* **64**

Kramer, Glen Teknovus

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

Upon reception of an MPCP frame, ONU will update its local clock.
If this clock is updated during frame transmission, it may happen that a new slot_end is earlier than it was when when the frame was admitted for transmission. That will lead to either ONU's tranmitting past the grant boundary, or laser turning off during frame transmission.

SuggestedRemedy

Suggest to put additional test as following:

```
If( abs(timestamp - local_time) > guard_threshold )
  stop transmission immediately
else
{
  finish transmitting current frame (if any in transmission)
  update local clock
}
```

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Guard band should accommodate all clock jitters except for errors.
Also the MAC service interface does not support abortion of transmission once initiated (see Figure 2-2 in sub-clause 2.2.2), and when transmission is terminated early. Only option is to turn off the laser.

Thus behavior should follow error state and not normal operation:

```
If( abs(timestamp - local_time) > guard_threshold )
  timestamp_error = true
update local clock
```

Where timestamp_error feeds new ERROR state in ONU where gating is disabled, and ONU is deregistered.

C **56** *S* **Figure 56-17** *P* **145** *L* **28** *#* **511**

Maislos, Ariel Passave

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

Subtype

SuggestedRemedy

opcode

Proposed Response *Response Status* **C**

ACCEPT.
See 89

C **56** *S* **Figure 56-17** *P* **146** *L* *#* **328**

Khansari, Masoud Centillium Communic

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

In state "PARSE INDICATION", it should read
m_sdu=m_sdu[8:48] and not m_sdu=m_sdu[8:47]

SuggestedRemedy

make the required changes

Proposed Response *Response Status* **C**

REJECT.
Numbering is 0 to 47, not 1 to 48

C **56** *S* **Figure 56-17** *P* **146** *L* *#* **327**

Khansari, Masoud Centillium Communic

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

In state "UPDATE TIMER" needs to remove the current timer before starting a new timer.

SuggestedRemedy

Define a new "remove_timer" function and remove the old timer before starting a new timer.

Proposed Response *Response Status* **C**

REJECT.
No need to remove timer.
Setting timer automatically resets it.

C **56** *S* **Figure 56-17** *P* **146** *L* **25** *#* **131**

Ochiai, Koji NTT corporation

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

In the Fig. 56-17.

On the connection line between "PARSE TYPE" and "PASS TO GATE PROCESSING",
The "subtype == GATE" seems an erroneous description.

SuggestedRemedy

I think of that the "opcode == GATE" might be an exact description.

Proposed Response *Response Status* **C**

ACCEPT.
See 511

C **56** *S* **Figure 56-18** *P* **147** *L* *#* **329**

Khansari, Masoud Centillium Communic

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

The caption for this Figure should read:
"OMP Multiplexer State Diagram"

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **Figure 56-19** *P* **148** *L* *#* **353**

Khansari, Masoud Centillium Communic

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

MA_CONTROL.indication(reset) is not explained in the OLT state machine discovery.

SuggestedRemedy

Should it be "MA_CONTROL.indication(deregister)?

Proposed Response *Response Status* **C**

ACCEPT.
T not E

C **56** *S* **Figure 56-19** *P* **148** *L* **13** *#* **132**

Ochiai, Koji NTT corporation

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

The "MAC_CONTROL_request(registration)" in Fig.56-19 is an erroneous description.

SuggestedRemedy

It does not need for Fig.56-19,but need for Fig.59-20.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor will clean operands in interfaces in diagrams and text

C **56** *S* **Figure 56-2** *P* **126** *L* *#* **308**

Khansari, Masoud — Centillium Communic

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

MAC Control for EPON system is not optional and in fact its implementation is mandatory.

SuggestedRemedy

Remove optional from the MAC Control layer in Figure 56-2

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
T not E
MAC Control is optional in the Ethernet stack, it however mandatory for an EPON implementation. Same as OAM is optional but mandatory when used in access.

Add text to read as following:
Implementation of Multipoint MAC Control is mandatory for subscriber access devices containing point-to-multipoint physical layer devices defined in Clause 58, and optional for all other IEEE 802.3 devices.

C **56** *S* **Figure 56-20** *P* **148** *L* *#* **330**

Khansari, Masoud — Centillium Communic

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

Why do we need to have explicit function for GATE messages as: "GATE.request(grant)" when there is OMP.request message? Also if this function is needed then it has to be defined in subclause 56.3.6.1.5

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
T not E
see proposed cleaning of interfaces

C **56** *S* **Figure 56-20** *P* **148** *L* **42** *#* **133**

Ochiai, Koji — NTT corporation

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

The "GATE.request(grant)" in Fig.56-20 is an erroneous description.
And the direction of the "GATE.request(grant)" arrow is not correct.

SuggestedRemedy

I think of that the "MA_CONTROL.request(GATE) might be correct, thus the direction of the arrow will be oppsite.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See interface naming convention

C **56** *S* **Figure 56-21** *P* **154** *L* *#* **66**

Kramer, Glen — Teknovus

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

All state diagram captions use ONU and OLT except discovery processing, which uses Master and Slave.

SuggestedRemedy

change captions to Figures 56-21 through 56-23 to "OLT Discovery Processing state diagram" and "ONU Discovery Processing state diagram" rather than using Master and Slave. That will make naming consistenth thoughout the document.

Proposed Response *Response Status* **C**

ACCEPT.

C **56** *S* **Figure 56-21** *P* **154** *L* *#* **67**

Kramer, Glen — Teknovus

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

In transition from IDLE state to SEND REGISTER WINDOW, remove check for Master == true, since this is already diagram for Master

SuggestedRemedy

Remove "Master == true"

Proposed Response *Response Status* **C**

ACCEPT.
Check for Master variable should be removed from all OLT only or ONU only diagrams.
A note should be added that selection of OLT/ONU diagram is based on contents of Master register.
See 76

C **56** *S* **Figure 56-21** *P* **156** *L* *#* **356**

Khansari, Masoud — Centillium Communic

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

what is the first_flag variable in REGISTER_REQ message that takes IDLE to CHECK_DESTRUCTOR state. Also it is not clear what is requested_ports in the same OMP.indication message

SuggestedRemedy

Please clarify and make the required changes

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Requested_ports is legacy and should be removed.
First_flag is meant to read initial_registration, fixed to registration in comments 178,119
Editor will clean parameters based on agreed convention.

C **56** *S* **Figure 56-21** *P* **156** *L* **#** **339**

Khansari, Masoud — Centillium Communic

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

In REGISTER_NACK state OMP.request(DA,SA,...) should read OMP.request(SA,my_MAC,...)

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
T not E
See proposal for revised interfaces

C **56** *S* **Figure 56-21** *P* **156** *L* **#** **337**

Khansari, Masoud — Centillium Communic

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

Checking for the value of Master variable is not needed (going from IDLE to SEND REGISTER WINDOW state) as this is Master state diagram and by default Master = true

SuggestedRemedy

remove Master==true from this transition

Proposed Response *Response Status* **C**

ACCEPT.
See also 67

C **56** *S* **Figure 56-21** *P* **156** *L* **#** **340**

Khansari, Masoud — Centillium Communic

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

Transition from "CHECK DESTRUCT ID" to "IDLE" state should read as "false" and not "else".

SuggestedRemedy

Make the rquired changes

Proposed Response *Response Status* **C**

ACCEPT.
T not E

C **56** *S* **Figure 56-21** *P* **156** *L* **20** **#** **122**

Ochiai, Koji — NTT corporation

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

In Fig.56-21.
The "OMP.indication(...requested_ports...) is an erroneous description.

SuggestedRemedy

The "requested_ports" does not need,thus it is to be deleted.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor will clean operands in interfaces in diagrams and text

C **56** *S* **Figure 56-21** *P* **156** *L* **30** **#** **137**

Ochiai, Koji — NTT corporation

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

Comparing with Draft 1.1,the "first_flag" is disappeared within the OMP.indication(...).

SuggestedRemedy

The exact description is "OMP.indication(DA,SA,opcode=RESISTER_REQ,first_flag,deallocate_flag,...)".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Fix usage of flags in diagram 56-21 also in line 21

C **56** *S* **Figure 56-21** *P* **156** *L* **9** **#** **397**

Tae-Whan Yoo — ETRI

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

The process to send GATE and the process to check if the Register_Ack is received in time with the time-window allowed by the GATE are not shown in Figure 56-21.

SuggestedRemedy

Modify the state diagram as shown in yoo_cmts_1_0103.pdf.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Propose to separate diagram to two sub diagrams:
1. gate setup for discovery and register_ack transmission
2. dealing with discovery protocol elements
this will simplify state diagrams and allow setup and checking as required by comment

C **56** *S* **Figure 56-22** *P* **155** *L* *#* **69**

Kramer, Glen Teknovus

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

transition from TURN LASER ON to START TX should occur on "timeout(IDLE_timer)"

SuggestedRemedy

replace "UCT" by "timeout(IDLE_timer)"

Proposed Response *Response Status* **C**

ACCEPT.
See 431

C **56** *S* **Figure 56-22** *P* **155** *L* *#* **74**

Kramer, Glen Teknovus

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

default ID (LLID) should not be the same as broadcast ID (LLID).
Since only one LLID is allowed per ONU, it can be either broadcast or unicast LLID.

SuggestedRemedy

Suggested the following changes:
(a) when ONU boots up, it automatically initializes its LLID to default LLID. After discovery, when a unicast (or broadcast) LLID is assigned, the ONU will deallocate its default LLID. If ONU is deregistered or re-booted, it will go to default LLID.

This mechanism will ensure that only one LLID existes per ONU.

Proposed Response *Response Status* **C**

REJECT.
Comment suggest model where OLT has N+2 LLID: N for ONUs, 1 for SCB, 1 for registration.
This is not required, and differs from baseline N+1 model.
At ONU, support for broadcast is always available, and LLID registered in discovery is private to ONU.

See 313

C **56** *S* **Figure 56-22** *P* **155** *L* *#* **75**

Kramer, Glen Teknovus

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

What does it mean if after "is_unicast(DA)==true" we have "me == broadcast_ID" also true? That makes no sense.

SuggestedRemedy

Remove "UNICAST DISCOVERY" state from Figure 56-22.
MA_CONTROL.indication(reset) is a duplicate of MA_CONTROL.indication(deregister) and is already indicated to the client.

check "me==broadcast ID" doesn't make sense since ther is only one LLID per ONU.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Check "me==broadcast ID" is intended to guard against deallocation of broadcast LLID, as this MAC always exist for subsequent re-registration.
Agree that UNICAST-discovery and Deregister-flag in REGISTER message are redundant.
Suggest use unicast only to skip random delay process.

C **56** *S* **Figure 56-22** *P* **155** *L* *#* **70**

Kramer, Glen Teknovus

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

grant_window timer is not used

SuggestedRemedy

Remove "set_timer(grant_window, register_req_length)" from START TX state

Proposed Response *Response Status* **C**

ACCEPT.
It is possible to block progress of the state machine by pending on the completion of the OMP.request primitive.
Therefore there is no need to setup a timer and wait for the timer expiration.
Editor would remove use of grant_window timer.

See also 342

C **56** *S* **Figure 56-22** *P* **157** *L* *#* **341**

Khansari, Masoud Centillium Communic

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

Transition from "TURN LASER ON" to "START TX" state should happen when IDLE_timer expires (timeout(IDLE_timer)) and not UCT.

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

ACCEPT.
See 69

C **56** *S* **Figure 56-22** *P* **157** *L* *#* **343**

Khansari, Masoud Centillium Communic

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

From ONU discovery state diagram is not clear what happens if "wait_for_register_msg" expires before ONU actually receives a REGISTER message from OLT.

SuggestedRemedy

Add a transition from REGISTERING state when timeout(wait_for_register_mag) happens. This needs to be fixed before going to working group ballet.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
On timeout, an additional register_req should be sent, as well as an indication given to the client.
Use of intermediate state can be used.
See diagram.

C **56** *S* **Figure 56-22** *P* **157** *L* *#* **342**

Khansari, Masoud Centillium Communic

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

Transition from "REGISTER REQ" to "STOP TX" should happen when grant_window timer expires (timeout(grant_window)).

SuggestedRemedy

Make the required changes

Proposed Response *Response Status* **C**

REJECT.
See 70 for alternative solution

C **56** *S* **Figure 56-22** *P* **157** *L* *#* **354**

Khansari, Masoud Centillium Communic

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

Transition from "NACK" to "WAIT" state is not defined.

SuggestedRemedy

Define this transition

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
UCT transition is required

C **56** *S* **Figure 56-22** *P* **157** *L* **12** *#* **139**

Ochiai, Koji NTT corporation

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

In Fig.56-22.
Between "RESISTERING" block and "CHECK UNICAST" block.
The "MA_CONTROL.request(...)" is an erroneous description.

SuggestedRemedy

The "OMP.indication(...)" is an exact description.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor will clean operands in interfaces in diagrams and text

C **56** *S* **Figure 56-22** *P* **157** *L* **14** *#* **140**

Ochiai, Koji NTT corporation

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

In Fig.56-22.
Between "WAIT" block and "RESISTORING" block.
The "MA_CONTROL.request(register)" is an erroneous description.

SuggestedRemedy

The "MA_CONTROL.request(registration)" is an exact description.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor will clean operands in interfaces in diagrams and text

C **56** *S* **Figure 56-22** *P* **157** *L* **34** *#* **138**

Ochiai, Koji NTT corporation

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

In Fig.56-22.
At the "RESISTER_REQ" block.
There are no description about flag of the REGISTER_REQ MPCPDU in the "OMP.request(...)".

SuggestedRemedy

It might be the "OMP.request(RESISTER=REQ, resistration == true, Capability, Capability_vector)"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor will clean operands in interfaces in diagrams and text

C **56** *S* **Figure 56-23** *P* **156** *L* *#* **72**
Kramer, Glen Teknovus

Comment Type **T** *Comment Status* **A**
remove_timer(wait_for_register_mag) is already removed in ARRIVING REGISTER state

SuggestedRemedy
remove "remove_timer(wait_for_register_mag)" from ZERO STATE

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

C **56** *S* **Figure 56-23** *P* **156** *L* *#* **73**
Kramer, Glen Teknovus

Comment Type **T** *Comment Status* **A**
Transitions from REGISTERED WAIT should be MA_CONTROL.indications(...), not MA_CONTROL.requests(...)

SuggestedRemedy
change "request" to "inication"

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Two conditions exist at registered wait:
1. MAC Control Client at ONU decides to leave the network.
This is performed by MA_CONTROL.request
2. OLT decides to de-register ONU, this is currently performed by a unicast-discovery sent.

Propose to remove unicast-discovery based on comment 75, would change 2 to read:
2. OLT decides to de-register ONU. This is performed by
MA_CONTROL.indication(register, deregister_flag=true)
Subsequently, transitions should occur based on both .indication and .request.

C **56** *S* **Figure 56-23** *P* **157** *L* **30** *#* **517**
Maislos, Ariel Passave

Comment Type **T** *Comment Status* **A**
Figure has orphan states

SuggestedRemedy
Unify with Figure 56-22 for a more coherent diagram, and the resplit if necessary to two diagrams along alternate split lines in order to make diagram more legible.

Proposed Response *Response Status* **C**
ACCEPT.
See also 174, 68

C **56** *S* **Figure 56-26** *P* **160** *L* *#* **77**
Kramer, Glen Teknovus

Comment Type **T** *Comment Status* **A**
When ONU is just registered, the periodic REPORT transmission will not start until MAC Control Client generates first REPORT.

SuggestedRemedy
Consider moving "periodic timer" to OMP multiplexor, so that timer is set/reset on every MPCP message, not on REPORTs only.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Transition based on registered flag solves issue.
See solution in attached diagram.

C **56** *S* **Figure 56-26** *P* **160** *L* *#* **76**
Kramer, Glen Teknovus

Comment Type **T** *Comment Status* **A**
This diagrame for ONU only. Remove the check "Master == false" in PERIODIC TRANSMISSION state

SuggestedRemedy
Remove the check "Master == false" in PERIODIC TRANSMISSION state

Proposed Response *Response Status* **C**
ACCEPT.
Check for Master variable should be removed from all OLT only or ONU only diagrams.
A note should be added that selection of OLT/ONU diagram is based on contents of Master register.
See 67

C **56** *S* **Figure 56-26** *P* **162** *L* *#* **345**
Khansari, Masoud Centillium Communic

Comment Type **E** *Comment Status* **A**
In "PERIODIC TRANSMISSION" state, it is checked to see if "Master == false". As this is ONU report processing state diagram there is not need to check to this.

SuggestedRemedy
Make the required changes

Proposed Response *Response Status* **C**
ACCEPT.
T not E

C **56** *S* **Figure 56-26** *P* **162** *L* *#* **346**

Khansari, Masoud — Centillium Communic

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

In "SEND REPORT" state before starting a new timer "periodic_timer", the old running timer should be removed.

SuggestedRemedy

Define remove_timer() function and remove periodic_timer before starting a new one.

Proposed Response *Response Status* **C**

REJECT.
No need to remove timer before reseting.
See 327

C **56** *S* **Figure 56-27** *P* **163** *L* **19** *#* **142**

Ochiai, Koji — NTT corporation

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

In Fig.56-27.
There is a description about MA_CONTROL.requeste(create_discovery_window).

SuggestedRemedy

It does not need in Fig.56-27.

Proposed Response *Response Status* **C**

ACCEPT.
See 176

C **56** *S* **Figure 56-28** *P* **165** *L* *#* **78**

Kramer, Glen — Teknovus

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

If REPORTs in ONU have periodic timer, so should the GATEs in the OLT. Otherwise, if REPORT timeouts, the protocol wouldn't know whether it si due to ONU being down, or due to the OLT not issuing the GATE in a timely manner.

SuggestedRemedy

Add periodic timer to Figure 56-28. If timeout expires without client requesting sending the gate, a default GATE should be generated with a minimum grant size (for REPORT only).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Automatic issueing of GATEs is not possible with real grant, as allocation is responsibility of higher layer
Propose to add auto sending of null gate on timer expiration in OLT identical to report transmission in ONU.

C **56** *S* **Figure 56-29** *P* **166** *L* *#* **80**

Kramer, Glen — Teknovus

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

GATE processing diagram currently includes two distinct processes: GATE message processing and grant processing.

SuggestedRemedy

a) Suggest differentiating "GATE processing" from "grant processing"
"GATE processing" is parsing of GATE messages, verifying grants, and creating sorted list of grants. "Grant processing" is enabling and disabling transmissions at right times.

(b) Suggest moving "grant processing" from GATE processing state diagram to ONU Multiplexor state diagram. Control Multiplexor will be responsible for taking next grant from the (already) sorted list and verifying that frames fit in the grant before transmitting them.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See 432

C **56** *S* **Figure 56-29** *P* **166** *L* *#* **79**

Kramer, Glen — Teknovus

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

Local time is represented by a 32-bit counter. The value of grant start can be smaller than the value of local_time if the grant starts after the counter wraps around.

SuggestedRemedy

Remove check for (start[i] > local_time)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor will add function for comparison under wrap arround conditions to be used instead of > symbol.

C **56** *S* **Figure 56-29** *P* **168** *L* *#* **348**

Khansari, Masoud — Centillium Communic

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

Discovery gate messages are not sent to GATE processing block but are sent to Discovery processing block as such there is no need to check if the received GATE message is discovery or not (e.g. as is done in PROGRAM state).

SuggestedRemedy

Remove discovery variable and do not check if the GATE message is discovery or not. When the GATE message gets to gate processing block, it is not a discovery message.

Proposed Response *Response Status* **C**

ACCEPT.
See 432

C **56** *S* **Figure 56-29** *P* **168** *L* **30** # **145**

Ochiai, Koji NTT corporation

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

In Fig.56-29.
At the "SORT" block.
The "time=min(...,max(...),0)" semms be a typo.

SuggestedRemedy

The "time=min(...,max(...,0))" is an exact description.

Proposed Response *Response Status* **C**

ACCEPT.
T not E

C **56** *S* **Figure 56-29** *P* **168** *L* **8** # **144**

Ochiai, Koji NTT corporation

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

In Fig.56-29.
At the "TURN LASER ON" block.
The "if current_grant..." belonged to the "PROGRAM" block in the Draft 1.1.
Why was it moved here?

SuggestedRemedy

It might belong to "PROGRAM" block instead of "TURN LASER ON" block as same as the Draft 1.1.

Proposed Response *Response Status* **C**

REJECT.
Function was moved to this block so that force report may be activated per grant, to issue report for that grant.

C **56** *S* **Figure 56-32** *P* **173** *L* **24** # **118**

Ochiai, Koji NTT corporation

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

In Fig.56-32.
On the left arrow.
The "...by Number of requests" is an erroneous description.

SuggestedRemedy

The "...by Number of queue sets" is an exact description.

Proposed Response *Response Status* **C**

ACCEPT.
See 92

C **56** *S* **Figure 56-33** *P* **175** *L* **26** # **120**

Ochiai, Koji NTT corporation

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

In Fig.56-33.
The "Pad/Reserved 2" is an erroneous description.

SuggestedRemedy

The "2" might be a typo.

Proposed Response *Response Status* **C**

ACCEPT.
Duplicate 121

C **56** *S* **Figure 56-35** *P* **179** *L* **24** # **121**

Ochiai, Koji NTT corporation

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

In Fig.56-35.
The "Pad/Reserved 2" is an erroneous description.

SuggestedRemedy

The "2" might be a typo.

Proposed Response *Response Status* **C**

ACCEPT.
Duplicate 120

C **56** *S* **Figure 56-4** *P* **126** *L* **41** # **510**

Maislos, Ariel Passave

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

internal interfaces are not defined for OMP block

SuggestedRemedy

use XXX:MA_DATA.indication and XXX:MA_DATA.request primitives to signal transfr of frames internally between the different sub blocks.
Where XXX identifies the unique link between the subblocks.
Using GATE, DISCOVERY, REPORT for for interaction with OMP block, and DSG for interaction from GATE to DISCOVERY blocks.
Also correct in other figures and text.
See maislos_cmts_2_0103.pdf for one correction.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Clean MA_CONTROL .indication and .request as in maislos_cmts_2_0103.pdf.
Functions to be used internally inside Multi-point MAC Control are also to be defined.

C **56** *S* **Figure 56-4** *P* **127** *L* # **309**

Khansari, Masoud Centillium Communic

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

"Multiplexing MAC Control instance n" should read "Multipoint MAC Control instance n"

SuggestedRemedy

Make the changes

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See kramer_cmts_3_0103.pdf for exact solution

C **56** *S* **Figure 56-4** *P* **127** *L* **35** # **386**

Tae-Whan Yoo ETRI

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

The arrow between the control parser and the MAC layer in Figure 56-4 is not correctly drawn.

SuggestedRemedy

The direction of the arrow mentioned in the comment should be reversed.

Proposed Response *Response Status* **C**

REJECT.
See 416

C **56** *S* **Figure 56-4** *P* **127** *L* **35** # **127**

Ochiai, Koji NTT corporation

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

In Figure 56-4.
The direcrion of the "RecieveFrame(...)" arrow between the "Control Parser" block and the "MAC" block is not correct.

SuggestedRemedy

The direction of the arrow might be opposite.

Proposed Response *Response Status* **C**

REJECT.
See 416

C **56** *S* **Figure 56-4** *P* **128** *L* **9** # **387**

Tae-Whan Yoo ETRI

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

The block named Multi-Point is not in Fig 56-4.

SuggestedRemedy

It is recommended that the name of "Multiplexing MAC Control instance" be changed to "Multi-Point MAC Control instnace".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See kramer_cmts_3_0103.pdf for exact solution

C **56** *S* **Figure 56-5** *P* **128** *L* # **313**

Khansari, Masoud Centillium Communic

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

The relationship of the port associated with Single Copy Broadcast "SCB" in the Mutipoint MAC Control layer is not clear. I beleive there is a separate MAC/port associated with SCB. Do this MAC also interact with MAC Control layer and there is a separate instantiation of OMP block for it or not?

Same also goes to Figure 56-6 (ONU MAC Control)

In general, the description of SCB in this draft is not clear and needs considerable improvement.

SuggestedRemedy

Have a separate subsection describing SCB and its relation with MAC Control layer and specifically OMP block

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
SCB is the same port in the ONU, per the baseline document.
Editor will work with volunteer to draft section on SCB under "Compatibility Requirements"

C **56** *S* **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

C **56** *S* **Figure 56-8** *P* **132** *L* **19** # **392**

Tae-Whan Yoo — ETRI

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

The direction of the arrow indicating Receive_Frame in Figure 56-8 is wrong again.

SuggestedRemedy

The direction of the arrows indicating the Receive_Frame should be reversed, or just erase it since it is not in transmit path.

Proposed Response *Response Status* **C**

REJECT.
See 416

C **56** *S* **Figure 56-9** *P* **131** *L* # **61**

Kramer, Glen — Teknovus

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

Comment #735 from Kauai meeting prescribed particular modifications to Multiplexing Control state diagram. However, the actual modifications are different.

SuggestedRemedy

Revert the diagram to the accepted form. If additional modifications are necessary, additional comments may be submitted.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor will revert diagram to accepted form plus an changes resulting form comments issued.

C **56** *S* **Figure 56-9** *P* **133** *L* # **315**

Khansari, Masoud — Centillium Communic

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

Variable transmit_in_progress[j] is not defined in 56.2.2.1.2 Section but used in the state diagram

SuggestedRemedy

Define transmit_in_progress[j] in subclause 56.2.2.1.2

Proposed Response *Response Status* **C**

ACCEPT.
See 414

C **56** *S* **Figure 56-9** *P* **133** *L* # **316**

Khansari, Masoud — Centillium Communic

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

Checking multipoint_transmission_in_progress variable to be flase when going from "INIT" state to "SELECT" state is redundant. This is the case since only one frame is transmitted at a time and when entering INIT state "multipoint_transmission_in_progress" is always flase.

SuggestedRemedy

Remove chekcing "multipoint_transmission_in_progress" when going from INIT to SELECT state.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Multipoint_transmission_in_progress is reset by the MAC Control instance when transmission in the instance is finished. It is defined as OR(transmission_in_progress[i])

As meny comments raise this issue, Editor suggests that for clarity,
use of multipoint_transmission_in_progress be dropped, and
OR(transmission_in_progress[i]) be used instead.
This will reduce commenting on this issue in the future.

C **56** *S* **Figure56-16** *P* **134** *L* **5** # **99104**

OGURA, Yasuo — NTT

Comment Type **T** *Comment Status* **A** *discovery D1.1 #703*

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* **C**

ACCEPT.
Updated diagrams will fix and clarify.

C **56** *S* **Table 56-4** *P* **174** *L* *#* **352**
Khansari, Masoud Centillium Communic

Comment Type **E** *Comment Status* **A**
Use the term "Deallocate" instead "Deallocate" to be consistent with the rest of the draft

SuggestedRemedy
Make the required changes

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.
Does commentor mean Deallocate instead of destroy?

C **56** *S* **Table 56-4** *P* **174** *L* **8** *#* **119**
Ochiai, Koji NTT corporation

Comment Type **E** *Comment Status* **A**
In Table 56-4.
At the value "1" row.
The "initial registration" is an erroneous description.

SuggestedRemedy
The just "registration" seems to be an exact description.

Proposed Response *Response Status* **C**
ACCEPT.
See 178

C **57** *S* *P* *L* *#* **99**
Tetsuya, Yokomoto FUJITSU ACCESS LI

Comment Type **E** *Comment Status* **A**
There are 8 bit=1octet expression and 8 bit=1btye expression.

SuggestedRemedy
Should unify into 8 bit=1octet expression.

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

C **57** *S* *P* **188** *L* **18** *#* **100**
Tetsuya, Yokomoto FUJITSU ACCESS LI

Comment Type **E** *Comment Status* **A**
Spelling error: "symnol","eqauls"

SuggestedRemedy
Change to "symbol","equals"

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

C **57** *S* *P* **190** *L* **4** *#* **101**
Tetsuya, Yokomoto FUJITSU ACCESS LI

Comment Type **E** *Comment Status* **A**
Spelling error: "subayer"

SuggestedRemedy
Change to "sublayer"

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

C **57** *S* **1.3.2.2** *P* **188** *L* **19** *#* **551**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **A**
Replacing both octets of LLID with preamble octets is applicable to both the OLT and the ONU instance of this sublayer.

SuggestedRemedy
Move the last sentence of the last paragraph to its own paragraph.

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

C **57** *S* **1.3.2.2** *P* **188** *L* **9** *#* **550**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
wrong word(s)

SuggestedRemedy
Line 9 - replace both "forwarded" and "transmitted" with "transferred"
Line 19 - replace "forwarded" with "transferred"

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

C **57** *S* **2.1** *P* **18** *L* **47** # **554**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
change wording

SuggestedRemedy
Replace
"The FEC ads to the Ethernet frame additional data (parity bytes) that"
with
"The FEC appends to the Ethetner frame additional data that"

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

C **57** *S* **2.1** *P* **188** *L* **41** # **552**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **A**
What does MLM stand for?

SuggestedRemedy
Add a definition of MLM

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

Multi-longitudinal mode (MLM) lasers

C **57** *S* **2.1** *P* **188** *L* **44** # **553**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
This paragraph adds nothing to the clause.

SuggestedRemedy
Remove it

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

C **57** *S* **2.1** *P* **188** *L* **50** # **555**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
Change structure

SuggestedRemedy
Remove the last line of the 3rd paragraph.
Remove the fourth paragraph.
Append to the 3rd paragraph:
"The MAC layer performs rate adaptation, stretching the IPG to provide the necessary space at the end of the Ethernet frame for the parity bytes."

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

C **57** *S* **2.1** *P* **189** *L* **1** # **556**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
Modify the first sentence

SuggestedRemedy
Replace "coding, adds the parity bits instead of the additional IPG time, and" with "coding, replaces some of the stretched IPG with parity bytes, and"

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

C **57** *S* **2.1** *P* **189** *L* **6** # **557**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
Move and modify this paragraph

SuggestedRemedy
Move this paragraph before the previous one. Replace "PMA, with a" with "PMA and may be implemented with a"

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

C **57** *S* **2.1.** *P* **189** *L* **13** # **558**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
Modify subclause

SuggestedRemedy
Remove bullets. Add another sentence: "Additionally, 1000BASE-X PHYs operating in FEC mode and those not operating in FEC mode may still exchange packets.

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

See resolution to comment #360.

C **57** *S* **2.1.2** *P* **189** *L* **52** # **559**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
This paragraph adds nothing that hasn't already been said.

SuggestedRemedy
Remove it.

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

C **57** *S* **2.2** *P* **190** *L* **18** # **562**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
spelling/wording

SuggestedRemedy
Replace "symnol size eqauls one byte (8 bits)" with "symbol size equals one octet."

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

C **57** *S* **2.2.1** *P* **190** *L* **3** # **560**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
From section 11 of the style guide: Clauses and subclauses shall be divided into further subclauses only when there is to be more than one subclause.

SuggestedRemedy
Remove the 57.2.2.1 header.

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

C **57** *S* **2.3** *P* **190** *L* **25** # **563**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
This sentence would work better if it came as part of 57.2.3 rather than 57.2.3.1

SuggestedRemedy
Move this sentence to before 57.2.3.1 and fix spelling of "herin"

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

C **57** *S* **2.3.1** *P* **190** *L* **27** # **564**
Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **A**
It would be helpful to mention what is the first byte of the first 239 byte FEC frame

SuggestedRemedy
Replace the second sentence with "The data is partitioned into 239 symbol frames (FEC frames), with the first frame beginning with the first symbol after the /S_FEC/ ordered_set and the last frame ending with the last symbol before the /T_FEC/ ordered_set."

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

C **57** *S* **2.3.1** *P* **190** *L* **29** # **565**
Brown, Benjamin AMCC

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

SuggestedRemedy
replace "asscoiated" with "associated"

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

C **57** *S* **2.3.2** *P* **190** *L* **39** # **566**

Brown, Benjamin AMCC

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

Less buffering and latency would be required in the transmit direction if the zeros padding came at the end of the last FEC frame, rather than the beginning.

SuggestedRemedy

Replace "beginning" with "ending"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Zeros at the beginning of the frame (virtual or real) don't affect the calculation results of the encoder. Zeros at the end do affect the encoder. Keeping them at the beginning is the same as not needing to spend the time running them through the encoder at all. An implementation can simply stop at the end of the shortened frame and the results are the same.

Get notes from Lior for editorial changes.

P.188 L.12

The code is the systematic form of the code

L.15:
a is equal to 0x02H

L.19:b
A code word of the systematic code is presented by:

Where:
D(x) is the data vector - D(x)=D238X254+...+ D0X16. D238 is the first data octet coming and D0 is the last.
P(x) is the parity vector - P(x)=P15X15+...+P0. P15 is the first parity octet coming and P0 is the last.

P.188 L.39:
At a shortened frame in the length of r symbols - D0 to Dr-1 a valid data. Dr to D238 are zeros.

C **57** *S* **2.3.3** *P* **191** *L* **16** # **570**

Brown, Benjamin AMCC

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

There needs to be 2 different kinds of /T_FEC/, one for odd ending alignment and 1 for even ending alignment

SuggestedRemedy

Replace the 2 /T_FEC/ lines with:

-- /T_FEC_E/ - end of FEC coded packet with even alignment - /T/R/I/T/R/
-- /T_FEC_O/ - end of FEC coded packet with odd alignment - /T/R/R/I/T/R/

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **2.3.3** *P* **191** *L* **5** # **567**

Brown, Benjamin AMCC

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

wrong word

SuggestedRemedy

Replace "that" with "than"

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **2.3.3** *P* **191** *L* **5** # **568**

Brown, Benjamin AMCC

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

What is "d" in "d/2 errors"

SuggestedRemedy

Define "d"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #435.

C **57** *S* **2.3.3** *P* **191** *L* **9** # **569**

Brown, Benjamin AMCC

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

modify wording

SuggestedRemedy

Replace "and, when the match has less that d/2 errors, sync is considered to have been achieved" with "with fewer than d/2 errors"

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **2.4** *P* **191** *L* **28** # **572**

Brown, Benjamin AMCC

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

spelling

SuggestedRemedy

Replace "functionalit" with "functionality"

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **2.4.1** *P* **191** *L* **32** # **573**

Brown, Benjamin AMCC

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

Lots of wording changes to the paragraph

SuggestedRemedy

Replace entire paragraph with:

At transmission, the FEC sublayer receives the packets from the PCS, performs the FEC coding, appends the parity bytes in place of the stretched IPG and sends the data to the PMA. At reception, the FEC sublayer receives the data from the PMA, performs byte alignment, detects the Start FEC Framing Sequence, decodes the FEC code, correcting data where necessary and possible, replaces the parity bytes with IDLE and sends the data to the PCS.

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **57.1** *P* **182** *L* **2** # **205**

Ken, Murakami Mitsubishi Electric

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

Name of sublayer "Multiplexing MAC Control" is not suitable.
It should be consistent with Clause 56.

SuggestedRemedy

Change "Multiplexing MAC Control" to "Multipoint MAC Control".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

"Multi-Point MAC Control"

C **57** *S* **57.1.1** *P* **182** *L* **53** # **106**

Daido, Fumio Sumitomo Electric In

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

The descriptions regarding the broadcast MAC are inconsistent with clause 57 and clause 56. On line 53, page 182 in clause 57, it is stated that "In an OLT, there actually exists two MACs for each assigned LLID value: a unicast MAC and a broadcast MAC.". This sentence shows the number of the broadcast MAC is same as the number of the unicast MAC. While, on line 50, page 124 in clause 56, it is stated that "An additional MAC is instanciated to communicate to all ONUs at once", this sentence shows the number of the broadcast MAC is only one. Which sentence is correct?

And the llid parameter of the broadcast MAC should be defined correctly. In this draft the broadcast MAC uses the same value as the llid of the unicast MAC. On line 29, page 183, it is stated that "Only a MAC[j,u] and a MAC[j,b] shall share a common llid value. In this case, the ONU associated with the j can not receive the packet sent from MAC[j,b], because the received llid value matches the own llid, please refer to line 15 of page 186 as receive condition for ONU.

SuggestedRemedy

The consistent description is needed regarding the broadcast MAC. The llid value of the broadcast MAC should be modified based on the definition of the broadcast MAC.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

There are actually 2N+1 MACs:
N Unicast MACs,
N Multicast MACs
1 Broadcast MAC.

Broadcast MAC always uses all 1's LLID.
Unicast & Multicast MACs use assigned LLIDs.

C **57** *S* **57.1.1** *P* **184** *L* **51** # **357**

Khansari, Masoud Centillium Communic

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

In the text, it is mentioned at there is a separate broadcast port associated with each ONU. In other words, for N ports there are 2N ports where half of them corresponding to point-to-point and half correspond to broadcast ports.
This is in contrast with Clause 56 where there is only one broadcast port for all ONU to support Single Copy Broadcast (SCB).

SuggestedRemedy

Both in Clauses 56 and 57, SCB is not well-defined and at times ambigious. May be a separate subclause needed to clarify issues regrading SCB

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution to comment #106

C **57** *S* **57.1.2.1** *P* **185** *L* **29** # **358**

Khansari, Masoud Centillium Communic

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

All through this clause lower case is used to refer to LLID.

SuggestedRemedy

Replace all "llid" with "LLID"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

My attempt was to use uppercase when referring to the generic LLID function and to use lowercase when referring to the actual parameter passed through the MPC_LLID primitive.

Replace lowercase "llid" parameter with "logical_link_id"

Check consistency with existing parameters for underscore

C **57** *S* **57.1.3.2** *P* **186** *L* **43** # **359**

Khansari, Masoud Centillium Communic

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

In the receive path, before replacing the preamble with new fields, CRC check should be done to ensure the integrity of the peramble.

SuggestedRemedy

move (e) to (b)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This will require additional changes in the order of descriptions in 57.1.3.2.x as well as a description of the buffering required to support the CRC check first.

C **57** *S* **57.2** *P* **187** *L* **30** # **512**

Maislos, Ariel Passave

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

Efficiancy of FEC coding can be improved

SuggestedRemedy

Modify behavior of FEC to include bursting operation as described in presentation made for FEC Bursting Baseline maislos_0103.pdf

Proposed Response *Response Status* **C**

REJECT.

C **57** *S* **57.2** *P* **187** *L* **47** # **513**

Maislos, Ariel Passave

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

spurious coloration and strikethrough styles.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **57.2.1.1** *P* **187** *L* **12** # **360**

Lynskey, Eric UNH-IOL

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

Objectives need to be improved upon.

SuggestedRemedy

The following are the objectives of FEC:
a) Keep frame format compliance to 1000BASE-X PCS
b) Support optional functionality
c) Allow backwards compatibility with legacy 1000BASE-X devices
d) Support BER objective of 10e-12 at PCS
e) Support BER objective of 10e-4 at FEC sublayer

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **57.2.1.2** *P* **187** *L* **22** # **361**

Lynskey, Eric UNH-IOL

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

CSMA/CS PCS is incorrect.

SuggestedRemedy

Replace sentence with: The FEC sublayer is architecturally positioned between the PCS and PMA sublayers of the Physical Layer of the ISO/IEC OSI reference model as shown in Figure 57-3.

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **57.2.2.1** *P* **188** *L* **18** # **362**

Lynskey, Eric UNH-IOL

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

Incorrect spelling of symbol, equals, and missing punctuation at end of line.

SuggestedRemedy

Replace "symnol" with symbol, "eqauls" with equals, and add period at end of sentence.

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **57.2.3.3** *P* **189** *L* **12** # **435**

Lynskey, Eric UNH-IOL

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

Requiring a non-FEC PCS to go through the False_Carrier_Sense mode to receive FEC frames may not be the best way to maintain backwards compatibility. Putting the non-FEC PCS through the FALSE_CARRIER state in order to receive a frame makes the conditions under which it may receive a frame harsher than was originally intended in Clause 36 PCS. When forced into the FALSE_CARRIER state the PCS is required to receive a /K28.5/ that doesn't have any errors before it will leave this state. This means that when receiving the pattern of /K28.5/D/S/, both the /K28.5/ and /S/ need to be received without errors before the frame will be processed.

Under normal (legacy) conditions, the PCS would receive this /K28.5/ in the IDLE_D state. This state allows for the /K28.5/ to be received with up to one bit error through the carrier_detect function. So, you could potentially still receive the frame (provided the /S/ was valid) if the /K28.5/ had an error in it.

By forcing entry into the FALSE_CARRIER state it makes it harder to receive the frame and causes traditionally ignorable errors to not allow the frame throgh.

SuggestedRemedy

Do not force the non-FEC PCS to go through the FALSE_CARRIER state. This can only be done by changing the definition of /S_FEC/. I recommend that you use:

S_FEC = /K28.4/R/K28.4/R/K28.4/R/S/ or something similar that does not force the PCS into FALSE_CARRIER.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace S_FEC with

/K28.5/D6.4/K28.5/D6.4/S/

This provides a "d" of 16 from

/K28.5/D16.2/K28.5/D16.2/S/

Other "d" to calculate:

config words, idle without S, I1, etc.

C **57** *S* **57.2.3.3** *P* **189** *L* **16** # **94**

Nitosa, koji NEC

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

"(after the parity bytes)-/T/R/I/T/R/" sould be "(before the parity bytes)-/T/R/I/T/R/"

SuggestedRemedy

See comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

There doesn't need to be different T_FECs before and after, only even and odd to correct alignment.

See resolution to comment #570.

C **57** *S* **57.2.3.3** *P* **189** *L* **16** # **436**

Lynskey, Eric UNH-IOL

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

Two /T_FEC/ code-groups are listed here. These should be renamed to differentiate the two of them and it should be made clear which one is before the parity bytes and which one is after the parity bytes, currently both are listed as before.

SuggestedRemedy

/T_FEC1/ - end of FEC coded packet (before the parity bytes)...
/T_FEC2/ - end of FEC coded packet (after the parity bytes)...

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

There doesn't need to be different T_FECs before and after, only even and odd to correct alignment.

See resolution to comment #570.

C **57** *S* **57.2.3.3** *P* **189** *L* **17** # **95**

Nitosa, koji NEC

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

Symbol "/T/D21.2/T/D21.2/I/" described in 57.2.3.3 are different from the one used in Figure57-9.

SuggestedRemedy

Use the same symbol in 57.2.3.3 and Figure57-9.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

There doesn't need to be different T_FECs before and after, only even and odd to correct alignment.

See resolution to comment #570.

C **57** *S* **57.2.3.3** *P* **189** *L* **19** # **107**

Daido, Fumio Sumitomo Electric In

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

The minimum time of inter frame gap between the STOP and the START should be defined to perform rate adaption at the MAC layer.

SuggestedRemedy

The minimum gap should be defined in claulse 57.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The minimum IPG between the STOP and START should be 96 bit times. Rate adaptation in Clause 4 should be specified to support this.

Ensure that the stretched IPG accomodates enough IDLE to regain sync after the packet has completed.

C **57** *S* **57.2.3.3** *P* **189** *L* **2** # **93**

Nitosa, koji NEC

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

"framoing" is typo.

SuggestedRemedy

"framoing"-->"framing"

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **57.2.3.3** *P* **189** *L* **5** # **363**

Lynskey, Eric — UNH-IOL

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

Need to define value for d/2. It is not clear what "d" is supposed to be. This happens in two places, line 5 and line 9.

I'm not sure what the value should be here. The marker sequence is 6 bytes long, so it takes up 60 bits on the fiber. How many of these bits to we want to allow in error? Do we want to specify this or leave it up to the implementer? I think it needs to be specified. Since I'm not sure about the value, I'll provide a starting point for discussion.

SuggestedRemedy

Specify d/2 to equal 3 errors.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution to comment #435.

C **57** *S* **57.2.4** *P* **189** *L* **27** # **206**

Ken, Murakami — Mitsubishi Electric

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

Typo

SuggestedRemedy

Change "functionalit" to "functionality".

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **57.2.4** *P* **189** *L* **28** # **364**

Lynskey, Eric — UNH-IOL

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

Spelling error

SuggestedRemedy

Replace "functionalit" with "functionality"

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **57.2.4.3.3** *P* **194** *L* **10** # **96**

Nitosa, koji — NEC

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

"btyes" is typo.

SuggestedRemedy

"btyes"-->"bytes"

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **57.2.5.2.1** *P* **171** *L* **46** # **99105**

Brown, Benjamin — AMCC

Comment Type **T** *Comment Status* **A** *D1.1 #385*

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* **U**

ACCEPT IN PRINCIPLE.

Attempt to create a figure based on suzuki_2_0901.pdf, slide 9, referencing an ITU document.

C **57** *S* **Figure 56-22** *P* **155** *L* # **71**

Kramer, Glen — Teknovus

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

what happens when "wait_for_register_msg" timer expires? There is no associated transition.

SuggestedRemedy

From "STOP TX" there should be "UCT" transition to "WAIT FOR REGISTER".
From "WAIT FOR REGISTER" there should be "timeout(wait_for_register_msg)" transition to "REGISTER" and "OMP.indication(...)" transition to "ARRIVING REGISTER"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution to comment #575

C **57** *S* **Figure 57-1** *P* **184** *L* **20** # **549**

Brown, Benjamin AMCC

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

There doesn't need to be 2 arrows from Multiplexing MAC Control to Reconciliation

SuggestedRemedy

Remove the arrow and * from the left side of this diagram
Same thing applies to Figure 57-3
Should these be combined into a single figure?

Proposed Response *Response Status* **C**

ACCEPT.

C **57** *S* **Figure 57-4** *P* **191** *L* **21** # **571**

Brown, Benjamin AMCC

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

Add /S_FEC/ and /T_FEC_x/ to figure

SuggestedRemedy

Change drawing to look something more like:

| /S_FEC/ | PREAMBLE | FRAME | FCS | /T_FEC_x/ | PARITY | /T_FEC_E/ |

Add a note to say: "Between the FCS and the PARITY fields, either /T_FEC_E/ or /T_FEC_O/ may be required. After the PARITY field, only /T_FEC_E/ is necessary."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Include changes necessary to describe I1 or I2 usage in second T_FEC.

C **57** *S* **Figure 57-6** *P* **193** *L* **5** # **574**

Brown, Benjamin AMCC

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

The state machine is much easier if this block diagram showed that all data is 8B/10B decoded first then re-encoded afterwards.

SuggestedRemedy

Move 8B/10B decoder above split to other processes.
Move 8B/10B encoded below selector.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Keep the line into the packet boundary detector coming from the 10B domain. This is how the search for the S_FEC & T_FECs work.

C **57** *S* **Figure 57-9** *P* **197** *L* **1** # **575**

Brown, Benjamin AMCC

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

The state diagrams in figures 57-9, 57-10 & 57-11 need significant work.

SuggestedRemedy

Replace figures 57-9 & 57-10 with those in brown_cmts_1_0103.pdf
I intend to bring a Figure 57-11.pdf to the January meeting but I do not have it available at this time.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Include the RX state machine, also.

C **57** *S* **Figure57-6,57-7,57-8** *P* **193** *L* # **194**

Yajima, Yusuke Hitachi Communicati

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

There are no descriptions or notes for each block diagrams in Figure57-6, 57-7, 57-8, and it is not clear how they work.

SuggestedRemedy

add descriptions or notes for Figure57-6, 57-7, 57-8 to clarify the action of each block diagrams especialy for conditions of switching selectors.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Lior will provide the editor with the descriptive text for these block diagrams.

C **58** *S* **58.1.1** *P* **200** *L* **33** # **576**

Onishi, Kazumi Oki Electric Industry

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

WDM technology is applied to 1000BASE-PX PMDs. So it is useful for readers to mention receiver operating wavelength besides transmitter operating wavelength in table58-1.

SuggestedRemedy

Insert "Nominal receiver operating wavelength" line into the table58-1. The values are as follows.
1000BASE-PX10-U: 1490nm, 1000BASE-PX10-D: 1310nm
1000BASE-PX20-U: 1490nm, 1000BASE-PX20-D: 1310nm
And harmonizing with the above, change text "Nominal operating wavelength" in 2nd line of table58-1 to "Nominal transmitter operating wavelength".

Proposed Response *Response Status* **C**

REJECT.

Receive wavelengths are specified under the receove characteristics table 58-9 in D1.2

C **58** *S* **58.13.2.2** *P* **218** *L* **54** # **191**

KOMIYA, TAKESHI MITSUBISHI ELECT

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

The P2MP system is sensitive to optical reflectioion.
The specification of less than -26dB optical reflectance is too big.

SuggestedRemedy

Change maximum discreate reflectance for single-mode connections from less than -26dB to less than -35dB.

Proposed Response *Response Status* **C**

REJECT.

A value of -26 dB is consist with 802.3z

C **58** *S* **58.2.4** *P* **184** *L* **7** # **99043**

Dawe, Piers Agilent

Comment Type **TR** *Comment Status* **A** *TIME 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* **C**

ACCEPT IN PRINCIPLE.

The commenter has agreed to close this point. Further work is in process. See comment 200

C **58** *S* **58.2.4.1.1** *P* **202** *L* **20** # **195**

Tom Murphy Infineon

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

In this and the following three tables, need to define a value for XX

SuggestedRemedy

In this and the following three tables, set XX to be -45

Proposed Response *Response Status* **C**

ACCEPT.

C **58** *S* **58.3.1** *P* **182** *L* **31** # **99106**

Tom Murphy Infineon

Comment Type **TR** *Comment Status* **A** *TIME D1.1 #909*

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* **C**

ACCEPT IN PRINCIPLE.

This comment has been resolved, see comment 298

C **58** *S* **58.3.1** *P* **204** *L* **41** # **196**

Tom Murphy Infineon

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

Need a value for the OFF power of the OLT laser

SuggestedRemedy

Set the OFF power of the OLT Tx laser to -45 dBm

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The value of -39 dBm will be included for the OLT Tx off power. The ad-hoc will examine off powers for Tx's and present information at next meeting.

C **58** *S* **58.3.1** *P* **204** *L* **41** # **198**

Tom Murphy Infineon

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

The OFF power of the ONU Tx laser can be further reduced to increase the margin between sensitivity max and SD

SuggestedRemedy

Change the ONU Tx off power from - 39 to -45 dBm

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Accept the value of -45 dBm for off power.

Tom Murphy to clarify with the protocol group what is the signal to the TRx between bursts. This will then be further discussed in the ad-hoc

---

C **58** *S* **58.3.1** *P* **204** *L* **41** # **577**

Onishi, Kazumi Oki Electric Industry

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

Since receive sensitivity of 1000BASE-PX20-D has been changed to -28dBm, average launch power of OFF tansmitter for 1000BASE-PX10-U and 1000BASE-PX20-U should be changed to -38dBm(10dB below the receive sensitivity).

SuggestedRemedy

Regarding 1000BASE-PX10-U and 1000BASE-PX20-U, change the average launch power of OFF tansmitter value to -38dBm in table58-7 and table58-11.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Value will be changed to -45 dBm as per another resolved comment

C **58** *S* **58.3.1** *P* **204** *L* **48** # **298**

Dawe, Piers Agilent

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

Ton and Toff maxima of 16 ns seem far from the most cost effective or necessary choices. If they are to be fixed (not reported as a variable in MPCP), 600 ns each (allowing overlap) has been proposed. If to be variables, the appropriate value is that needed to avoid causing a significant hit to network throughput as a new station comes on stream. Calculating this needs a view of cycle time and split. 10 us might be appropriate for a voice-oriented EPON, much greater if not voice oriented.

SuggestedRemedy

If to be fixed, change to 600 ns each (allowing overlap).
If to be variables, choose non-voice-oriented mandatory value, and value recommended for voice-oriented use.
Apply to tables 58-7 and 58-11.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Resolved per decisions made as of Jan 6th (Motion related to PON timimg parameters)

C **58** *S* **58.3.2** *P* **204** *L* **48** # **299**

Dawe, Piers Agilent

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

T_Optical_rec_recovery maximum of 50 ns seems far from the most cost effective or necessary choice. If it is to be fixed (not reported as a variable in MPCP), 400 ns has been proposed, 512 ns might simplify the MPCP logic. If to be a variable, the appropriate value is that needed to avoid causing a significant hit to network throughput as a new station comes on stream. Calculating this needs a view of cycle time and split. 10 us might be appropriate for a voice-oriented EPON, much greater if not voice oriented.

SuggestedRemedy

If to be fixed, change to 400 or 512 ns.
If to be variable, choose non-voice-oriented mandatory value, and value recommended for voice-oriented use.
Apply to tables 58-9 and 58-13.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Resolved per decisions made as of Jan 6th (Motion related to the flexible-adjustable values adopted for receiver recovery time)

C **58** *S* **58.3.2** *P* **206** *L* **52** # **200**

Tom Murphy Infineon

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

In the upstream direction, it is unclear what timing constraints exist for SD and subsequently what function it may play at a PHY or system level. Some footnote text for this table could define the timing constrains/functionality of SD

SuggestedRemedy

The following suggestion arose during the PON optics telephone conferences: In burstmode, SD should have a long time constant which spans several bursts. It may be used to prevent an OLT receiver from triggering on internal cross-talk or other noise sources. Identification of dropped ONUs would be performed at a higher level. Need to discuss appropriate text at the meeting.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

A signal detect will be present in the upstream.

Text will be added to 58.2.4 indicating that this SD may not necessarily have a response time comparable to a burst length

C **58** *S* **58.4.1** *P* **208** *L* **23** # **197**

Tom Murphy Infineon

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

Need a value for the OFF power of the OLT laser

SuggestedRemedy

Set the OFF power of the OLT Tx laser to -45 dBm

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The value of -39 dBm will be included for the OLT Tx off power. The ad-hoc will examine off powers for Tx's and present information at next meeting.

C **58** *S* **58.4.1** *P* **208** *L* **23** # **199**

Tom Murphy Infineon

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

The OFF power of the ONU Tx laser can be further reduced to increase the margin between sensitivity max and SD

SuggestedRemedy

Change the ONU Tx off power from - 39 to -45 dBm

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Accept the value of -45 dBm for off power.

Tom Murphy to clarify with the protocol group what is the signal to the TRx between bursts. This will then be further discussed in the ad-hoc

C **58** *S* **58.4.1.1** *P* **209** *L* **1** # **108**

Nojima, Kazuhiro Matsushita communi

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

The RMS spectral width in Table 58-12 and Figure 58-2 is not sufficient to achieve 1dB penalty transmission. Epsilon=0.168 can not be applied to PX20.

SuggestedRemedy

Specifications of narrower spectrum width are needed in Table 58-12 and Figure 58-2.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This issue will be addressed in the ad-hoc

C **58** *S* **58.4.2** *P* **210** *L* **47** # **201**

Tom Murphy Infineon

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

In the upstream direction, it is unclear what timing constraints exist for SD and subsequently what function it may play at a PHY or system level. Some footnote text for this table could define the timing constraints/functionality of SD

SuggestedRemedy

The following suggestion arose during the PON optics telephone conferences: In burstmode, SD should have a long time constant which spans several bursts. It may be used to prevent an OLT receiver from triggering on internal cross-talk or other noise sources. Identification of dropped ONUs would be performed at a higher level. Need to discuss appropriate text at the meeting.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

A signal detect will be present in the upstream.

Text will be added to 58.2.4 indicating that this SD may not necessarily have a response time comparable to a burst length

C **58** *S* **58.5** *P* **211** *L* **7** # **147**

Tsuji, Shinji Sumitomo Electric

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

In this clause,a PMD type represents OLT/ONU transmit part and RECEIVE part. For example, 1000BASE-PX10-D transmit characteristics are in table 58-7 and receive characteristics are in table 58-9. However, in table 58-14 PMD type 1000BASE-PX10-D represents only downstream transmission. This looks inconsistent. This table looks representing PMD layer channel characteristics.

SuggestedRemedy

Change header in table 58-14.
"PMD type" to "channel" or "PMD layer type"
"1000BASE-PX10-U" to "1000BASE-PX10 upstream"
"1000BASE-PX10-D" to "1000BASE-PX10 downstream"
"1000BASE-PX20-U" to "1000BASE-PX20 upstream"
"1000BASE-PX20-D" to "1000BASE-PX20 downstream"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace PMD type by description as column heading and use split-straddle columns per link

C **58** *S* **58.8.1** *P* **212** *L* **45** # **148**
Tsuji, Shinji — Sumitomo Electric

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

SuggestedRemedy
Modify "Table 58-m" into "Table 58-8 and Table 58-12".

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

Change will be made in next version of document

C **58** *S* **58.8.1** *P* **212** *L* **47** # **149**
Tsuji, Shinji — Sumitomo Electric

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

SuggestedRemedy
Modify "atworse" into "at worse".

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

Change will be made in next version of document

C **58** *S* **58.8.1** *P* **214** *L* **45** # **111**
Yanagisawa, Hiroki — NEC Corporation

Comment Type **T** *Comment Status* **A**
It is unclear how much chromatic dispersion penalty is expected with epsilon value of 0.115 and 0.168 respectively. 2dB penalty described in the text does not conform to the penalty allocation in Table 58-14. It is widely known that epsilon value of 0.115 gives 1dB dispersion penalty, as specified in ITU-T G.957 and Telcordia GR-253-CORE.

SuggestedRemedy
Clarify the chromatic dispersion penalty for epsilon value of 0.115 and 0.168 respectively. The relationship between Table 58-14 and the epsilon value should be also described clearly.

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

We accept that there may be discrepancies in the text. This issue will be addressed in the ad-hoc

C **58** *S* **58.8.11** *P* **213** *L* **46** # **151**
Tsuji, Shinji — Sumitomo Electric

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

SuggestedRemedy
Modify "Table 58-11" into "Table 58-13".

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

Change will be made in next version of document

C **58** *S* **58.8.14** *P* **214** *L* # **300**
Khermosh, Lior — Passave

Comment Type **T** *Comment Status* **A**
Measurments specifications for PON timing. The file "kermosh_cmts_1_0103.pdf" contains definitions of the parameters. After agreeing on that deduce test setup

SuggestedRemedy

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

This presentation will bedistributed on the reflector and discussed in the ad-hoc.

C **58** *S* **58.8.5** *P* **213** *L* **14** # **150**
Tsuji, Shinji — Sumitomo Electric

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

SuggestedRemedy
Modify "60.8.6" into "60.7.6".

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

Change will be made in next version of document

C **58** *S* **58.9.9** *P* **190** *L* *#* **99107**

Diab, Wael William — Cisco Systems

Comment Type **TR** *Comment Status* **A** *D1.1 #695*

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* **U**

ACCEPT IN PRINCIPLE.

Needs more work by the ad-hoc & look at a jitter numbes for TP1/TP2/TP3.

C **58** *S* **Table 58-11** *P* **210** *L* **28** *#* **110**

Yanagisawa, Hiroki — NEC Corporation

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

The current extinction ratio of 6dB is a burden to both ONU and OLT receiver.

SuggestedRemedy

Change Launch OMA(min) to keep the minimum amplitude equivalent to 9dB extinction ratio.

The specific changes are:
1000BASE-PX-20-D from 1.51mW to 1.95mW
1000BASE-PX-20-U from 0.76mW to 0.98mW

Proposed Response *Response Status* **C**

REJECT.

The value of ER = 6 dB was accepted at the September meeting and discussed again at the last meeting.

C **58** *S* **Table 58-14** *P* **211** *L* **2123** *#* **103**

Tetsuya, Yokomoto — FUJITSU ACCESS LI

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

There is no "Unit" of "Channel insertion loss" and " Allocation for penalties".

SuggestedRemedy

The "Unit" should be "dB".

Proposed Response *Response Status* **C**

ACCEPT.

Change will be made in next version of document

C **58** *S* **Table 58-7** *P* **206** *L* **46** *#* **109**

Yanagisawa, Hiroki — NEC Corporation

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

The current extinction ratio of 6dB is a burden to both ONU and OLT receiver.

SuggestedRemedy

Change Launch OMA(min) to keep the minimum amplitude equivalent to 9dB extinction ratio.

The specific changes are:
1000BASE-PX-10-D from 0.48mW to 0.62mW
1000BASE-PX-10-U from 0.76mW to 0.98mW

Proposed Response *Response Status* **C**

REJECT.

The value of ER = 6 dB was accepted at the September meeting and discussed again at the last meeting.

C **58** *S* **Table 58-7,58-11** *P* **205208** *L* **137** *#* **102**

Tetsuya, Yokomoto — FUJITSU ACCESS LI

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

Wavelength expresses only centre wavelength +1sigma
This expression is inadequate.

SuggestedRemedy

Change to "This represents the range of centre wavelength +/-1sigma of the rms spectral width"

Proposed Response *Response Status* **C**

ACCEPT.

Change will be made in next version of document

C **58** *S* **Table58-7,58-11** *P* **206** *L* **#** **192**

Yajima, Yusuke Hitachi Communicati

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

The spectral specification of MLM and SLM laser should be specified respectively, on assumption that the LD type(SLM or MLM) applied to each PMD is implementation choice. Furthermore, this method of definition is consistent with other existing standard such as ITU-T or Bellcore.
Why is the present definition of spectral specification based on MLM's "RMS spectral width" even for SLM?

SuggestedRemedy

add the specification of "-20dB spectral width (max)" and "Side mode suppression ratio (min)" for SLM laser togather with "RMS spectral width (max)" for MLM laser into Table58-7 and Table58-11.

Proposed Response *Response Status* **C**

REJECT.

The point is accepted that the SLM definitin is inconsisted withother standards. However, it is consistent with the scheme used in this document and the link model spreadsheet tool. This issue was discussed at the September meeting.

C **58** *S* **Table58-7,58-11** *P* **206** *L* **#** **190**

KOMIYA, TAKESHI MITSUBISHI ELECT

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

Add a specification for optical reflectance from optical distributed network to optical trasnmitter and receiver.

SuggestedRemedy

Add a specification "Minimum ORL of ODN" to OLT and ONT transmitter charactristics.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

An ORL row will be added to T58-7 and T58-11 and a value of 20 dB inserted. This change will also be made to T58-14

C **58** *S* **Table58-7,58-11** *P* **206** *L* **43** **#** **188**

KOMIYA, TAKESHI MITSUBISHI ELECT

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

Optical return loss tolerance 12dB specification is too hard.
Existing PON standards ITU_T G.983.1 specified optical return loss tolerance(max) is 15dB.

SuggestedRemedy

Change optical transmitter input reflected power tolerance value from 12dB to 15dB.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Value will be changes to 15 dB

C **58** *S* **Table58-7,58-11** *P* **206** *L* **43** **#** **187**

KOMIYA, TAKESHI MITSUBISHI ELECT

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

An extinction ratio 6dB(Min) is too hard specification for receive sensitivity.
Receiver sensitivity degradation from infinite extinction ratio to 6dB is about 2.2dB.

SuggestedRemedy

Change Extinction ratio values from 6dB to 10dB.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The value of ER = 6 dB was accepted at the September meeting and discussed again at the last meeting. However, the ad-hoc will revisit the OMA-ER tradeoff

C **58** *S* **Table58-9,58-13** *P* **208** *L* **#** **189**

KOMIYA, TAKESHI MITSUBISHI ELECT

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

We can't estimate the reflected optical power into receiver from connector and PMD return loss specification.

SuggestedRemedy

Add a specification for "tolerance to the reflected optical power" to OLT and ONU receive characteristics.

Proposed Response *Response Status* **C**

REJECT.

This topic was discussed at the last meeting where it was emphasised that the link model spreadsheet used to determine the optical parameters includes effects arising through back reflections, i.e., interferometric penalties. The connector and PMD discrete reflectances are also specified.

C **58** *S* **Table58-9,58-13** *P* **208** *L* *#* **193**
Yajima, Yusuke Hitachi Communicati

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

The specification of "Receiver Reflectance" in Table58-9 and 58-13 should specify the "maximum" reflectance of equipment, measured at receiver wavelength.

SuggestedRemedy

Replace "Receiver Reflectance (min)" with "Receiver Reflectance (max)".

Proposed Response *Response Status* **C**

ACCEPT.

Change will be made in next version of the document

Ensure consistancy across all clauses (Max and minus value)

C **59** *S* **1.4** *P* **221** *L* *#* **278**
Dawe, Piers Agilent

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

What's Coupled Power Ratio?

SuggestedRemedy

Write a definition to go in 1.4.

Proposed Response *Response Status* **C**

ACCEPT.

We have now decided to remove CPR so there is no need to define it; see comment 660

C **59** *S* **59** *P* **224** *L* **14** *#* **652**
Thatcher, Jonathan World Wide Packets

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

Most all tables in C59 need to have the data in the columns horizontally centered.

SuggestedRemedy

Center text in cells, as appropriate.

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.1** *P* **224** *L* **17** *#* **653**
Thatcher, Jonathan World Wide Packets

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

The nominal wavelength (1310, 1300) simply cannot change based on the fiber type.

SuggestedRemedy

Change 1300 to 1310

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.1** *P* **224** *L* **17** *#* **654**
Thatcher, Jonathan World Wide Packets

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

BX10-D wavelength in T 59-1 and T 59-8 do not agree.

These tables are redundant.

SuggestedRemedy

Ideally, combine tables into one. Correct discrepency.
Else, correct discrepency and label T 59-8 as informative.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

In table 59-8, change the title "Nominal wavelength" to " Measurement wavelength for Fiber" This also applies to clause 58 and 60

C **59** *S* **59.1** *P* **224** *L* **21** *#* **655**
Thatcher, Jonathan World Wide Packets

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

Add row in table 59-1 for number of fibers

SuggestedRemedy

Per comment

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Ensure consistancy between tables 58-1, 59-1 and 60-1

C **59** *S* **59.1** *P* **224** *L* **4** # **651**
Thatcher, Jonathan World Wide Packets

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

The way the "(including MDI)" is situated in the sentence, it does not cover both PMD types.

SuggestedRemedy

Change sentence to:

"This clause specifies the... and the 1000BASE-BX10 PMD and baseband medium for single-mode fiber. The Media Dependent Interface (MDI) is described. In order to..."

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.1.1** *P* **224** *L* **24** # **656**
Thatcher, Jonathan World Wide Packets

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

Goals and Objectives should be removed prior to final publication.

SuggestedRemedy

Add editors note box indicating that this subclause will be removed during final publication.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Also applies to clauses 58 and 60 (see comment 280)

C **59** *S* **59.12** *P* **239** *L* **3** # **671**
Thatcher, Jonathan World Wide Packets

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

Top figure in F 59-7 shows patchcord on left, jumper on right.

SuggestedRemedy

Show offset patchcord on both sides of channel

Proposed Response *Response Status* **C**

ACCEPT.

Figure to be revised with Tx on the left and Rx on the right . Tx and Rx to be added to PMD box

C **59** *S* **59.12.1** *P* **239** *L* **41** # **672**
Thatcher, Jonathan World Wide Packets

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

Related to T59-13 and text on p240, line 28.

As best as I can tell, there is no place where the fiber plant is specified, absolutly.

The type is specified in 59.12.1, but qualified by an informative table. Text on p240 would indicate that T59-13 is manditory.

SuggestedRemedy

Need clean, and consistent way to specify the plant. Can't see why T 59-3 is informative.

Don't we want to say that fibers must meet or exceed the specifications in T 59-13 per text....

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace "with the exceptions" with "as" in 59.12.1

Ensure consistency for clauses 58 and 60

Ensure that there is "Shall-statement" pointing to this table
(This may be located where the fibre is specified. See text is Cl 60.9)

See comment 655

C **59** *S* **59.12.2.2** *P* **238** *L* **35** # **295**
Dawe, Piers Agilent

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

Consolidate the terminology. Mention splices. Insert 'less'.

SuggestedRemedy

Title: change 'Connection return loss' to 'Maximum discrete reflectance'.
Change 'reflectance for multi-mode connections ' to 'reflectance of e.g. a connection or splice for multimode fiber', similarly for single mode.
Insert 'less' before 'than'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Title will be changed as noted; text to remain as is with "...be less" added in 2 places

C **59** *S* **59.12.3** *P* **240** *L* **50** # **673**
Thatcher, Jonathan World Wide Packets

Comment Type **E** *Comment Status* **A**
use of "of: (a)" not required since there is only one item in the list.

SuggestedRemedy
Remove colon, line return, and "(a)"

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

C **59** *S* **59.12.4** *P* **241** *L* **1** # **674**
Thatcher, Jonathan World Wide Packets

Comment Type **T** *Comment Status* **A**
This subclause should also be removed in final draft.

SuggestedRemedy
Add editors note indicating that this subclause will be replaced with a reference to clause 38 at final publication.

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

After removing text insert reference to clause 38 and include text to reflect changes between the removed text and existing text

C **59** *S* **59.2.4** *P* **224** *L* **14** # **282**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
Triplicate calls to table 59-2 can be simplified.

SuggestedRemedy
Line 14; delete 'Table 59-2- for'.
Line 28: delete the sentence.

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

C **59** *S* **59.2.4** *P* **224** *L* **39** # **284**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **A**
Wish to liberalise the lower limit for signal detect threshold, to simplify the use of sensitive receivers and to move towards consistency across different PMD types which could be connected to the same fibres.
It would benefit the reader to collect all normative receiver specs in one table.
We do not wish to create operational problems with legacy transmitters. Presumably there aren't any for 1000BASE-BX10.

SuggestedRemedy
Add new rows to tables 59-5 and 59-7 'Signal detect threshold (min)'. For table 59-7, use value of -45 dBm. For 1000BASE-LX10, take advice from UNHIOL and choose an appropriate value below -30 dBm and not less than -45 dbm. Change entry in table 59-2 to 'Input optical power <= limit in Signal detect threshold (min) in Table 59-5 or Table 59-7 as appropriate'.

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

For Table 59-7 and Table 59-5 use value of -45 dBm

C **59** *S* **59.2.4** *P* **224** *L* **40** # **283**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
Input_optical_power isn't a real variable, just ordinary words.

SuggestedRemedy
Replace the four underscores in line 40 with spaces. Also, take out the unnecessary line feeds in the table and resize it.

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

C **59** *S* **59.2.4** *P* **226** *L* **13** # **658**
Thatcher, Jonathan World Wide Packets

Comment Type **E** *Comment Status* **A** *Ref 282*
Sentence on line 13 is redundant with sentence on line 28.

SuggestedRemedy
Remove one.

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

See 282

C **59** *S* **59.2.4** *P* **226** *L* **14** # **657**

Thatcher, Jonathan — World Wide Packets

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

Text: "for 1000BASE-LX10 and Table 59-2 for 1000BASE-BX" is unnecessary.

SuggestedRemedy

Remove.

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.3** *P* **226** *L* **52** # **659**

Thatcher, Jonathan — World Wide Packets

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

Need space before "according"

SuggestedRemedy

Add space.

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.3.1** *P* **225** *L* **19** # **277**

Dawe, Piers — Agilent

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

Reporting my homework on the need for a risetime spec:
The authors of clause 38 did a very good job of making the risetime, DJ and mask specs consistent, as can be found by playing with the EFM model (with low RIN).
The risetime affects use on multimode fibre; for SMF it is not needed.
For MMF, I looked at increasing the risetime and reducing the DJ, or vice versa. As would be expected, the margin at the eye corners (+/-0.125 UI) changes less than the margin at the eye centre (traces pivot on the mask corner). With a slower risetime, and lower DJ so as to keep passing the mask, the margin at the eye corners improves, and the margin at the the eye centre can be better or worse but is still adequate in the worst case I have found (550 m of 400 MHz.km, 50 um MMF). It would be very slightly worse with a -11.5 dBm, 1000BASE-LX10 transmitter without risetime spec, worst case cable, and a marginal 1000BASE-LX receiver than with a worst case 1000BASE-LX transmitter. This can be fixed remembering that we have Tx power in hand for MMF: we can change the minimum Tx power on MMF to -11 dBm still allowing enough for the offset launch patchcord's loss.
All this still allows the ISI at eye centre to exceed the limit used by 802.3z, which could be a risk if receivers are sloppy about setting their slicing level. To preserve this we could modify the mask or could impose a risetime limit for this purpose. A limit of 300 ps is suitable.

SuggestedRemedy

Change the rise/fall time spec from 0.26 ns to 300 ps or 0.30 ns.
Insert the spaces in (max,20-80%response time).
Change the Average launch power on MMF from -11.5 to -11.0 dBm.

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.3.1** *P* **225** *L* **28** # **285**

Dawe, Piers — Agilent

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

Wish to simplify the use of sensitive receivers and to move towards consistency across different PMD types which could be connected to the same fibres. To do that we should be stricter about power leakage from an 'off' transmitter. We are talking about newly built transceivers here, not old parts.

SuggestedRemedy

Change -30 to -45 here and in table 59-6.

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.3.1** *P* **225** *L* **34** # **287**

Dawe, Piers — Agilent

Comment Type **T** *Comment Status* **A** *Ref 232*

The best places for the timing offset spec that goes with the transmitter and dispersion penalty are here in the transmitter tables 60-3 and 60-6. Spec may need revision.

SuggestedRemedy

Add row : Decision timing offsets for transmitter and dispersion penalty (min) +/-65 ps.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 232

Accept suggested remedy

C **59** *S* **59.3.1** *P* **227** *L* **53** # **661**

Thatcher, Jonathan — World Wide Packets

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

It is not clear why both normative and informative values are referenced for two different values of epsilon.

SuggestedRemedy

Add text explaining the use of column 3 in table 59-4,
or, remove the column.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change text in Table 59-3 to point to middle column in epsilon table.

Add footnote to Table 59.4 with a pointer to 59.8.1

Make corresponding changes in Clause 58

C **59** *S* **59.3.1** *P* **228** *L* **29** # **662**

Thatcher, Jonathan — World Wide Packets

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

Footnote required by comment 583 of D1.1 did not make it into D1.2. See T 58-8.

SuggestedRemedy

Add it.

Proposed Response *Response Status* **C**

ACCEPT.

The corresponding footnote of 58-8 will be added to 59-4

C **59** *S* **59.3.1** *P* **27** *L* **33** # **660**

Thatcher, Jonathan — World Wide Packets

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

CPR is not needed. Agreed in D1.1 comment 844 to remove.

CPR in table 59-3, and two paragraphs following table are not needed. Specification of offset launch patchcord is sufficient.

SuggestedRemedy

Remove.

Proposed Response *Response Status* **C**

ACCEPT.

Will remove row from 59-3 and associated text

C **59** *S* **59.3.2** *P* **227** *L* **54** # **289**

Dawe, Piers — Agilent

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

Adding the jitter spec limits to receiver tables 59-5, 59-7 and 58-13:

SuggestedRemedy

Add three more rows:
'Stressed eye jitter (min) [TBD] UI pk-pk', and
'Jitter corner frequency' value 637 kHz, and
'Sinusoidal jitter limits for stressed receiver conformance test' (min, max) (values TBD).
Add notes to tables: 'c Vertical eye closure penalty and the jitter specifications are ...'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Apply to clause 58, 59 & 60 with the appropriate jitter frequency

C **59** *S* **59.4** *P* **228** *L* **38** # **663**

Thatcher, Jonathan — World Wide Packets

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

Many references are wrong. Example: in 59.4, T 59-7 (twice) and 59.14 are not correct. Also, reference on line 53. P232 L40; P232 L43...

Most likely problems exist because Framemaker's reference capability is not being used. It should not be necessary to verify these every draft!

Entire document needs to be scrubbed.

SuggestedRemedy

Use Frame's reference capability. Clean up all references.

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.5** *P* **231** *L* **8** # **664**

Thatcher, Jonathan World Wide Packets

Comment Type **T** *Comment Status* **A** *Ref 653 and 654*

Nominal wavelength cannot be both 1310 and 1300 based on fiber type. This is a PMD spec. Make this consistend at 1310; make sure it is consistent with T59-1.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 654

C **59** *S* **59.6** *P* **229** *L* **36** # **288**

Dawe, Piers Agilent

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

As these jitter specs are informative, in this context TP1-4 are not Compliance Points.

SuggestedRemedy

Change to 'Reference point', here and in table 59-10.

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.8** *P* **230** *L* **22** # **292**

Dawe, Piers Agilent

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

Not all transmitter measurements are at TP2.

SuggestedRemedy

Change 'All optical transmitter measurements shall ....' to 'All optical transmitter measurements except TDP shall ....

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.8** *P* **230** *L* **27** # **269**

Dawe, Piers Agilent

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

For each test, we mean to say that if the test were to be done as specified, the result would be as specified - not that a factory must use exactly these methods nor that 100% testing is required.

SuggestedRemedy

In each case where the present draft says 'shall be measured', change to 'shall be assured in relation to measurement procedures'. Subclauses 59.8.1 (separate comment applies), 2, 3, 6, 7, 8 (if kept as normative; needs editorial rewording to fit), 10 (this subclause has two 'shall's - needs tidying up), 13 (if kept as normative, two shalls) and 14 (if kept as normative, two shalls).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The commenter will co-ordinate an action to generate appropriate text for the relevant sections in the all three clauses

C **59** *S* **59.8.1** *P* **230** *L* **27** # **270**

Dawe, Piers — Agilent

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

Rewrite of the spectral test first paragraph 'The center wavelength and spectral width (RMS) shall be measured using an optical spectrum analyzer per ANSI/EIA/TIA-455-127 [B8]. Center wavelength and spectral width shall be measured under modulated conditions using a valid 1000BASE-X signal.'
Reasons for changes:
Reference should be normative, hence no [B8];
Avoiding the inference that a factory must use exactly these methods or that 100% testing is required;
Adding note about majority of spectrum, and
Using one 'shall' per test.
I notice we also removed 'center' - I have forgotten why.

SuggestedRemedy

Proposed revised paragraphs:
The wavelength and spectral width (RMS) shall be assured in relation to measurement procedures using an optical spectrum analyzer per ANSI/EIA/TIA-455-127, under modulated conditions using a valid 1000BASE-X signal.
NOTE: The great majority of the transmitted spectrum must fall within the operating wavelength range. The allowable range of central wavelengths is narrower than the operating wavelength range, taking the actual spectral width into account.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Rewrite the paragraph to address these point:

1 Reference should be normative, hence no [B8];
2 Adding note about majority of spectrum, and
3 Using one 'shall' per test.
4 I notice we also removed 'center'

C **59** *S* **59.8.1** *P* **232** *L* **34** # **665**

Thatcher, Jonathan — World Wide Packets

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

10-3 should be fixed to be clear that this means 10e3 using standard IEEE style.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.8.1** *P* **232** *L* **42** # **666**

Thatcher, Jonathan — World Wide Packets

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

TDP is not specified nor is it defined prior to this reference.

SuggestedRemedy

Add TDP specification and definition.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

TDP will be added to the appropriate transmit tables specifications and will be applied to Clauses 58, 59 and 60

C **59** *S* **59.8.11** *P* **234** *L* **51** # **670**

Thatcher, Jonathan — World Wide Packets

Comment Type **T** *Comment Status* **A** *Ref 291*

This test cannot be done at the system level if the implementation of test patterns in 36A are not manditory without changing the test.

Same is true for 59.8.12.

SuggestedRemedy

Pick one:
1. Make test pattern 36A.3 required or
2. Modify text to use other test patterns (e.g. frame based)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The ad-hoc will do work on selecting from the two proposed suggestions or from a pattern in clause 48

C **59** *S* **59.8.13** *P* **233** *L* **39** # **290**

Dawe, Piers Agilent

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

59.8.13 needs reworking to pick up its inputs, and 59.8.13.1 can be deleted as we can refer to 60.7.11.4 instead.

SuggestedRemedy

Replace the whole of 59.8.13 with the following:
59.8.13 Stressed receiver conformance test
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. The conformance test signal is conditioned by applying deterministic jitter and intersymbol interference. Receiver sensitivity shall be assured in relation to the measurement procedures of 60.7.11 and the specifications of the appropriate receiver Table 59-5 and Table 59-7, using the short continuous random test pattern defined in 36A.5.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Apply this remedzy to 58 and 59 but not 60

C **59** *S* **59.8.13** *P* **233** *L* **42** # **291**

Dawe, Piers Agilent

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

For the Stressed receiver conformance test, do we continue with the short continuous random test pattern defined in 36A.5, or use CRPAT or CJPAT in the newer 48A?

SuggestedRemedy

?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Same remedy as comment #670 which is still in progress

C **59** *S* **59.8.3** *P* **230** *L* **53** # **267**

Dawe, Piers Agilent

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

Let's give the reader a break. It is possible to find out what I2 is but it's painful. Table 36-3 says it's /K28.5/D16.2/. Table 36-2 says K28.5 is 001111 1010 or 110000 0101 (left most bit first I think) and Table 36-1b says D16.2
is 011011 0101 or 100100 0101. Thus we have
001111 1010 100100 0101 or 110000 0101 011011 0101 which have very similar characteristics for extinction ratio measurements and we can't control which a port will emit each time it emits a stream of idles, so we allow both. By the way, according to Cl.36, idle is not data. And we are mandating this pattern: 'is' not 'may be'.

SuggestedRemedy

Revised sentence:
This measurement is made with the node transmitting a repeating idle pattern I2. As specified in Clause 36*ref*, this is coded as /K28.5/D16.2/ which is binary 001111 1010 100100 0101 or 110000 0101 011011 0101.

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.8.3** *P* **230** *L* **54** # **268**

Dawe, Piers Agilent

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

In clause 60 we modified 'The extinction ratio is measured under fully modulated conditions with worst-case reflections.' in two respects: we have no intention of discussing partly modulated conditions, so let's not go there, and we believe that if there is a reflection issue, doing this measurement with back reflections simply makes it inaccurate. We account for reflection noise elsewhere.

SuggestedRemedy

Revised sentence:
The extinction ratio is measured with minimal back reflections into the transmitter, lower than -20 dB.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete "under fully modulated conditions" and add "into the transmitter" at the end of the sentence. Change" worst-case reflections" to "with < -20 dB reflections""

C **59** *S* **59.8.4** *P* **233** *L* **1** # **667**

Thatcher, Jonathan World Wide Packets

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

OMA is not specified, defined, or used.

In draft 1.1, we decided to remove this (see comment 841)

SuggestedRemedy

Do it.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

OMA numbers to be added to the transmitter and receiver specifications based on calculations using ER and Optical power

C **59** *S* **59.8.5** *P* **231** *L* **5** # **272**

Dawe, Piers Agilent

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

'ER' is ambiguous, sometimes it means error rate or error ratio.

SuggestedRemedy

Here and on line 9, replace 'ER' with 'extinction ratio'.

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.8.6** *P* **231** *L* **13** # **274**

Dawe, Piers Agilent

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

If we change to RIN12OMA we can make the tests more self contained and consistent, using 60.7.7 instead of referring out to FC-PH. RIN12OMA < -115 is only 1 dBe looser than the current RIN < -120, and very similar to what is allowed at 850 nm (RIN < -117). TDP spec stops implementers abusing the RIN limits, and is preferable because it can be measured on a complete equipment.
The argument for not changing is because we want to keep similarity to clause 38. But RIN_OMA is a better measure, very easy to relate to traditional RIN so test procedures need not change in practice, and would be the obvious choice for the 'greenfield' PMDs.

There is an agrument for making the RIN spec informative: the TDP test includes RIN and it's not feasible on most complete equipment.

SuggestedRemedy

Change tables 59-3 and 59-6 to 'RIN12OMA (max) -115. Change text here to: RIN12OMA shall be assured in relation to the measurement procedures of 60.7.7 using an I2 pattern where needed. This procedure describes a component test that may not be appropriate for a system level test depending on the implementation.

or 'RIN12OMA may be measured according to 60.7.7 ...' if we go the informative route.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

It is to be discussed among members of optical STF whether the normative or informative approach is to be adopted

C **59** *S* **59.8.7** *P* **231** *L* **18** # **276**

Dawe, Piers Agilent

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

Which pattern for eye mask tests? I didn't find a clear statement in clause 38 either.

SuggestedRemedy

Any valid 8B/10B? I2 looks like a reasonable choice, having a mix of run lengths.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Text will be changed to include I2 pattern

C **59** *S* **59.8.7** *P* **231** *L* **38** # **275**

Dawe, Piers — Agilent

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

Does ITU-T G.957 specify tolerances for a Gigabit test receiver?

SuggestedRemedy

Check!

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add reference to table STM16 values of B.2 after reference to G.957

Make the above change for 58 and 60 noting that the reference for Cl 60 is STM1

C **59** *S* **59.8.7** *P* **233** *L* **25** # **668**

Thatcher, Jonathan — World Wide Packets

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

Change wording "...filter have the transfer function..." to "...filter with the transfer function..."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **59.8.9** *P* **209** *L* # **99108**

Diab, Wael William — Cisco Systems

Comment Type **TR** *Comment Status* **A** *D1.1 #697*

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* **U**

ACCEPT IN PRINCIPLE.

Needs more work by the ad-hoc.

Jitter numbers remain for 1000BASEEXand BX as informaytive (with the exception of TP2 for BX).

Also, 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."

C **59** *S* **59.8.9** *P* **234** *L* **32** # **669**

Thatcher, Jonathan — World Wide Packets

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

While the chromatic effects in MMF are small, they are inherently part of the measurement. There is no value in the words "(not chromatic)".

SuggestedRemedy

Remove parenthetical statement.

Proposed Response *Response Status* **C**

REJECT.

Consider simulating chromatic dispersion as part of the transversal filter

C **59** *S* **59.9** *P* **235** *L* **44** # **294**

Dawe, Piers — Agilent

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

Not enough substance for a top level subclause.

SuggestedRemedy

Change 59.9 Environmental specifications to 59.9 Environmental, safety and labeling
Demote 59.10 PMD labelling requirements to 59.9.5

Proposed Response *Response Status* **C**

ACCEPT.

C **59** *S* **60.1** *P* **222** *L* **20** # **279**

Dawe, Piers — Agilent

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

MMF distance could be misinterpreted.

SuggestedRemedy

Change '0.55' to '0.22 to 0.55'.

Proposed Response *Response Status* **C**

REJECT.

LX is 0.55

C **59** *S* **60.1.1** *P* **222** *L* **24** # **280**

Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A** *Ref 656*

"Goals and objectives": these really apply to the project not to the items being specified. One approach would be to turn this subclause into an editorial box, to be deleted at publication. But a sentence of introduction might give the clause a better start than the brutally legalistic first paragraph.

SuggestedRemedy

Turn 59.1.1 into an editors' note.
Add introductory sentences for beginning of 59.1: The 1000BASE-LX10 and 1000BASE-BX10 PMD sublayers provide point-to-point 1000 Mb/s Ethernet connections over pairs or individual single mode fibers respectively, up to 10 km long. They complement 1000BASE-CX (shielded balanced cable, see clause 39), 1000BASE-T (twisted-pair cable, see clause 40), 1000BASE-LX (multimode fiber, see clause 38) and 1000BASE-LX (single mode or multimode fiber, see clause 38).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 656

C **59** *S* **60.1.1** *P* **250** *L* **50** # **281**

Dawe, Piers Agilent

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

We may need to insert the 'positioning' subclause here.

SuggestedRemedy

New subclause: 59.1.2 Positioning of this PMD set within the IEEE 802.3 architecture
Copy and modify fig. 52-1, 53-1 or 54-1, title 'Figure 60-1 - 1000BASE-LX10 and 1000BASE-BX10 PMDs relationship to the ISO/IEC Open Systems Interconnection (OSI) reference model and the IEEE 802.3 CSMA/CD LAN model'.
Add paragraph: 'Figure 59-1 depicts the relationships of the PMD (shown shaded) with other sublayers and the ISO/IEC Open System Interconnection (OSI) reference model.'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Apply to clause 58, 59 & 60

C **59** *S* **60.3.1** *P* **225** *L* **27** # **286**

Dawe, Piers Agilent

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

We forgot to put the Transmitter and dispersion penalty spec in the transmitter tables 59-3 and 59-6. Value may be revised by interoperability studies, present estimates are between 3 and 5 dB, with the SMF values near the lower end.

SuggestedRemedy

Add rows : Transmitter and dispersion penalty (max) (TBD) dB. Separate values for SMF and MMF, and for 1310 and 1550 nm.

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **1.3** *P* **7** *L* # **271**

Dawe, Piers Agilent

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

Add ANSI/EIA/TIA-455-127, currently [B8] of annex A, to the normative reference list.

SuggestedRemedy

per comment

Proposed Response *Response Status* **C**

ACCEPT.

Add to the list of normative references in the editor's box at the first page of Clause 60.

C **60** *S* **1.4.10** *P* **249** *L* **29** # **226**

Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A** *Ref def*

Need new definition subclauses for 100BASE-LX10 and 100BASE-BX10. I have commented against Clause 60 but we could open a short draft of adds and changes to 1.4 for next time.

SuggestedRemedy

New definitions:
1.4.m 100BASE-LX10: IEEE 802.3 Physical Layer specification for a 100 Mb/s link over two single mode optical fibers. (See IEEE 802.3 Clauses 24 and 60.)
and
1.4.n 100BASE-BX10: IEEE 802.3 Physical Layer specification for a 100 Mb/s link over one single mode optical fiber. (See IEEE 802.3 Clauses 24 and 60.)

Proposed Response *Response Status* **C**

ACCEPT.

Add to "Definitions (to be added to 1.4)" in the editors' box of Clause 60.

C **60** *S* **1.4.10** *P* **249** *L* **29** # **224**

Dawe, Piers — Agilent

Comment Type **E** *Comment Status* **A** *Ref def*

The following needs updating. I have commented against Clause 60 but we could open a short draft of adds and changes to 1.4 for next time.

'1.4.10 100BASE-FX: IEEE 802.3 Physical Layer specification for a 100 Mb/s CSMA/CD local area network over two optical fibers. (See IEEE 802.3 Clauses 24 and 26.)'

Also, because with just two fibers I think we have a bidirectional link, it's a bit grand to call it a 'network'. Higher layers build networks from the links. Nor does 100BASE-FX do CSMA/CD even if something above it may.
As I can't find a definition of 'local area network' in 802.3, and it isn't to the point, I suggest we delete that too.

SuggestedRemedy

Add 'multimode' after 'two'. Change 'CSMA/CD local area network' to 'link'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add to the editors' box in Clause 60 preamble. Reference to 00.

C **60** *S* **21.7** *P* *L* # **225**

Dawe, Piers — Agilent

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

Clause 21 '100BASE-T' says it relates to 100BASE-FX. If so it may need updating to refer to 100BASE-LX10 and 100BASE-BX10 also, in 21.1, 21.1.2 and 21.7.
'A suitable entry for Table G.5 of ISO/IEC 11801,Annex G' needs new rows, 100BASE-LX10 and 100BASE-BX10. It may need a new column (or table) for links that extend outside campuses, depending if ISO/IEC 11801 addresses this. The entries '10/125 mm MMF' don't seem right; it sounds like SMF not MMF, should have been um not mm, and I doubt that they would be referred to as '10 um' in future.

SuggestedRemedy

per comment.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add modifications to either Clause 21 or Clause 60 as appropriate.

Clause 34 needs to be ammended in a similar fashion

C **60** *S* **60** *P* **251** *L* **5** # **208**

Jonsson, Ulf — Ericsson

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

Do we need to add a new subclause called "PMD MDIO functional mapping"?

SuggestedRemedy

Add new subclause similar to "Clause 52.3 PMD MDIO functional mapping"

We maybe need to add some EFM OAM specifics?

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This could be of benefit to the reader. Perhaps the material in 60 would be informative, and the normative material remain in 22 and/or 45 - or vice versa.

C **60** *S* **60.1** *P* **250** *L* **23** # **222**

Dawe, Piers — Agilent

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

Nice table.

SuggestedRemedy

Please make the left hand column wider to fit cell on one line.

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **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.

At the November meeting the commentor asked to postpone till the next cycle

C **60** *S* **60.1.1** *P* **250** *L* **33** # **223**

Dawe, Piers Agilent

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

"Goals and objectives": these really apply to the project not to the items being specified. One approach would be to turn this subclause into an editorial box, to be deleted at publication. But a sentence of introduction might give the clause a better start than the brutally legalistic first paragraph. Note also that 100BASE-LX10 PMD and 100BASE-BX10 are the ONLY official fast Ethernet for SMF and therefore will be used in other applications as well as subscriber access.

SuggestedRemedy

Turn 60.1.1 into an editors' note.
Add introductory sentences for beginning of 60.1: The 100BASE-LX10 and 100BASE-BX10 PMD sublayers provide point-to-point 100 Mb/s Ethernet connections over pairs or individual single mode fibers respectively, up to 10 km long. They complement 100BASE-TX (twisted-pair cable, see clause 25) and 100BASE-FX (multimode fiber, see clause 26).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Keep 60.1.1 as is. Accept additional text for Clause 60.1.

C **60** *S* **60.1.2** *P* **250** *L* **50** # **227**

Dawe, Piers Agilent

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

Need to complete or remove this subclause. The suggested remedy completes it.

SuggestedRemedy

Copy and modify fig. 52-1, 53-1 or 54-1, title 'Figure 60-1 - 100BASE-LX10 and 100BASE-BX10 PMDs relationship to the ISO/IEC Open Systems
Interconnection (OSI) reference model and the IEEE 802.3 CSMA/CD LAN model'.
Add paragraph: 'Figure 60-1 depicts the relationships of the PMD (shown shaded) with other sublayers and the ISO/IEC Open System Interconnection (OSI) reference model.'

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.1.3** *P* **250** *L* **52** # **228**

Dawe, Piers Agilent

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

Need to complete or remove this subclause, eventually.

SuggestedRemedy

Add a (really slim) editor's box: 'If no text is necessary here the subclause will be removed before publication.'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add appropriate references to existing terminology and conventions in current 802.3 document, e.g. Clause 1.3, 1.4, 1.5, and Annex A.

C **60** *S* **60.1.4** *P* **250** *L* **52** # **229**

Dawe, Piers Agilent

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

Need to complete or remove this subclause, eventually. The proposed remedy attempts to complete it.

SuggestedRemedy

60.1.4 Physical Medium Dependent (PMD) sublayer service interface
The following specifies the services provided by the 100BASE-LX10 and 100BASE-BX10 PMDs. These PMD sublayer service interfaces are described in an abstract manner and do not imply any particular implementation.

The PMD Service Interface supports the exchange of NRZI encoded 4B/5B code-groups between the PMA and PMD entities. The PMD translates the serialized data of the PMA to and from signals suitable for the specified medium.

The following primitives are defined:

PMD_UNITDATA.request
PMD_UNITDATA.indicate
PMD_SIGNAL.indicate

NOTE - Primitives are described in 1.2.2.

60.1.4.1 PMD_UNITDATA.request
This primitive defines the transfer of a serial data stream from the PMA to the PMD.

60.1.4.1.1 Semantics of the service primitive
PMD_UNITDATA.request(tx_bit)
The data conveyed by PMD_UNITDATA.request is a continuous stream of bits. The tx_bit parameter can take one of two values: ONE or ZERO.

60.1.4.1.2 When generated
The PMA continuously sends the appropriate stream of bits to the PMD for transmission on the medium, at a nominal 125 MBaud signaling speed.

60.1.4.1.3 Effect of receipt
Upon receipt of this primitive, the PMD converts the specified stream of bits into the appropriate signals at the MDI.

60.1.4.2 PMD_UNITDATA.indicate
This primitive defines the transfer of data from the PMD to the PMA.

60.1.4.2.1 Semantics of the service primitive
PMD_UNITDATA.indicate(rx_bit)
The data conveyed by PMD_UNITDATA.indicate is a continuous stream of bits. The rx_bit parameter can take one of two values: ONE or ZERO.

60.1.4.2.2 When generated
The PMD continuously sends a stream of bits to the PMA corresponding to the signals received from the MDI.

60.1.4.3 PMD_SIGNAL.indicate
This primitive is generated by the PMD to indicate the status of the signal being received from the MDI.

60.1.4.3.1 Semantics of the service primitive
PMD_SIGNAL.indicate(SIGNAL_DETECT)
The SIGNAL_DETECT parameter can take on one of two values: OK or FAIL, indicating whether the PMD is detecting light at the receiver (OK) or not (FAIL). When SIGNAL_DETECT =FAIL, PMD_UNITDATA.indicate(rx_bit) is undefined.

NOTE - SIGNAL_DETECT = OK does not guarantee that PMD_UNITDATA.indicate(rx_bit) is known good. It is possible for a poor quality link to provide sufficient light for a SIGNAL_DETECT = OK indication and still not meet the error rate objective.

60.1.4.3.2 When generated
The PMD generates this primitive to indicate a change in the value of SIGNAL_DETECT. If the MDIO interface is implemented, then PMD_global_signal_detect shall be continuously set to the value of SIGNAL_DETECT.

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.10.4** *P* **274** *L* **30** # **264**

Dawe, Piers Agilent

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

Make subclause title match clause title.

SuggestedRemedy

Delete 'baseband'.

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.2.4** *P* **252** *L* **18** # **230**

Dawe, Piers Agilent

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

Input_optical_power isn't a real variable, just ordinary words.

SuggestedRemedy

Replace the underscores with spaces in lines 18 and 20.

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.3.1** *P* **253** *L* **13** # **231**
Dawe, Piers Agilent

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

We forgot to put the Transmitter and dispersion penalty spec in the transmitter table 60-3. Value may be revised by interoperability studies, present estimates are between 4 and 4.5 dB.

SuggestedRemedy

Add row : Transmitter and dispersion penalty (max) (TBD) dB.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add TDP penalty of 4.5 dB to table 60-3. Check for more interoperability and test data at upcoming meetings.

C **60** *S* **60.3.1** *P* **253** *L* **14** # **232**
Dawe, Piers Agilent

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

The best place for the timing offset spec that goes with the transmitter and dispersion penalty is here in the transmitter table 60-3. The amount of offset may be larger than previously thought, depending on the outcome of interoperability studies.

SuggestedRemedy

Add row : Decision timing offsets for transmitter and dispersion penalty (min) +/-(TBD) ns.

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.3.1** *P* **253** *L* **23** # **245**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **A** *radcliffe_optics_1_0103*

The mask dimensions may heve to be changed (here and in table 60-6) depending on the outcome of interoperability studies.

SuggestedRemedy

Progress those studies!

Proposed Response *Response Status* **C**

ACCEPT.

100M ad hoc to organize these studies. Volunteers are welcome.

The presentation radcliffe_optics_1_0103 relates to this comment.

C **60** *S* **60.3.2** *P* **253** *L* **41** # **234**
Dawe, Piers Agilent

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

Misplaced superscript.

SuggestedRemedy

Put the superscript 'a' by the description like the others, not by the value.

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.3.2** *P* **253** *L* **48** # **233**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **A** *radcliffe_optics_1_0103*

Need a stressed jitter spec.

SuggestedRemedy

Depends on the outcome of interoperability analysis.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The ad-hoc will work to generate the value

C **60** *S* **60.3.2** *P* **253** *L* **49** # **254**
Dawe, Piers Agilent

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

Adding the other jitter spec limits to receiver tables 60-4 and 60-6:

SuggestedRemedy

Add two more rows:
'Jitter corner frequency' draft value 20 kHz, but might be lower.
and
'Sinusoidal jitter limits for stressed receiver conformance test' (min, max) (values TBD)

Modify note c to say 'c Vertical eye closure penalty and the jitter specifications are ...'

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.4.1** *P* **253** *L* **41** # **235**

Dawe, Piers — Agilent

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

At the last meeting it was proposed that we change the RMS spectral width (max) to 4.6 nm but there was no time to progress this. The reasoning is that this brings max(epsilon) = max|line_rate.dispersion.length.spectral_width| = 0.115 which is the ITU-T standard limit. This PMD has good margin on 802.3ah-spec plant and the TDP spec protects from excessive MPN anyway.

SuggestedRemedy

Change the RMS spectral width (max) from 4 to 4.6 nm.

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.4.1** *P* **254** *L* # **679**

Seto, Koichiro — Hitachi Cable

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

On be half of TTC WG21, I recommend that RMS value for 100BASE-BX10-D (10km) should be 4.6nm per following caliculation from ITU-T recommendatoin;

$$\text{RMS [nm]} = \frac{0.115}{125\times10^{-6}\,[\text{Mbps}] \times 20\,[\text{ps/nm-km}] \times 10\,[\text{km}]}$$

(transmit speed) (dispersion) (distance)

SuggestedRemedy

Change RMS value for 100BASE-BX10-D from 4nm to 4.6nm.

TTC WG21 is planning to change TTC TS-1000's RMS value for 1.5nm downstream from 6.0 to 4.6nm to harmonize its specification with 10km objective of IEEE802.3ah 100BASE-BX.

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.4.1** *P* **254** *L* **29** # **236**

Dawe, Piers — Agilent

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

We forgot to put the Transmitter and dispersion penalty spec in the transmitter table 60-5. Value may be revised by interoperability studies, present estimates are between 4 and 4.5 dB.

SuggestedRemedy

Add row : Transmitter and dispersion penalty (max) (TBD) dB

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add TDP penalty of 4.5 dB to table 60-5 in next draft. Continue to check with interoperability.

C **60** *S* **60.4.1** *P* **254** *L* **30** # **237**

Dawe, Piers — Agilent

Comment Type **T** *Comment Status* **A** *radcliffe_optics_1_0103*

The best place for the timing offset spec that goes with the transmitter and dispersion penalty is here in the transmitter table 60-3. The amount of offset may be larger than previously thought, depending on the outcome of interoperability studies. Expect that value will be the same in tables 60-4 and 60-6.

SuggestedRemedy

Add row : Decision timing offsets for transmitter and dispersion penalty (min) +/-(TBD) ns.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add the row.

The 100M ad-hoc will work on generating an appropriate value

C **60** *S* **60.6** *P* **256** *L* **10** # **239**

Dawe, Piers — Agilent

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

Tidy up table 60-8 headings.

SuggestedRemedy

Delete the second 'Total jitter' and 'Deterministic jitter' headings and use 'straddle' (merge).

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.6** *P* **256** *L* **10** # **238**

Dawe, Piers Agilent

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

Move the decision timing offset info to the transmitter tables which is where they apply normatively, and this subclause is informative.

SuggestedRemedy

Delete the sentence here 'The decision timing offsets to be used in TDP assurance (60.7.9.4) are +-0.08 UI.'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The deletion of the text is conditional on the addition of the offset values to the tables as per relevant comments

C **60** *S* **60.6** *P* **256** *L* **21** # **385**

Radcliffe, Jerry Hatteras Networks

Comment Type **T** *Comment Status* **D** *radcliffe_optics_1_0103*

The Table 60-8 entries for TP2 and TP3 reference Clause 60.7.9. This clause does not define these measurements.

SuggestedRemedy

Change references to 60.7.12 for Total Jitter and 60.7.13 for Deterministic Jitter

Proposed Response *Response Status* **Z**

PROPOSED ACCEPT IN PRINCIPLE.

The entries for TP2 and TP3 are intended to refer to TDP. Could add further sentence to subclause 'Jitter measurement methods are described in 60.7.12.'

C **60** *S* **60.6** *P* **256** *L* **23** # **383**

Radcliffe, Jerry Hatteras Networks

Comment Type **T** *Comment Status* **A** *radcliffe_optics_1_0103*

In Table 60-8 the total jitter at TP4 is in excess of 50% of a bit period. This is not appropriate for single edge clock recovery. Please see radcliffe_optics_1_0103. This requires further study.

SuggestedRemedy

Replace the TP3 values with TBD

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The value at TP4 will be replaced with TBD

Insert the Editors note as suggested.

The 100M ad-hoc is expected to provide further informatin on this topic for the next meeting

C **60** *S* **60.7** *P* **256** *L* **28** # **293**

Dawe, Piers Agilent

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

Not all optical measurements are at TP2.

SuggestedRemedy

Change 'All optical measurements shall ....' to 'All optical transmitter measurements except TDP shall ....

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use the same wording as in Clause 52:

"All optical measurements shall be made through a short patch cable, between 2 and 5 meters in length, unless otherwise specified."

C **60** *S* **60.7** *P* **257** *L* **32** # **242**

Dawe, Piers Agilent

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

For each test, we mean to say that if the test were to be done as specified, the result would be as specified - not that a factory must use exactly these methods nor that 100% testing is required.

SuggestedRemedy

In each case where the present draft says 'shall be measured', change to 'shall be assured in relation to measurement procedures'. Subclauses 60.7.2, 3, 4, 8 (needs editorial rewording to fit, also this subclause has two 'shall's - needs tidying up) and 60.7.9.4 (also needs a little rewording).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The commenter will co-ordinate an action to generate appropriate text for the relevant sections in the all three clauses

C **60** *S* **60.7.1** *P* **256** *L* **34** # **273**

Dawe, Piers Agilent

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

We have omitted to specify a pattern for RIN measurement. It's the same one as for extinction ratio measurement.

SuggestedRemedy

Change end of paragraph and extend:
'this test pattern. In this clause, extinction ratio, OMA and RINxOMA are referred to the idle pattern (1010 for 4B/5B NRZI).

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.7.1.1** *P* **257** *L* **1** # **240**

Dawe, Piers Agilent

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

We can be more positive about the test pattern.

SuggestedRemedy

Change 'will result' to 'results'.

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.7.1.1** *P* **257** *L* **18** # **241**

Dawe, Piers Agilent

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

We intend to change the unbalanced payload to one which is just as unbalanced but provides a more stringent jitter test - when we have found an alternative payload. It would be good to make this clear to the readers forthwith.

SuggestedRemedy

Insert editor's note: 'It is hoped that an unbalanced payload can be found which is just as unbalanced as the example but provides a more stringent jitter test after the philosophy of 48A.5 Continuous jitter test pattern (CJPAT)'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The commenter volunteers to coordinate finding an appropriate test pattern.

C **60** *S* **60.7.11.2** *P* **267** *L* **39** # **251**

Dawe, Piers Agilent

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

Note to selves

SuggestedRemedy

Consider re-ordering this text for improved readability, and to allow numbering the equation

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Make appropriate change to have the section more readable.

C **60** *S* **60.7.11.2** *P* **268** *L* **21** # **220**

Jonsson, Ulf Ericsson

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

Remove "."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.7.11.2** *P* **268** *L* **50** # **250**

Dawe, Piers Agilent

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

Can we keep the B/ and the 5 together?

SuggestedRemedy

per comment

Proposed Response *Response Status* **C**

ACCEPT.

Keep B/5 together.

C **60** *S* **60.7.11.2** *P* **269** *L* **17** # **252**

Dawe, Piers Agilent

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

). on a line by themselves

SuggestedRemedy

Re-unite with (s

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.7.11.4** *P* **270** *L* **12** # **253**

Dawe, Piers Agilent

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

Completing the sine jitter section in a general way:

SuggestedRemedy

Extend the sentence thus: 'The range is limited by the constraints of Table 60–12 as illustrated in Figure 60-8, where f2, SJ1 and SJ2 are specified in the appropriate receiver table, e.g. Table 60-4 or Table 60-6.'

Table 60-12 frequency ranges and SJ entries become:
f < f2/100 N/A
f2/100 < f < f2 0.05*f2/f + S - 0.05
f2 < f < 10*LB SJ1 < S < SJ2

Use the following information to revise Fig 60-8. It would be nice to label the x axis too (jitter frequency).

I think Table 60-11 now becomes redundant.
Y1 = SJ1 = See 'Sinusoidal jitter limits' in appropriate receiver table (0.05 for 1000BASE-X, TBD for 100BASE-X)
Y2 = SJ2 = See 'Sinusoidal jitter limits' in appropriate receiver table (0.15 for 1000BASE-X, TBD for 100BASE-X)
Y3 = SJ3 = 5 UI
X1 = f1 = f2/100
X2 = f2 = See 'Jitter corner frequency' in appropriate receiver table
X3 = f3 = 10*LB

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Reference stressed receiver.

C **60** *S* **60.7.12** *P* **271** *L* **14** # **255**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **A**
Filling in the blanks: jitter measurements.

SuggestedRemedy
Delete 60.7.13. Change title of 60.7.12 to 'Jitter measurements (informative)

Add text:
A suitable jitter measurement method which can be modified for use at 100 or 1000 Mb/s is described in 53.8.1. 'Total jitter' is taken to be W + 14 sigma. W ('high probability jitter') and deterministic jitter are not necessarily the same, but may be similar. W may also be estimated from jitter histograms using an oscilloscope. In all cases within 100BASE-X10 and 1000BASE-X10,X20, jitter of an optical signal is measured with a test optical receiver with the receiver bandwidth specified (e.g. for eye mask conformance) for the transmitter under test concerned.

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

Copy text from Clause 53 and make appropriate modifications.

Tom Murphy to check with the chair of 802.3ah on the appropriate method of referencing test methods from other clauses

C **60** *S* **60.7.4** *P* **257** *L* **39** # **243**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **A**
We should be more definite about the pattern to be used for extinction ratio testing.

SuggestedRemedy
Change to 'may be' to 'is'.

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

Note: Check clauses 58 and 59 for this text.

C **60** *S* **60.7.5** *P* **257** *L* **51** # **210**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
Change cross reference

SuggestedRemedy
Change cross ref "Figure 52-5" to "Figure 60-2"

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

C **60** *S* **60.7.7.3** *P* **260** *L* **42** # **244**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
Unwanted comma and brackets in equation 60-7

SuggestedRemedy
Tidy up

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

C **60** *S* **60.7.8** *P* **261** *L* **2** # **381**
Radcliffe, Jerry Hatteras Networks

Comment Type **T** *Comment Status* **A** *radcliffe_optics_1_0103*
The current eye mask pattern was developed for use with double edge clock recovery. It has recently emerged that a number of vendors are using single edge clock recovery. This renders the receivers more sensitive to duty cycle distortion. It is not clear if this is an appropriate eye mask for this situation. Please see the presentation radcliffe_optics_1_0103.pdf

This situation requires further study. We need to guard against freezing this section befor the study is complete.

SuggestedRemedy
Place an editors note in this section with the following wording:

Editors Note: Further study is required to assure that the eye mask is appropriate for all forms of clock recovery.

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

Insert the Editors note as suggested.

The 100M ad-hoc is expected to provide further informatin on this topic for the next meeting

C **60** *S* **60.7.8** *P* **261** *L* **36** # **214**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
Make EFM PMD clauses self-contained.

SuggestedRemedy
Copy Figure 52-9 to Clause 60 and change cross reference.

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

C **60** *S* **60.7.8** *P* **261** *L* **38** # **246**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
Poor use of 'will'. We are telling, not predicting.

SuggestedRemedy
Change 'will extend' to 'extends'.

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

C **60** *S* **60.7.9** *P* **261** *L* **48** # **384**
Radcliffe, Jerry Hatteras Networks

Comment Type **T** *Comment Status* **R**
The section describes a test whose results are not specified for any PMD in this clause.

SuggestedRemedy
Remove section 60.7.9

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

Add transmitter and dispersion penalty spec in the transmitter tables 60-3 and 60-5.

E.g. comment 236 places these values into the clause

C **60** *S* **60.7.9** *P* **263** *L* **52** # **675**
Thatcher, Jonathan World Wide Packets

Comment Type **TR** *Comment Status* **A**
See resolution to comment 860 in D1.1. Not clear that this meets requirement specified by that comment.

SuggestedRemedy
Fix per previous agreement.

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

At present the editors wish to keep the test procedures where they are, for stability. They may be moved later. Add NOTE p262 line 7 "NOTE: Multimode fibre is not used with 100BASE-LX10 or 100BASE-BX10"

C **60** *S* **60.7.9** *P* **264** *L* **4** # **677**
Thatcher, Jonathan World Wide Packets

Comment Type **T** *Comment Status* **A**
Transversal filber should be specified.

SuggestedRemedy
Sorry, know it is missing; don't know what it should be.

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

p262. Specify it in table 59-3, 1000BASE-LX10 transmitter. The value can be found by scaling the differential delay of 55ps used in 10GBASE-S for fibre length.

The specific value will be provided by the 100 M ad-hoc

C **60** *S* **60.7.9.3** *P* **263** *L* **18** # **247**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
Can table dimensions be improved? The table is not using the full width of the text frame.

SuggestedRemedy
Make the column 'Optical return loss (max)' wider

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

C **60** *S* **60.7.9.3** *P* **263** *L* **42** # **216**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
Missed space

SuggestedRemedy
Change "-3dBe" to "-3 dBe"

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

C **60** *S* **60.7.9.3** *P* **264** *L* **3** # **217**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
Missed space

SuggestedRemedy
Change "20dB/decade" to "20 dB/decade"

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

C **60** *S* **60.7.9.3** *P* **265** *L* **43** # **676**
Thatcher, Jonathan World Wide Packets

Comment Type **TR** *Comment Status* **A**
Not clear that comment 268 of D1.1 was implemented as agreed.

SuggestedRemedy
Fix.

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

Add (electrical) to the text to be more specific

C **60** *S* **60.7.9.4** *P* **254** *L* **19** # **382**
Radcliffe, Jerry Hatteras Networks

Comment Type **E** *Comment Status* **A**
Step a) calls out the wrong figure

SuggestedRemedy
Change reference to Figure 60-5

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

C **60** *S* **60.7.9.4** *P* **264** *L* **19** # **218**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
Change cross-reference

SuggestedRemedy
Change cross ref "Figure 52-12" to "Figure 60-5"

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

C **60** *S* **60.7.9.5** *P* **264** *L* **36** # **248**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
Words of caution

SuggestedRemedy
Change 'can be estimated' to 'can in some cases be estimated'

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

C **60** *S* **60.7.9.5** *P* **264** *L* **36** # **249**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
We can't apply SJ at TP3. Have to change the order of the words.

SuggestedRemedy
Change 'waveforms including pulse width shrinkage, power, simulated channel penalties, and a swept frequency sinusoidal jitter contribution applied at TP3.' to 'waveforms at TP3 including pulse width shrinkage, power, simulated channel penalties, and a swept frequency sinusoidal jitter contribution.'

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

This comment is towards 60.7.11.2, pg. 267, ln. 42 and the suggested change should be done here.

C **60** *S* **60.8.3** *P* **271** *L* **43** # **256**

Dawe, Piers — Agilent

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

I'm uncomfortable about this sentence, which sounds like motherhood and apple pie: 'Sound installation practice, as defined by applicable local codes and regulations, shall be followed in every instance in which such practice is applicable.' But it is not just a statement of good practice (as seen by these varied governments) but a blank cheque to any regional power which wishes to interfere in the installation business, and whose regulations and motives may not be what we expect them to be. In short, it's not our business.

SuggestedRemedy

Change to 'Sound installation practice, which may be defined by applicable local codes and regulations, should be followed where applicable.' or (straight copy from clause 53) 'It is recommended that proper installation practices, as defined by applicable local codes and regulation, be followed in every instance in which such practices are applicable.'

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Copy the sentence from Clause 53 is preferred.

Note: Make the same changes to clauses 58 and 59

C **60** *S* **60.8.9** *P* **238** *L* # **99109**

Diab, Wael William — Cisco Systems

Comment Type **TR** *Comment Status* **A** *D1.1 #694*

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* **U**

ACCEPT IN PRINCIPLE.

Needs more work by the ad-hoc & look at a jitter number for TP3.

Jitter numbers remain for 100BASE LX and BX as informative (with the exception of TP2 & TP3).

C **60** *S* **60.8.9.3** *P* **239** *L* **6** # **99110**

Thatcher, Jonathan — World Wide Packets

Comment Type **TR** *Comment Status* **A** *D1.1 #861*

the BER should be less than, not greater than 10e-3.
Also, in line 1, -3dBe ?

SuggestedRemedy

Change per comment

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

This issue needs more disicussion in the ad-hoc.

C **60** *S* **60.9.1** *P* **272** *L* **22** # **257**

Dawe, Piers — Agilent

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

'OLT' and 'ONU' are not used anywhere else in this clause, and aren't needed here in fig. 60-9.

SuggestedRemedy

Delete them

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.9.1** *P* **272** *L* **23** # **258**

Dawe, Piers — Agilent

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

It might be helpful to indicate in fig. 60-9 that intermediate connections may be used.

SuggestedRemedy

Add a 'Connection' near each end. Label each end section 'jumper cable' or as decided.

Proposed Response *Response Status* **C**

ACCEPT.

C **60** *S* **60.9.2** *P* **273** *L* **1** # **260**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
This table is part quasi-normative (dispersion) and part informative (attenuation)

SuggestedRemedy
Delete '(informative)' from title.

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

Delete '(informative)' from title.

Extend footnote B to make clear that this part is informative.

C **60** *S* **60.9.2** *P* **273** *L* **11** # **262**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
Part of D1.1 #548 which was overlooked:

SuggestedRemedy
Change ' and' to ', which is the'.

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

C **60** *S* **60.9.2** *P* **273** *L* **8** # **261**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
On a strict reading, the dispersion specs are not independent maxima and minima.

SuggestedRemedy
Check IEC 60793 applies and add footnote: 'See IEC 60793 or G.652 for use of dispersion limits'

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

Add footnote. Include reference to IEC 60793 only if it applies.

C **60** *S* **60.9.3** *P* **272** *L* **52** # **259**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
Following what we decided about channel loss at the last meeting, this subclause has no purpose.

SuggestedRemedy
Delete it.

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

C **60** *S* **60.9.3.1** *P* **273** *L* **18** # **263**
Dawe, Piers Agilent

Comment Type **E** *Comment Status* **A**
This sentence 'The insertion loss is specified for a connection, which consists of a mated pair of optical connectors.' is now worthless, as we do not say how many connections there are in a model channel.

SuggestedRemedy
Delete it. On line20, change 'loss' to 'losses'.

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

C **60** *S* **Figure 60-2** *P* **258** *L* **13** # **211**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
Add "(DUT)" under "Device Under Test" in the box

SuggestedRemedy
Per comment

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

C **60** *S* **Figure 60-3** *P* **259** *L* **35** # **212**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
The figure is not drawn in native Frame format

SuggestedRemedy
Redraw figure in Frame format

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

C **60** *S* **Figure 60-3** *P* **259** *L* **48** # **213**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
Strange font in caption

SuggestedRemedy
Change to correct font

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

C **60** *S* **Figure 60-5** *P* **262** *L* **23** # **215**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
Strange font in caption

SuggestedRemedy
Change to correct font

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

C **60** *S* **Figure 60-6** *P* **266** *L* **47** # **219**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
Strange font in caption

SuggestedRemedy
Change to the correct font

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

C **60** *S* **Table 60-12** *P* **271** *L* **2** # **221**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
IEEE style guide 15.2 avoids the Newspaper Headline Capitalization Style.

SuggestedRemedy
Modify table according to style guide and check the rest of the clause for a few more instances.

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

C **60** *S* **Table 60-2** *P* **252** *L* **13** # **209**
Jonsson, Ulf Ericsson

Comment Type **E** *Comment Status* **A**
The table is a bit vague

SuggestedRemedy
Make table similar to Table 59-2.

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

C **61** *S* *P* **284** *L* # **35**
Marris, Arthur Cadence

Comment Type **E** *Comment Status* **A**
Delete blank page

SuggestedRemedy
Delete blank page

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

C **61** *S* **61.0** *P* **279** *L* **22** # **589**
Barrass, Hugh Cisco Systems

Comment Type **E** *Comment Status* **A**
Revision history should be the same as other clauses

SuggestedRemedy
Change to:

Draft 1.2 November 2002 Draft for IEEE P802.3ah Task Force review

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

C **61** *S* **61.1** *P* **250** *L* **1** # **99112**

Tzannes, Marcos Aware

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

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* **C**

REJECT.

C **61** *S* **61.1** *P* **280** *L* **10** # **591**

Barrass, Hugh Cisco Systems

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

The sentence:

"These systems are intended to be used in the public as well as private networks, therefore must be compliant with all the appropriate regulatory, governmental and regional requirements."

May be interpreted as meaning that the systems must comply with all governmental and regional requirements simultaneously (which would be impossible). It is better to say that the systems are capable of compliance - since the appropriate profile for a given region will ensure compliance.

SuggestedRemedy

Change the sentence to:

"These systems are intended to be used in the public as well as private networks, therefore must be capable of compliance with all the appropriate regulatory, governmental and regional requirements."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. "These systems are intended to be used in the public as well as private networks, therefore shall be capable of compliance with the appropriate regulatory, governmental and regional requirements."

C **61** *S* **61.1** *P* **280** *L* **4** # **590**

Barrass, Hugh Cisco Systems

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

The use of "10PASS-TS-DMT/10PASS-TS-QAM" is redundant (unless it implies 2 separate PHYs). Also the change was made without any corresponding comment.

SuggestedRemedy

Change back to

"10PASS-TS"

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.1.4.1** *P* **279** *L* **47** # **28**

Christopher Kachris Ellemedia Technologi

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

The MAC-PHY Rate Matching function transfer the frame across the MII interface and not the g-interface.

SuggestedRemedy

Replace "g-interface" with "MII interface".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Delet the "across the gamma interface" from thelast sentence of the paragraph.

C **61** *S* **61.1.4.1.1** *P* **280** *L* **19** # **37**

Marris, Arthur Cadence

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

Add a bit more explanation of the MAC-PHY receive state machine.

SuggestedRemedy

Move the sentence "The definition of MAC-PHY rate matching is presented in subclause 61.2.1." to a new paragrapph.

After "from the PHY to the MAC." add the following text "This mode of operation is defined in figure 61-3 which describes the MAC-PHY rate matching receive state machine. This state machine gives receive frames priority over transmitted frames to ensure the receive buffer does not overflow."

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.1.5.4** *P* **283** *L* **9** # **592**

Barrass, Hugh — Cisco Systems

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

Based on comment #958 for draft 1.1 (from Tom Mathey), the PMI aggregation function is not well explained. In particular there is a need for an explaination of how multiple MII instances are handled.

SuggestedRemedy

Substitute subclause 61.1.5.4 with the contents of file

barrass_cmts_1_0103.pdf

Proposed Response *Response Status* **C**

ACCEPT. The material is accepted. It will be dispersed between copper CL61 and OAM CL45 as per editors of thoses clauses.

C **61** *S* **61.2.1.3.1** *P* **281** *L* **44** # **31**

Marris, Arthur — Cadence

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

Missing text

SuggestedRemedy

Under 61.2.1.3.1 insert "No constants are defined for the MAC-PHY rate matching state diagrams."

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.1.3.2** *P* **281** *L* **47** # **32**

Marris, Arthur — Cadence

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

The text formatting of 61.2.1.3.2 and 61.2.1.3.3 could be nicer.

SuggestedRemedy

Format these subclauses to make them look more like the layout of clause 55.5 which looks nice.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. We'll give it our best shot

C **61** *S* **61.2.1.3.2** *P* **282** *L* **3** # **493**

Matt, Squire — Hatteras Networks

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

Rename tx_buffer_empty as it doesn't really indicate an empty buffer.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Rename at tx_buffer_ava

C **61** *S* **61.2.1.3.3** *P* **282** *L* **23** # **33**

Marris, Arthur — Cadence

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

Add "The rate_matching_timer operates in a manner consistent with 14.2.3.2."

SuggestedRemedy

Add "The rate_matching_timer operates in a manner consistent with 14.2.3.2."

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.1.3.4** *P* **283** *L* **1** # **34**

Marris, Arthur — Cadence

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

Delete redundant subclause "61.2.1.3.4 MAC-PHY Rate Matching state diagram functions"

SuggestedRemedy

Delete redundant subclause "61.2.1.3.4 MAC-PHY Rate Matching state diagram functions"

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.1.3.5** *P* **286** *L* **31** # **36**

Marris, Arthur — Cadence

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

Add "start rate_matching_timer" action inside of the box for the WAIT_FOR_TIMER_DONE state.

SuggestedRemedy

Add "start rate_matching_timer" action inside of the box for the WAIT_FOR_TIMER_DONE state.

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.1.3.5** *P* **286** *L* **figure 61.** # **29**

Christopher Kachris Ellemedia Technologi

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

The RX_DV is an output of MAC-PHY and input to MAC interface, so it can not be a control signal to the state machine.

SuggestedRemedy

Replace "RX_DV" with somethink like "rx_data_available" in the "SEND_FRAME_TO_MAC" states and move "RX_DV=TRUE or FALSE" inside the state box.

Proposed Response *Response Status* **C**

REJECT. The comment did seem to reflect a requirement. The group does not understand the output cannot be a controlled signal to the state machine

---

C **61** *S* **61.2.2** *P* **288** *L* **12** # **38**

Marris, Arthur Cadence

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

Remove unnecessary "a"

SuggestedRemedy

Delete the phrase ",where a applicable,"

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.2** *P* **288** *L* **35** # **39**

Marris, Arthur Cadence

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

I thought the word "Loop" was not being used for the PAF.

SuggestedRemedy

Delete the word "Loop"

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.2.1** *P* **289** *L* # **41**

Marris, Arthur Cadence

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

On page 289 in subclauses 61.2.2.1 to 61.2.2.3 the words "loop" and "packet" are used in several places.

SuggestedRemedy

Possibly replace "loop" with "PMI" and replace "packet" with "frame".

Proposed Response *Response Status* **C**

ACCEPT. Editors judgement as it applies. Consider using frame fragment

---

C **61** *S* **61.2.2.1** *P* **289** *L* **1** # **40**

Marris, Arthur Cadence

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

Replace "potentially multiple" with "one or more"

SuggestedRemedy

Replace "potentially multiple" with "one or more"

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.2.1** *P* **291** *L* **5** # **600**

Barrass, Hugh Cisco Systems

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

Figure has no figure number or cross reference.

SuggestedRemedy

Make figure comply with IEEE document standards.

Proposed Response *Response Status* **C**

ACCEPT. Editor will take care of it

C **61** *S* **61.2.2.2** *P* **289** *L* **28** # **42**

Marris, Arthur Cadence

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

Remove the word "any"

SuggestedRemedy

Remove the word "any"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Do the following
However implmentations shall…

C **61** *S* **61.2.2.3** *P* **289** *L* **49** # **495**

Matt, Squire Hatteras Networks

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

Eliminate the notes in the algorithm.

SuggestedRemedy

Can either delete the notes and do nothing else, or specify the types of errors. b1 would be FragTooSmall, b2 would be LostFrag, c2ii would be LostFrag.

Proposed Response *Response Status* **C**

REJECT. This no longer applies due to 593

C **61** *S* **61.2.2.3** *P* **290** *L* **15** # **301**

Zion Shohet Infineon

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

inconsistency in delay definition: In line 15 delay is defined as 64000 bits. In line 37 it is defined as 64K bits, which is well known as 65,536. In page 291 line 15, again, 64000 is defined. This will cause misunderstanding for the implementers.

SuggestedRemedy

define the delay to be 64K (65536).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. IT SHALL BE 64000 bits
because it provides some additional implementation margin.

Editor can add any comments he wants about this

C **61** *S* **61.2.2.3** *P* **290** *L* **37** # **494**

Matt, Squire Hatteras Networks

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

One line 15 we say 64,000. On line 37 we say 64K. Suggest we spell it out in both cases.

SuggestedRemedy

Change 64K to 64,000.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. See 301

C **61** *S* **61.2.2.3** *P* **291** *L* **37** # **593**

Barrass, Hugh Cisco Systems

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

The error handling described in 61.2.2.3 is redundant and (in some aspects) contradicts that described in 61.2.2.5.

This subclause can be slimmed down by using references to the error handling subclause.

SuggestedRemedy

Replace 61.2.2.3 with the contents of the file

barrass_cmts_2_0103.pdf

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.2.4** *P* **290** *L* **39** # **43**

Marris, Arthur Cadence

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

It is not clear what "32B" means. Does it mean "32 bytes"?

SuggestedRemedy

Replace "32B" with "32 bytes"

Proposed Response *Response Status* **C**

ACCEPT. See 595

C **61** *S* **61.2.2.4** *P* **292** *L* **39** # **595**

Barrass, Hugh Cisco Systems

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

Not clear what is meant by 32B

SuggestedRemedy

Change "32B" to "32 Bytes (minFragmentSize)"

Proposed Response *Response Status* **C**

ACCEPT. Same as comment 43

C **61** *S* **61.2.2.4** *P* **292** *L* **39** # **597**

Barrass, Hugh Cisco Systems

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

Only min fragment is defined, max fragment must be added.

SuggestedRemedy

Add item 3 in list:

Fragments cannot be more than 128 Bytes (maxFragmentSize)

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.2.5** *P* **291** *L* **21** # **496**

Matt, Squire Hatteras Networks

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

Its not clear why in one case (line 21) we flush the buffers but don't forward 'garbage' to the MAC, but in the other (line 24) we do forward garbage. I think in either case we would want to be consistent.

SuggestedRemedy

Forward the garbage to the MAC in both cases.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. modify the text with by inserting after the paranthesis "the first part of the frame shall be transferred across the MII then"

C **61** *S* **61.2.2.5** *P* **291** *L* **8** # **497**

Matt, Squire — Hatteras Networks

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

We use the terms 'greater' and 'less' than here liberally. But I don't think its clear how to handle sequence number wrapping.

SuggestedRemedy

Use split horizon to have two spaces where you only consider things in the nextSequenceNumber thru nextSequenceNumber+2^11 (modular arithmetic). Any sequence number outside that range results in the BadFragmentReceived error. For example, if expected=1 and next=2^12-1, thats a problem, but would be missed by the defined checks.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

New wording:

If nextFramentSequenceNumber is outside the range (expectedFramentSequenceNumber through expectedFramentSequenceNumber +2^11) then assert PAF_BadFragmentReceived.

C **61** *S* **61.2.2.5** *P* **292** *L* **52** # **598**

Barrass, Hugh — Cisco Systems

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

remove TBDs

SuggestedRemedy

for both min and max fragment - replace "TBD" with "in 61.2.2.4"

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.2.5** *P* **293** *L* **8** # **594**

Barrass, Hugh — Cisco Systems

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

Error handling instructions need completion.

SuggestedRemedy

Change paragraph to:

If the nextFragmentSequenceNumber is less than the expectedFragmentSequenceNumber (or greater than expectedFragmentSequenceNumber + 211) then assert PAF_BadFragmentReceived. Discard the fragment, do not increment expectedFragmentSequenceNumber.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Append at the end of the paragraph: Discard the fragment, do not increment expectedFragmentSequenceNumber.

C **61** *S* **61.2.2.6** *P* **291** *L* **32** # **44**

Marris, Arthur — Cadence

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

Delete ",where a applicable,"

SuggestedRemedy

Delete ",where a applicable,"

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.2.6.1** *P* **293** *L* **37** # **596**

Barrass, Hugh — Cisco Systems

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

Referenced subclause for gamma interface is known.

SuggestedRemedy

Replace subclause with:

The PAF interfaces with the PHYs across the gamma-interface. The gamma-interface specification is defined in 61.2.3.1.1. This subclause specifies the data, synchronization and control signals that are transmitted between the TPS-TC and the PAF.

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.2.6.3** *P* **292** *L* **17** # **46**

Marris, Arthur — Cadence

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

The word "must" is deprecated. Also lines 21, 25, 33, 37, 47 and 48 and pages 293 and 300.

SuggestedRemedy

Change "must" to "shall"

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.2.6.3** *P* **294** *L* **17** # **599**
Barrass, Hugh Cisco Systems

Comment Type **E** *Comment Status* **A**
The document must not use "must"

SuggestedRemedy
Replace "must" with "shall"

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

C **61** *S* **61.2.2.7** *P* **293** *L* **28** # **498**
Matt, Squire Hatteras Networks

Comment Type **TR** *Comment Status* **A**
Yank this section. Its wrong.

SuggestedRemedy

Proposed Response *Response Status* **C**
ACCEPT. See comment 602

C **61** *S* **61.2.2.7** *P* **293** *L* **34** # **45**
Marris, Arthur Cadence

Comment Type **T** *Comment Status* **R**
The text in 61.2.2.7 is confusing. It is easy to get it muddled with the diagram in 61.2.2.1.

Is the seqnum meant to be 10 or 12 bits?

How does figure 61–6 show an example of the fragmentation procedure?

A bit more of an explanation would be helpful.

SuggestedRemedy
Make seqnum 10 bits on line 34.

Rename "seqnum" to "MacFrameSeqNum".

Delete "Figure 61–6 shows an example of the fragmentation procedure with a MAC frame with 1024 octets, 3 aggegated PHYs with data rates of 1 Mbps, 2 Mbps and 1 Mbps."

Proposed Response *Response Status* **C**
REJECT. See 602

C **61** *S* **61.2.2.7** *P* **295** *L* **29** # **601**
Barrass, Hugh Cisco Systems

Comment Type **T** *Comment Status* **A**
Subclause contradicts 61.2.2.1 and references a non-existant figure

SuggestedRemedy
Replace subclause with:

Fragment frame structure is defined in 62.2..2.1.

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

C **61** *S* **61.2.2.8** *P* **296** *L* **1** # **602**
Barrass, Hugh Cisco Systems

Comment Type **T** *Comment Status* **A**
Entire subclause contradicts definitions in 61.2.2.1 through 61.2.2.5

SuggestedRemedy
Delete entire subclause.

(it could be replaced with a newer, valid, version if required).

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

C **61** *S* **61.2.3** *P* **300** *L* **4** # **603**
Barrass, Hugh Cisco Systems

Comment Type **E** *Comment Status* **A**
Subclause editor's note appears to be here for good. The information should be included in the preamble and the note ditched.

SuggestedRemedy
Add a sentence to the opening paragraph:

"The term “TPS-TC” is borrowed from the definition in ITU-T g.993. In this context the term “TC = Transmission Convergence" is sufficient as no other types of TC are defined in this document (e.g. PMS-TC). Hence, in the interest of brevity, this subclause will use "TC" within the text and diagrams."

Delete the first editor's note.

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

C **61** *S* **61.2.3.1** *P* **298** *L* **45** # **61001**

Arthur Marris

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

Comment from the floor during Sub Task Force Meeting: The word 'interfaces' is spelled wrong.

SuggestedRemedy

Change "intefaces" to "interfaces".

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.3.1.1** *P* **301** *L* **15** # **604**

Barrass, Hugh Cisco Systems

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

The words "Additional paragraphs" are redundant

SuggestedRemedy

Delete "Additional paragraphs"

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.3.1.2** *P* **302** *L* **11** # **607**

Barrass, Hugh Cisco Systems

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

Previous comment #977 (from Vladimir Oksman) has not been implemented correctly.

The definition of the alpha/beta interface should be in this section - not separately in Clause 62 and Clause 63.

SuggestedRemedy

Replace entire subclause 61.2.3.1.2 with the contents of subclause 62.1.4.1 (and all inferior subclauses) plus the following paragraph:

"Refer to Clauses 62 and 63 for definitions of the G.994 messaging, Operation Channel (OC) and Indicator Bits (IB) mechanisms for accessing remote parameters."

Replace subclause 62.1.4.1 (and all inferior subclauses) with:

"A complete definition of the alpha/beta interface is contained in 61.2.3.1.2"

Proposed Response *Response Status* **C**

ACCEPT.

C **61** *S* **61.2.3.1.2** *P* **302** *L* **29** # **605**

Barrass, Hugh Cisco Systems

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

It is entirely unnaceptable that an error is detected in one sublayer and not propagated to further sublayers.

If the FEC detects, but cannot correct an error (or errors) in a frame then an error signal must be passed upwards with that frame. Detected errors must not be "swept under the carpet."

SuggestedRemedy

Comment #653 referenced in the footnote must be reconsidered (and accepted).

Proposed Response *Response Status* **U**

Stays unresolved.

C **61** *S* **61.2.8** *P* **294** *L* **1** # **499**

Matt, Squire Hatteras Networks

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

The state diagram section, variables and pictures, is out of date.

SuggestedRemedy

Proposed Response *Response Status* **C**

ACCEPT. See comment 602

C **61** *S* **61.3.8.7** *P* **305** *L* **44** # **379**

Beili, Edward Actelis

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

Remote Discovery NT's CL message is not defined.

SuggestedRemedy

Add a table with bit definitions for Remote Discovery NT's CL message.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Editor shall deal with it with authority

C **61** *S* **61.3.8.7** *P* **309** *L* **31** # **378**

Beili, Edward Actelis

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

Table 61-14 does not list bit definitions for all operations of Aggregation Discovery Control (Set if clear, Clear if same, Get Remote Discovery etc., see table 45-5).

SuggestedRemedy

Add bit definitions for all Aggregation Discovery Control operations.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. See comment 379

C **61** *S* **61.3.8.7** *P* **309** *L* **9** # **380**

Beili, Edward Actelis

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

G.handshake message parameters tables (starting from table 6-13) describing Aggregation Discovery have only 10PASS-TS in the table header, while these tables are common to all EFMCu interfaces.

SuggestedRemedy

Mention al interfaces (10Pass-TS-DMT/QAM, 2PASS-TL/2BASE-TL) or none.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. See 379

C **62** *S* **62.1.4.1.2** *P* **322** *L* **54** # **99113**

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**

UNRESOLVED COMMENT. Reference comment 653.
See 605

C **62** *S* **62.2.2** *P* **359** *L* **32** # **47**

Beck, Michael Alcatel

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

The full-text description of the PMA does not match with the T1.424 referencing style used in the rest of Clause 62. Subclauses 62.2.2-62.2.5 should be replaced by a reference with a list of exceptions.

SuggestedRemedy

REPLACE 62.2.2 through 62.2.5 by the following paragraphs:

62.2.2 PMA functional specifications

The 10PASS-TS PMA is specified by incorporating the MCM-VDSL standard, T1.424/Trial-Use Part 3, by reference, with the modifications noted below. This standard provides support for voice-grade twisted pair. For improved legibility in this clause, T1.424/Trial-Use Part 3, will henceforth be referred to as MCM-VDSL.

62.2.3 General exceptions

The 10PASS-TS PMA is precisely the PMS-TC specified in MCM-VDSL, with the following general modifications:
a) There are minor terminology differences between this standard and MCM-VDSL that do not cause ambiguity. The terminology used in 10PASS-TS was chosen to be consistent with other IEEE 802 standards, rather than with MCM-VDSL. Terminology is both defined and consistent within each standard. Special note should be made of the interpretations shown in Table <REF>.
b) The 10PASS-TS PMA does not support the "fast path".

[table]
Interpretation of general MCM-VDSL terms and concepts
MCM-VDSL term or concept <=> Interpretation for 10PASS-TS
PMS-TC <=> PMA
VTU-O, LT <=> 10PASS-TS transceiver unit - WAN side
VTU-R, NT <=> 10PASS-TS transceiver unit - subscriber side
[/table]

62.2.4 Specific requirements and exceptions

The 10PASS-TS PMA shall comply to the requirements of MCM-VDSL Section 9.3. Where there is conflict between specifications in MCM-VDSL and those in this standard, those of this standard shall prevail.

62.2.4.1 Reference section 9.3.1

9.3.1 of MCM-VDSL is replaced by the PMA functional diagram in 62.2.1.

62.2.4.2 Reference section 9.3.2

Stet.

62.2.4.3 Reference section 9.3.3

Stet, with the exception of TBD Reed-Solomon encoder setting.

62.2.4.4 Reference section 9.3.4

Stet.

62.2.4.5 Reference section 9.3.5

Stet, with the exception of 9.3.5.5.4 (NTR), which is not applicable.

Proposed Response *Response Status* **C**

ACCEPT.

C **62** *S* **62.3.2.2.9** *P* **374** *L* **12** # **608**

Barrass, Hugh Cisco Systems

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

Comment #270 has not been implemented correctly. Options for interleaver block size should be removed.

SuggestedRemedy

Delete the sentence

"The interleaver block length I shall be normally equal to S/8. Optionally, it may be equal to S/4 or S/2."

Proposed Response *Response Status* **C**

ACCEPT.

C **62** *S* **62.4.4** *P* **375** *L* **30** # **48**

Beck, Michael Alcatel

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

There is no information about the status of the optional features of T1.424 in IEEE802.3ah.

SuggestedRemedy

ADD sentence: "Implementation of optional specifications in MCM-VDSL is not required for compliance with this standard. If optional features are implemented, their use shall be negotiated between VTU-O and VTU-R during initialization."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. "change shall to "is" "

C **62** *S* **62.4.4** *P* **375** *L* **33** # **49**

Beck, Michael Alcatel

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

Section 7 of MCM-VDSL is erroneously listed among the required sections. Subclause 62.4.4.1 clearly states that MCM-VDSL Section 7 is not applicable to 10PASS-TS. The requirements of MCM-VDSL Section 7 are in fact replaced by subclause 62.4.5.

SuggestedRemedy

REMOVE Section 7 (U-interface characteristics) from the list of requirements.

Proposed Response *Response Status* **C**

ACCEPT.

C **62** *S* **62.4.4.2.2** *P* **376** *L* # **586**

Simon, Scott Cisco Systems, Inc

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

The reference contains a description of an optional feature, pilot tones, in 8.2.3.1. EFM should reduce the number of options in the PHY by making modes mandatory or removing them.

If EFM mandates pilot tones, the specific pilot tone should be specified OR EFM VTU-Os shall support a pilot tone on any downstream tone.

SuggestedRemedy

Add text to 62.4.4.2.2:

8.2.3.1: Support for pilot tones is mandatory. 10PASS-T-LT PHYs shall support the transmission of a pilot tone on any downstream tone.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. For clarification the editor will add note Support for pilot tones is mandatory. 10PASS-T-LT PHYs shall support the transmission of a pilot tone on any downstream tone.

C **62** *S* **62.4.4.2.2** *P* **376** *L* *#* **587**

Simon, Scott Cisco Systems, Inc

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

The reference contains details about the cyclic extension function of MCM-VDSL (8.2.2). The total cyclic extension equation must choose values such that

(Lcp + Lcs - Beta) = m x 2^(n+1)

the reference then states, that minimally, the equation should meet 40*2^n, and that other values are allowed as options.

EFM should reduce the number of options in the PHY by making modes mandatory or removing them.

SuggestedRemedy

Add text to 62.4.4.2.2:

8.2.2: Values to constrain the total cylic extension other than 40*2^n are not supported by 10PASS-T

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Editor note will be added to clarify the range of Cyclic extensions

C **62** *S* **62.4.4.2.2** *P* **376** *L* *#* **585**

Simon, Scott Cisco Systems, Inc

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

The reference contains an optional synchronous transmission mode (8.2.3.4).

Synchronous mode would be difficult to implement across a binder of cable (particularly in an unbundled environment). None of the simulation results that demonstrate MCM-VDSL's ability to satisfy the objectives rely on synchronous mode.

Making synchronous mode an option would require a new port type to differentiate between synchronous-capable and synchronous-incapable PHYs

EFM should reduce the number of options in the PHY by making modes mandatory or removing them.

SuggestedRemedy

Add text to 62.4.4.2.2:

8.2.3.4: Synchronous mode is not supported by 10PASS-T

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. The use of synchronous mode as defined in MCM-VDSL 8.2.3.4 may improve operation in certain binder environments and is a system implmentation item which is outside the scope this standard

C **62** *S* **62.4.4.2.2** *P* **376** *L* **20** *#* **584**

Simon, Scott Cisco Systems, Inc

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

The reference portion related to the Constellation encoder (MCM-VDSL 8.2.5) allows different implementations to vary the maximum number of encoded bits per sub-carrier. Varying implementations will reduce interoperability and interchagability.

EFM should reduce the number of options in the PHY by picking one value.

SuggestedRemedy

Add text to 62.4.4.2.2:

8.2.5: For 10PASS-T,Bmax_d shall be 15, Bmax_u shall be 15.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Next time editor will come up with a text that will show a TBD range, Bmax_d, Bmax_u.

C **62** *S* **62.4.4.2.2** *P* **377** *L* **8** *#* **582**

Simon, Scott Cisco Systems, Inc

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

There is no mention of the exact number of sub-carriers that the PHY must support. If this number is not specified, different implementations may not be interoperable or interchangable.

SuggestedRemedy

Add the text:

"10PASS-T shall support modulation on Nsc = 4096 sub-carriers (n = 4). The actual number of sub-carriers carrying data on a link may be less than Nsc"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. A new line will be added that would indicate the minimum number of Nsc for MCM-VDSL carriers.
10PASS-T shall support modulation a mimimum of Nsc = TBD sub-carriers. The actual number of sub-carriers carrying data on a link may be less than Nsc"

C **62** *S* **62.4.4.2.2** *P* **379** *L* **23** # **581**

Simon, Scott — Cisco Systems, Inc

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

References to the rest of MCM-VDSL 8.2.x are left out. For example, 8.2.3 is not mentioned.

SuggestedRemedy

Add a line:

"All other subclauses in MCM-VDSL are referenced stet."

Proposed Response *Response Status* **C**

ACCEPT.

C **62** *S* **62.4.4.4.7** *P* **380** *L* **16** # **588**

Simon, Scott — Cisco Systems, Inc

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

The definition of bit swapping in the reference (MCM-VDSL 10.7) specifies the protocol, but not the algorithm for bit swapping. If the algorithm is not specified, varying implementations may converge to different rates on the same loop environment.

Furthermore, the frequency at which the algorithm is applied should also be standardized so that all PHYs update to line conditions at the same rate.

EFM PHYs should be interoperable and interchangable. EFM should specify a bit swapping algorithm and a frequency at which the algorithm is applied.

SuggestedRemedy

Add text to 62.4.4.4.7:

10PASS-T shall use Campello's Solution to Margin-Adaptive Loading (as described in Understanding DSL Technology by T. Starr, J. Cioffi, and P. Silverman) as the algorithm to determine when and how to initiate a bitswapping operation.

Editor's Note: The details of applying the algorithm to the specified bit rate and SNR margin are TBD

The bit loading algorithm shall be applied every 10 seconds on an operational link.

Proposed Response *Response Status* **C**

REJECT.

C **62** *S* **62.4.4.5.1** *P* **379** *L* **21** # **50**

Beck, Michael — Alcatel

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

The state diagram shown in Figure 62-9 does not comply with subclause 1.2.1 ("State diagram conventions").

SuggestedRemedy

Update state diagram according to subclause 1.2.1.

Proposed Response *Response Status* **C**

ACCEPT.

C **62** *S* **62.4.4.7** *P* **386** *L* **38** # **579**

Simon, Scott — Cisco Systems, Inc

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

The description of FMT implementions is unneccessary for 802.3ah. One may choose to design their PHY in any number of infinite ways, there is no need for us to reference a specific implementation.

SuggestedRemedy

Remove 62.4.4.7 and edit 62.4.4 to remove the reference to MCM-VDSL Annex B

Proposed Response *Response Status* **C**

REJECT.

C **62** *S* **62.4.4.8** *P* **386** *L* **43** # **580**

Simon, Scott — Cisco Systems, Inc

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

Since 4.3125KHz tone spacing is mandatory, the use of 8.625KHz tone spacing is redundant.

SuggestedRemedy

Remove 62.4.4.8. Update 62.4.4 to remove the reference to MCM-VDSL Annex C.

Proposed Response *Response Status* **C**

REJECT.

C **62** *S* **62.5.2.2** *P* **389** *L* **40** # **302**

Zion Shohet — Infineon

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

The sentence ".... with base-band spectral shaping " is truncated.

SuggestedRemedy

complete the sentence to read: ".... with base-band spectral shaping "

Proposed Response *Response Status* **C**

ACCEPT.

C **62A** *S* **62A.1** *P* **403** *L* **53** # **30**

Marris, Arthur — Cadence

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

The word "will" is deprecated.

SuggestedRemedy

Delete the word "will"

Proposed Response *Response Status* **C**

ACCEPT.

C **62A** *S* **62A.3** *P* **377** *L* # **99114**

Simon, Scott — Cisco Systems, Inc.

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

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 4 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* **U**

REJECT.

C **62A** *S* **62A.3.3.5** *P* **406** *L* **53** # **583**

Simon, Scott Cisco Systems, Inc

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

The text "Create another table yyy defines TBD number of profiles and for each profile specify the values for each parameter in Table xxx as TBD." was intended to be an instruction to the editor, not text for the draft.

SuggestedRemedy

1) Remove the text "Create another table yyy defines TBD number of profiles and for each profile specify the values for each parameter in Table xxx as TBD."

2) Create another table yyy defines TBD number of profiles and for each profile specify the values for each parameter in Table xxx as TBD.

Proposed Response *Response Status* **C**

ACCEPT.

C **62A** *S* **62A.3.4** *P* **406** *L* **27** # **303**

Zion Shohet Infineon

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

payload rate definition is confusing: 40/10 means 10M/2.5M. Need a clearer definition.

SuggestedRemedy

modify the text from line 27 to line 35 to read:" ..... where Drate and Urate are expressed in Mbps. For example, a payload rate profile of 10/2.5 corresponds to a 10Mbps Downstream and 2.5Mbps Upstream payload rates. Granularity of the payload rate profile shall be 0.25Mbps."

Proposed Response *Response Status* **C**

ACCEPT.

C **64A** *S* **64a.2** *P* **460** *L* **8** # **678**

Thatcher, Jonathan World Wide Packets

Comment Type **TR** *Comment Status* **D** *extended temp*

Extended temperature support for [100,1000]BASE-[LX10,BX10-U,BX10D] is mandatory.

Temperature range must be -40 to +85 degrees C. It is critical that our optical specifications be consistent with this range.

It is not clear that this information should be part of C59 / C60. There appears to be no tie between these clauses.

SuggestedRemedy

Add these specifications to 64A.
Clarify document structure and add references as needed.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

0. Informatively reference existing international standards as appropriate.

1. Include evironmental temperature range in C64A to be -40C to +85C

2. Include 100BASE-LX10; 100BASE-BX; 1000BASE-BX; 1000BASE-LX10; and 1000BASE-PX10/20

3. Reference each port type (EFM optical PMDs), to make it clear that each extended temperature PMD shall meet this temperature range and the associated optical specifications (e.g. in clauses 58, 59, 60)

Previously agreed to extended temperature range (-40 to 85):
1000BASE-LX
1000BASE-PXU
1000BASE-BXU

Starting text: "An EFM optical PMD that is intended for -40 to 85 degree extended temperature operation shall meet the optical associated optical specifications over this range.

Include evironmental temperature range in C64A to be -40C to +85C. EFM physical layer specifications apply to outside plant operating temperaturesranging between -40 to 85 degrees C."

C **64A** *S* **64A.2.1** *P* **458** *L* **7** # **296**

Dawe, Piers Agilent

Comment Type **TR** *Comment Status* **D** *extended temp*

802.3 doesn't do temperature specs. They are out of scope.

Note comment # 565 to D1.1.

SuggestedRemedy

Delete 'Explicit requirements for the operating temperature range are given for 1000BASE-LX10.' Change 'Other values' to 'Specific requirements and values'.

If this section is expanded, make the distinction between the temperature of the terminals (could be inside or outside) and of the outside plant (cabling) itself - outside by definition, but temperature range varies by geography.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

To be discussed at the Vancouver meeting