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 **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 **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.
****
See email Nov 11
****
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 **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

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* **103.2.2.1** *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* **103.2.2.3** *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* **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 **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 **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 **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* **45.2.7a.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.