Cl **45** *SC* **45.2.1.149** *P* **49** *L* **40** # 3622

Hajduczenia, Marek Bright House Networks

Comment Type **ER** *Comment Status* **R**

Text is broken by tables.

SuggestedRemedy

Please set the orphan control on tables and text to make sure that text is not broken by tables.

Response *Response Status* **U**

REJECT.
Setting orphan controls causes excessive white space on previous pages which the commenter has objected to in previous comments rounds. In published standard this will be different due to Staff Editors work.

Cl **45** *SC* **45.2.7a.5.2** *P* **62** *L* **20** # 3634

Hajduczenia, Marek Bright House Networks

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

It is not clear how the value stored in bits 12.10240.2:0 is then translated into register range 12.10241 through 12.12287.

There is also inconsistency between footnote b) and text "In the CLT these bits are read only and will always read as a one."

SuggestedRemedy

modify text to read: "The value stored in bits 12.10240.2:0 identifies the OFDM channel for which registers 12.10241 through 12.12287 hold the MER measurement value. Bits 12.10240.2:0 are only valid for 10GPASS-XR-D PMA/PMD. Bits 12.10240.2:0 are reserved for 10GPASS-XR-U PMA/PMD and return a zero on read."
Remove footnote b)
Insert the following text in description field for 12.10240.2:0 under existing text:
2 1 0
0 0 1 = OFDM channel number 1
0 1 0 = OFDM channel number 2
0 1 1 = OFDM channel number 3
1 0 0 = OFDM channel number 4
1 0 1 = OFDM channel number 5
other values are reserved

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
Change to
"Bits 12.10240.2:0 form a pointer to one of the five possible OFDM channels in the EPoC network. These bits are a reflection of the variable RxMER_ChID defined in 100.2.12.3.1."

Cl **45** *SC* **45.2.1.4** *P* **34** *L* **38** # 3647

Hajduczenia, Marek Bright House Networks

Comment Type **ER** *Comment Status* **R** *EZ*

Reserved registers were aligned under 802.3bx D3.0 - please align per i-51 (http://www.ieee802.org/3/bx/comments/P8023-D3p0-Comments_Final_byCls.pdf)

SuggestedRemedy

Change "Reserved for future speeds" to "Reserved"

Response *Response Status* **U**

REJECT.
The comment response for referenced i-51 only states “Change the two instances of "reserved for future use" to "reserved" and does not include changing “Reserved for future speeds” Draft 3.2 of 802.3bx still includes "Reserved for future speeds" in this table row as do several other tables in Cl 45 outside the scope of 802.3bn. Perhaps a maintance request should be entered by the commentor.

Cl **45** *SC* **45.2.1.14a.1** *P* **37** *L* **25** # 3649

Hajduczenia, Marek Bright House Networks

Comment Type **ER** *Comment Status* **R** *EZ*

"When read as a one, bit 1.17.1 indicates that the PMA/PMD is able to operate as " - in the scope of this document, "PMA/PMD" is clear enough. When merged into the main standard, "PMA/PMD" will become ambiguous

SuggestedRemedy

Add qualifier "10GPASS-XR" before each "PMA/PMD" and "PHY" instance in Clause 45. In this case, change "When read as a one, bit 1.17.1 indicates that the PMA/PMD is able to operate as " to "When read as a one, bit 1.17.1 indicates that the 10GPASS-XR PMA/PMD is able to operate as "

Response *Response Status* **U**

REJECT.
In this instance the useage is correct as is since the first PMA/PMD refers to the one being read via MDIO not a specific type of PMA/PMD and is consistent with the rest of Clause 45: "When read as a one, bit 1.17.1 indicates that the PMA/PMD is able to operate as a 10GPASS-XR-D PMA/PMD type."
A quick scan of the 110 instance of PMA/PMD indicates they are all either proper as is or clear from context.

Cl **45** *SC* **45.2.1.132.4** *P* **39** *L* **43** # 3663

Hajduczenia, Marek Bright House Networks

Comment Type **ER** *Comment Status* **R**

"These bits are a reflection of the variable" - I would suggest to follow the recently received comment on D1.5 of 802.3bp (http://www.ieee802.org/3/bp/comments/8023bp_D15_approved.pdf, comment 24) and change "These bits" to "Bits 1.1901.6:4"

SuggestedRemedy

Apply the same type of changes everywhere where "these bits", "the bits", "this bit" is still in use in Clause 45 to make these references explcit

Response *Response Status* **U**

REJECT.
The bits are clearly identified in the beginning sentence of the paragraph "Bits 1.1901.11:7 indicate". "These bits" later in the paragraph clearly refers to the same bits.

Cl **101** *SC* **101.4.3.10.1** *P* **220** *L* **22** # 3670

Hajduczenia, Marek Bright House Networks

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

USNcp definition indicates it is a 4 bit value, yet only 3 bits are really used. What is the point of reserving additional MSB here?

SuggestedRemedy

Given that these are *state diagram* variables, and not registers, we should not really care about how many bits these have. It would be much more consistent to define it as an 8-bit unsigned integer and then apply individual values as follows:
7 = 768 samples
6 = 640 samples
5 = reserved
4 = 512 samples
3 = reserved
2 = 384 samples
1 = reserved
0 = 256 samples
Bit assignment here does not matter at all, and allows you to add future values as needed, without playing around with bits and reserved values. I understand this is the way it is done in DOCSIS, but it is unnecessary and adds complexity in definitions of variables in state diagrams.
There are also other variables defined in the very same way without any need.

Response *Response Status* **U**

REJECT.
The four bit values allows future expansion if needed.
Clearly an enumeration is just as clear as mapping values. Commonallity with DOCSIS may add some small value. The objective is not to make it easy to generate the standard but easy to implement. Furthermore changing this to an 8 bit integer would break the register mapping in Cl 45 forcing the MANUAL renumbering of all registers after 1907 and posibly introducing errors in the standard in the process.

Passed by voice without opposition
For (reject):
Against (change variable name):
Abstain:

Cl **45** *SC* **45.2.1.142** *P* **46** *L* **37** # 3681

Hajduczenia, Marek Bright House Networks

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

Table 45–98l reserves a whole register 1.1920 without any need.

SuggestedRemedy

Remove 1.1920 defintion, renumber all existing register numbers following 1.1919 by one.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Add
"45.2.1.142.3 Reserved (1.1920.15:0)
Bits 1.1920.15:0 are reserved in the event the MAC address is expanded to 64 bits in the future."

At line 33 in table 45–98l change
"MAC address bits 48:32 of" to
"MAC address bits 47:32 of"

Cl **45** *SC* **45.2.7a.2.1** *P* **59** *L* **35** # 3700

Hajduczenia, Marek Bright House Networks

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

"See the variable definition for interpretation of individual bits" - this is not the correct way to approach it - definitions of reisters should be self-standin and not rely on cross-reference elsewhere. Details of where and why individual values are set are not important in Clause 45.

SuggestedRemedy

Remove "See the variable definition for interpretation of individual bits" in 45.2.7a.2.1, 45.2.7a.2.2, 45.2.7a.2.3, and 45.2.7a.2.4
Add the following definition in Table 45-211c, in Description for 12.1.15:12, under "Modulation profile for subcarrier 7"
15 14 13 12
1 1 1 1 = Excluded subcarrier
1 1 1 0 = 16384-QAM
1 1 0 1 = 8192-QAM
1 1 0 0 = 4096-QAM
1 0 1 1 = 2048-QAM
1 0 1 0 = 1024-QAM
1 0 0 1 = 512-QAM
1 0 0 0 = 256-QAM
0 1 1 1 = 128-QAM
0 1 1 0 = 64-QAM
0 1 0 1 = 32-QAM
0 1 0 0 = 16-QAM
0 0 1 1 = 8-QAM
0 0 1 0 = QPSK
0 0 0 1 = BPSK
0 0 0 0 = null
Repeat bit assignment in 12.1.11:8, 12.1.7:4, and 12.1.3:0 in the same fashion.
Similar chanes in 45.2.7a.3 and subclauses.

Response *Response Status* **U**

REJECT.
The Task Force removed the enum so as not to duplice this information which may lead to inconsistencies and ambiguity.
On the contrary Cl 45 is optional in its entirety. All normative information is contained in the variable definition.

Cl **103** *SC* **103.2.2.1** *P* **304** *L* **47** # 3723

Hajduczenia, Marek Bright House Networks

Comment Type **ER** *Comment Status* **R**

"This constant is defined in 64.2.2.1 and is 16 ns." - if you already point to definition elsewhere, that is all you neeed - do not copy value

SuggestedRemedy

Change to "This constant is defined in 64.2.2.1." or just copy whole definition from 64.2.2.1 without reference. The first approach is preferred.
Similar change to definitions of: localTime, data_rx, data_tx, grantStart, IdleGapCount, newRTT, m_sdu_rx, m_sdu_tx, OctetsRequired, and others in Clause 103, where you both define it locally and reference it back to Clause 64/77. A reference is sufficent - a full definition is a click away.

Response *Response Status* **U**

REJECT.
The intention here was to provide the reader with additional information on the constant and not force him/her to follow the cross reference, especially one to another section of the standard (something the commenter has pointed out is objectionable). The language used is intentionally non-normative as the referenced definiton is normative.

Cl **103** *SC* **103.1** *P* **296** *L* **27** # 3746

Hajduczenia, Marek Bright House Networks

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

The statement "There are a number of variables, constants and functions that are complementary to those defined for EPON Multipoint MAC Control but that are unique to EPoC. These are listed in Table 103-1." speaks of variables and functions complementary to EPON, but unique to EPoC - given that Clause 103 is defined as standalone and relies only m inimally on Clause 77, there is little sense to list such variables / functions.

SuggestedRemedy

Remove the statement and Table 103-1 - there is nothing it adds to understanding MPCP for EPoC and only introduces confusion by speaking of complementary but unique variables / functions.

Response *Response Status* **U**

REJECT.
The Task Force believes this statement and Table 103-1 will be benificial to the reader in understanding the subtle differences between the existing MAC control for EPON and what is needed for EPoC.

Cl **103** *SC* **103.2.1** *P* **301** *L* **49** # 3749

Hajduczenia, Marek Bright House Networks

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

"The principles of Multipoint MAC Control is the same as those described in 77.2.1 for EPON." - either you define Clause 103 as delta from Clause 77 for EPoC, or you define it as standalone, and reference CLause 77 as little as possible. Now it is neither

SuggestedRemedy

Discuss in TF and decide whether Clause 103 is supposed to be standalone relative to Clause 77 (and then content in 103.2.1 needs to replicated from Clause 77) or just a delta from Clause 77 (then a lot of text is not needed, e.g., 103.1.4, 103.1.5, etc. could be removed with pointers to Clause 77)

My personal opinion is that the second approach (delta) would be simpler to maintain, but might be harder to read. The first approach creates cleaner specification, but creates a complete copy of Clause 77 where changes specific to EPoC are very few and far between.

Response *Response Status* **U**

REJECT.
The Task Force has decided that Cl 103 is a delta clause to Cl 77. This was already discussed by the TF and it was decided the delta approach would be best (an yes it is easier to maintain).

Cl **103** *SC* **103.2.2.3** *P* **306** *L* **21** # 3754

Hajduczenia, Marek Bright House Networks

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

Very cofnusing definition of packet_initiate_delay variable - first we provide its definition and then say it is defined elsewhere - which is it then ?

SuggestedRemedy

Decide whether the variable packet_initiate_delay is defined in here in 103.2.2.3 (and then remove any references to 77.2.2.3) or it is defined through reference to 77.2.2.3 (and then local definition is not needed)

Response *Response Status* **U**

REJECT.
The intent here is to make the clause easier to understand for those familiar with EPON. The wording used here is specifically non-normative as the rulling definition is that being adopted from Cl 77. However, the commenter has noted before that it is poor form to expect a reader to constantly shift back and forth between different clauses, especially when they are in different Sections of the Standard, thus the initial definition in Cl 103 includes the definition and a ref back to the def in Cl 64 or 77 whereas subsequent defintions in Cl 103 only the initial def in Cl 103. Should the TF wish to reconsider this strategy this change would be in order
Also see Cmt# 3746

Passed by voice without opposition
For (reject):
Against (change variable name):
Abstain:

Cl **103** *SC* **103.3.3.1** *P* **317** *L* **26** # 3764

Hajduczenia, Marek Bright House Networks

Comment Type **TR** *Comment Status* **R** *rfOn/OffTime, Soc*

"This variable holds the time required to terminate the RF and is included for consistency with Clause 77."
What does it even mean? Something is passed through an interface and it is not even needed? If the same interface was to be reused, it was modified already, since discoveryInformation was removed anyway.

SuggestedRemedy

Remove rfOffTime, rfOnTime definitions in 103.3.3.1 (not needed) and remove it from all primitives (apparently not needed at all).
Similarly, it is not clear why "syncTime" is being used if it is zero for EPoC - just assign zero explicitly rather than create a variable and then assign zero to it !!!!

Response *Response Status* **U**

REJECT.
rfOffTime occurrs 25 times and rfOffTime occurrs 25 times in the draft. In addition there are the phrases "RF On Time" and "RF Off Time". syncTime occurs 6 times. It is felt by the TF that maintaining consistency with Cl 77 SD's out weights the need to simplify the SD's in the Draft. The TF may wish to reconsider this position.

Cl **103** *SC* **103.3.3.5** *P* **319** *L* **4** # 3765

Hajduczenia, Marek Bright House Networks

Comment Type **TR** *Comment Status* **R** *rfOn/OffTime, Soc*

"sync_time: The time interval required to stabilize the receiver at the CLT." - but before it was stated that sync_time is not needed (and defined only for compatibility with EPON, whatever it means)

SuggestedRemedy

Remove sync_time parameter from MA_CONTROL.request(DA, GATE, discovery, start, length, discovery_length, sync_time) primitive, respective MPCPDUs and state diagrams in 103.3.3.6

Response *Response Status* **U**

REJECT.
See Cmt# 3764

Cl **103** *SC* **103.3.3.5** *P* **319** *L* **27** # 3766

Hajduczenia, Marek Bright House Networks

Comment Type **TR** *Comment Status* **R** *rfOn/OffTime, Soc*

But before it was stated that rfOnTime / rfOffTime do not have really any meaning in EPoC.

SuggestedRemedy

Remove rfOnTime / rfOffTime from primitives MA_CONTROL.request(DA,REGISTER_REQ,status,rfOnTime,rfOffTime) and MA_CONTROL.indication(REGISTER_REQ, status, flags, pending_grants, RTT, rfOnTime, rfOffTime) and MA_CONTROL.request(DA, REGISTER, LLID, status, pending_grants, rfOnTime, rfOffTime) as well as from respective MPCPDUs

Response *Response Status* **U**

REJECT.
See Cmt# 3764

Cl **101** *SC* **101.1.3** *P* **128** *L* **1** # 3797

Hajduczenia, Marek Bright House Networks

Comment Type **ER** *Comment Status* **R** *Cl 45 Xref Tables, Soc*

Is there any reason why Table 101-1 could not be reproduced only once, say, in Clause 100 (first one to be read) and then just reference it in Clause 101 and wherever else it might be needed?

SuggestedRemedy

Consider merging Table 101-1 and Table 100-1 and Table 102–3 into a single one, preferably located in Clause 100, and then reference this table rather than repeat the same information in three different locations

Response *Response Status* **U**

REJECT.
A single table in Cl 100 would be inconvenient for the reader of Cl 101 or 102.
The task force should determine if this is accepted or rejected

Cl **01** *SC* **1.4** *P* **26** *L* **15** # 4030

Ran, Adee Intel

Comment Type **TR** *Comment Status* **R** *Def of Channel*

I was not aware until now that the term "channel" had such a limited definition in 802.3. This term is used in many places in 802.3 and also has a meaning in communictation engineering that is beyond the definition used here.

These definitions also go into the IEEE standards dictionary so should be precise and unambiguous. Unfortunately clause 11 can only be changed through maintenance.

This is also confusing since "OFDM channel" is also defined and it seems that in some cases (e.g. in 100.2.6.1) "channel" may refer to an OFDM channel. Also in use is "6 MHz channel" which is sometimes "6 MHz band". This inconsistency could result in a lot of more specific comments.

Please use a more specific term in this project instead of re-using this way too overloaded term.

SuggestedRemedy

Add a more specific definition such as "RF channel" or "EPoC channel" and use it instead where necessary.

Make sure that "channel" is always qualified correctly in clause 100, and reconcile usage of "band".

Response *Response Status* **U**

REJECT.
The TF believes we are using the term "channel" consistent with the definition in the current standard and changing that definition is beyond the scope of this project. If the commenter feels strongly abou t this definition please submit a maintence request.

Also please see related cmt# 3956, 4059

Cl **01** *SC* **1.4.134** *P* **26** *L* **14** # 4059

Zimmerman, George CME Consulting, Inc.

Comment Type **ER** *Comment Status* **R** *Def of Channel*

The generic definition of channel in 802.3 causes no end of pain, as it is a common word used (and tempting to use) in most PHY clauses (where the proper term is usually link segment). The tightening of the current definition to reference 10BROAD36 and Clause 11 is a recent fix to at least make the definition appropriately restricted. It is encouraged not to expand the use of the term "channel" without any modifiers (e.g., OFDM channel should be OK).

Even the use in clause 100 has inconsistent uses of the generic 'channel' and this defined term (e.g., "under baseline channel conditions...."). I highly recommend use a different term for the meaning of 'channel' as a tuned frequency band.

SuggestedRemedy

Replace uses of 'channel' where it means a band of frequencies dedicated to a certain service transmitted on the broadband medium. by not modifying the legacy defition, but inserting and using a new term:
'frequency channel' with the same defnition as currently listed and adding to the definition: "This is identical to the definion of 'channel' used in clause 11 and defined in 1.4.134, but is added to avoid confusion with the common, generic use of the term."

(note -frequency channel would be consistent with what is used in table 45-98c)

Response *Response Status* **U**

REJECT.
The TF believes we are using the term "channel" consistent with the definition in the current standard and changing that definition is beyond the scope of this project. If the commenter feels strongly abou t this definition please submit a maintence request.

Also please see cmt# 4030 and 3956

Cl **100** *SC* **100** *P* **77** *L* **1** # 4165

Dawe, Piers Mellanox

Comment Type **ER** *Comment Status* **R**

802.3 orders the clauses down the stack of sublayers, not up.

SuggestedRemedy

Swap clauses 100, PMD, and 101, RS/PCS/PMA.

Response *Response Status* **U**

REJECT.
There is precedence in prior EFM: Clause 60 "PMD" is before Clause 65 "RS, PCS, PMA 1000BASE-X" and Clause 75 "PMD 10GBASE-PR/PRX " is before Clause 76 "RS/ PCS, PMA 10G-EPON".

Cl **103** *SC* *P* *L* # 4168

Dawe, Piers Mellanox

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

PAR says:
It also extends the operation of Ethernet Passive Optical Networks (EPON) protocols, such as MultiPoint Control Protocol (MPCP)...

5C says:
EPoC will reuse the MAC Control and OAM as defined in the current IEEE Std 802.3 for EPON, with minimal augmentation if necessary, while developing new PHY specifications.

Objectives say:
Maintain compatibility with 1G-EPON and 10G-EPON, as currently defined in IEEE Std. 802.3 with minimal augmentation to MPCP and/or OAM if needed to support the new PHY.

Yet I see a whole new clause 103 that defines another MPMC from the ground up. That's not what the project promised.

SuggestedRemedy

Combine clauses 77 and 103. Use technology-neutral variable names rather than names like "laserOffTime" and "fecOffsetC".

Response *Response Status* **U**

REJECT.
The Task Force believes the addition of Cl 103 is consistent the projects PAR, 5C & objectives as quoted by the commenter and with previous EPON project deliverables whose PAR, 5C and Objectives included similar wording to create a standalone clause for MPCP. Furthermore that Task Force believes the risk of breaking something in Cl 77 outweights the burden of the addition of Cl 103.

P802.3ah created Cl 64. Multipoint MAC Control
PAR Scope: Define 802.3 Media Access Control (MAC) parameters and minimal augmentation of the MAC operation, physical layer
specifications, and management parameters for the transfer of 802.3 format frames in subscriber access networks at operating speeds within the scope of the current IEEE Std 802.3 and approved new projects
Technical Feasibility: "… The proposed project will, to the extent possible, re-use specifications developed by
other standards bodies and develop new specifications in accordance with the rigorous standards of proof applied to 802.3 projects. …"
Objectives:
"Support subscriber access network topologies:
- Point to multipoint on optical fiber …"
Provide a family of physical layer specifications:
- …
- PHY for PON, >= 10km, 1000Mbps, single SM fiber, >= 1:16,
- PHY for PON, >= 20km, 1000Mbps, single SM fiber, >= 1:16
- …"

P802.3av created Cl 77. Multipoint MAC Control for 10G–EPON
PAR Scope: The scope of this project is to amend IEEE Std 802.3 to add physical layer specifications and management parameters for symmetric and/or asymmetric operation at 10 Gb/s on point-to-multipoint passive optical networks.
Vote:
For (keep Cl 103):
Against (combine 103 & 77):
Abstain:

Technical Feasibility: "… This project reuses the Ethernet point-to-multipoint and point-to-point technologies that
proved to be stable and credible. The project will extend burst mode technology to 10Gb/s. …"
Objectives:
"Support subscriber access networks using point to multipoint topologies on optical fiber …
Provide physical layer specifications:
– PHY for PON, 10 Gbps downstream/1 Gbps upstream, single SM fiber
– PHY for PON, 10 Gbps downstream/10 Gbps upstream, single SM fiber

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Cl **100** *SC* **100.2.10.2** *P* **111** *L* **17** # 4171

Dawe, Piers Mellanox

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

"The required level for CLT upstream post-FEC error ratio is defined for AWGN as less than or equal to 10-6 frame loss ratio with 1500 byte Ethernet MAC packets." and
"100.2.12.2 CNU receiver capabilities
The required level for CNU downstream post-FEC error ratio shall be less than or equal to 10-6 frame loss ratio when operating at a CNR as shown in Table 100-15, under input load and channel conditions as follows with 1500 byte Ethernet packets.":
this is the PMD clause. The PMD doesn't contaiun the FEC: what does the PMD have to do to satisfy this condition?

SuggestedRemedy

Define PMD spec.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
"The required level for CLT upstream post-FEC error ratio is defined for AWGN as less than or equal to 10-6 frame loss ratio with 1500 byte Ethernet MAC packets. This section describes the conditions at which the CLT is required to meet this error ratio."

To:
"The required level for CLT upstream post-FEC error ratio is defined for AWGN as less than or equal to 10-6 frame loss ratio with 1500 byte Ethernet MAC packets. This section describes the conditions at which the PMD, PMA, PCS in conjunction are required to meet this error ratio. "

Cl **45** *SC* *P* **36** *L* **6** # 4180

Grow, Robert RMG Consulting

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

P802.3bw is defining the value 111101 which you show as reserved. As written, this could remove that definition. P802.3bp does not seem to have defined a value (bit should).
P802.3bv is defining 110101. Together, the three amendments are creating a quite sparse matrix, which could push 802.3bs for the mulitple port types it will define.
Taqble 45-7

SuggestedRemedy

I see three options:

1. Change the draft to accomodate amendments expected to be approved prior to yours (e.g., 802.3bw).
2. Define the value and in the editorial instruction indicate that the publication editor should take care of fixing the reserved values (what I currently have in P802.3bv)
3. One amendment could change the list style to individually list the sixteen 11xxxx reserved values (this would logically be P802.3bw, but could be P802.3bn). This would then allow all subsequent amendments to to simply change one line in the cell.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Set SCl to 45.2.1.6, Moved "Taqble 45-7" from SCl to Comment

Change Editors instruction from
"Change Table 45–7 as follows:" to
"Change row Table 45–7 follows (change “reserved” line(s) as appropriate for values defined by this and other approved amendments):"