Cl **1** SC **1.4.244a** P **23** L **18** # 459

Thompson, Geoff GraCaSI S.A./Independent

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

I believe that this is the first use of the term “envelope” in this context. Please refer to it as a “timing envelope” to distinguish it from an envelope frame.

SuggestedRemedy

Change the following text: "In the Multi-Channel Reconciliation Sublayer (MCRS, see Clause 143), an envelope encapsulates data belonging to a specific LLID being transmitted on a specific MCRS channel," TO READ: "In the Multi-Channel Reconciliation Sublayer (MCRS, see Clause 143), a timing envelope encompasses data belonging to a specific LLID being transmitted on a specific MCRS channel,"

Response *Response Status* **U**

REJECT.

When selecting the term "envelope", the TF has reviewed the base document to ensure there was no conflict of terms. In the existing body of IEEE Std 802.3, the word "envelope" mostly used in two contexts:
1) "envelope frame(s)" - always used as this combination of words
2) Envelope of a signal - always clear from the PMD focus of a given clause.
The TF felt that using the word "envelope" by itself in EPON-related clauses will not be confusing to readers. However, the term "timing envelope" may be confusing because the term "envelope" is not related to time, but rather it is related to a number of bits/octets being transmitted or received.

Cl **1** SC **1.4.244b** P **23** L **22** # 460

Thompson, Geoff GraCaSI S.A./Independent

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

Per the previous comment, the general term "envelope" is already used elsewhere in 802.3. This will be a cause for confusion.

SuggestedRemedy

Please refer to the PON use at this level as a “timing envelope” to distinguish it from other uses of the term envelope. The change is needed here and many places elsewhere throughout your draft. Please do a global search and examine each use of the term "envelope" for possible modification.

Response *Response Status* **U**

REJECT.

There are no other "envelopes" used in the standard today, so there is no confusion with other terms. The term itself is defined as a term (1.4.244a) and used consistently throughout the draft.

See comment #459.

Cl **45** SC **45.2.3.6.1** P **39** L **40** # 117

Remein, Duane Futurewei Technologies, Inc.

Comment Type **TR** *Comment Status* **A** *45.2.3.6.1*

Register bits 3.9.0 to 3.9.7 appear to all advertise PCS type abilities.

SuggestedRemedy

Change:
"bits 3.8.9, 3.8.7:0, and 3.9.15:0." to
"bits 3.8.9, 3.8.7:0, and 3.9.17:0."
Note the "1" in 3.9.1x is in strike-out text.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See comment #80

Cl **45** SC **45.2.3.45a** P **43** L **47** # 118

Remein, Duane Futurewei Technologies, Inc.

Comment Type **TR** *Comment Status* **A** *Table 45-217a*

Table 217a is missing a definition for register bits 3.83.6:15

SuggestedRemedy

Add as first row of table:
3.83.15:6 | Reserved | Value always 0 | RO

Response *Response Status* **W**

ACCEPT.

Cl **45** SC **45.2.3.45a** P **44** L **10** # 120

Remein, Duane Futurewei Technologies, Inc.

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

Backwards the bits are in "3.1xx.0:15"

SuggestedRemedy

In 45.2.3.45a.x Change:
3.100.0:15 to 3.100.15:0 (4x total)
3.117.0:15 to 3.117.15:0 (4x total)
3.134.0:15 to 3.134.15:0 (3x total)

Response *Response Status* **W**

ACCEPT.

Hardly a TR comment material

Cl **56** *SC* **56.1.2** *P* **46** *L* **38** # 378

Dawe, Piers Mellanox

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

This PHY sensibly keeps the 25.78125 GBd line rate but uses stronger FEC with 20% (Fig 142-5) or 1-1/0.848 = 17.9% (142.2.4.2) overhead. Even after reclaiming about 3% by 257b recoding, that's around 21.4 Gb/s MAC rate, which is too far from 25 to say "nominal MAC data rate of 25 Gb/s".

SuggestedRemedy

Giving the PHY types names with 25G in them is fair, because that represents the technology used - but this part of the draft text is misleading.

In this paragraph, change "25 Gb/s" to "21.4 Gb/s" and "50 Gb/2" to "42.8 Gb/s".

Response *Response Status* **W**

REJECT.

The nominal (how quickly MAC transmits bits, i.e., what the resulting bit time is) MAC rate is correct in here, the effective MAC rate (how many bits it can effectively transmit within a second) is lower and affected by FEC overhead, just like any other PHY that uses FEC and PCS encoding. MAC does not always transmit data, but when it does, it transmits it at 25Gb/s

Cl **56** *SC* **56.1.3** *P* **51** *L* **6** # 427

Dawe, Piers Mellanox

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

The standard clause order is down the layer stack: MAC then RS then PCS then PMA then PMD. We are stuck with the eccentric order of some previous projects but we can do a new one right.

SuggestedRemedy

Renumber the clauses 141-144: MPMC then MCRS then PCS/PMA then PMD.
We can also order the existing columns in Table 56-3 from top to bottom - they don't have to be in numerical order

Response *Response Status* **W**

REJECT.

The clause order follows the clause order used by P2MP projects before.

Cl **141** *SC* **141.1.2** *P* **56** *L* **1** # 122

Remein, Duane Futurewei Technologies, Inc.

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

In Fig 141-1 (and the other similar figures in 142, 143, & 144) all show two 25GMII interfaces but never indicate use of the XGMII.

SuggestedRemedy

For each of the four figures in 2 places, adjacent to the right of OLT and ONU 25GMII, add "Note 1". Below the graphic and above the key add the following: "Note 1: in some instances of Nx25-EPON one-half of an XGMII (transmit or receive) may be paired with a complementary half (receive or transmit) of a 25GMII to provide a 25Gb/s downstream and 10Gb/s upstream interface."

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

This is true only for channel 0 interface. It is better to add two lettered footnotes:
a) (attached to the first 25GMII interface) - "In some instances of Nx25-EPON one-half of an XGMII (transmit or receive) may be paired with its complementary peer (receive or transmit) of a 25GMII to provide a 25Gb/s downstream and 10Gb/s upstream interface."
b) (attached to the second 25GMII interface) - "This interface may be absent in devices that do not support 50G-EPON PMDs."

Apply to ISO diagrams for .3ca in Clause 141, 142, 143, 144, and 56.

Cl **141** *SC* **141.2.6** *P* **59** *L* **18** # 405

Dawe, Piers Mellanox

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

Optical PMDs don't use a baseband signal! 1.2.3 says only "The modulation type (e.g., BASE) indicates how encoded data is transmitted on the medium".

SuggestedRemedy

So far, optical PMDs all have BASE in their name (so in effect, it just signifies Ethernet) and all use "intensity modulation". However, P802.3ct may call coherent PMDs "BASE" too. This cell could be left blank.

Response *Response Status* **W**

ACCEPT.

Cl **141** *SC* **141.5.1** *P* **66** *L* **27** # 416

Dawe, Piers Mellanox

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

An extinction ratio minimum of 8 dB sounds like an unhelpful constraint, which may force implementers to set up at worse TDP than they could have done.

SuggestedRemedy

Relax the extinction ratio minimum, add another OMA-TDP class at line 24 as necessary. This will cost the receiver nothing and widen the implementation options for the transmitter. Adjust note b from "at minimum extinction ratio" to "at 8 dB extinction ratio".

Response *Response Status* **W**

REJECT.

All PMD parameter calculations have been done around ER (min) of 8dB and any changes to ER value would cause ripple effects for all receive side specs. A complete proposal for Tx and Rx specifications for lower ER (min) value would be needed. To date experimental data shows ER (min) of 8dB not presenting any issues.

Cl **141** *SC* **141.5.1** *P* **66** *L* **34** # 417

Dawe, Piers Mellanox

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

10GBASE-SR: BER 1e-12, TDP max 3.9, mask {0.25, 0.40, 0.45, 0.25, 0.28, 0.40} ("no hits") or
{0.235, 0.395, 0.45, 0.235, 0.265, 0.4} at 5e10-5 hits/sample
40GBASE-SR4: BER 1e-12, TDP max 3.5, mask {0.23, 0.34, 0.43, 0.27, 0.35, 0.4} at 5e10-5 hits/ sample
25GBASE-SR: BER 5e10-5, TDEC max 4.3 dB, mask {0.3, 0.38, 0.45, 0.35, 0.41, 0.5} at 1.5e-3 hits/sample. KR FEC
25GBASE-LR, ER: BER 5e10-5, TDP max 2.7 dB, {0.31, 0.4, 0.45, 0.34, 0.38, 0.4} at 5e-5 hits/sample. KR FEC
This draft OLT: BER 1e-2, TDP max 1.5 dB, {0.25, 0.4, 0.45, 0.25, 0.28, 0.4} at 5e-5 hits/sample. QC-LDPC FEC
ONU BER 1e-2, TDP max 2 dB, mask coordinates as 25GBASE-LR, ER. QC-LDPC FEC

SuggestedRemedy

So we need a new mask hit ratio, somewhere near 1e-2, and should review the mask coordinates when that is known.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Insert an editor's note indicating that the new mask will be needed and submitted as a comment against the next draft(s).

Cl **141** *SC* **141.5.2** *P* **68** *L* **3** # 126

Remein, Duane Futurewei Technologies, Inc.

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

50/25GBASE-PQG-D2 and 50/25GBASE-PQX-D2 appear in Table 141-15 twice, once with a single receive wavelength and once with two.

The same issues exists in Tables 141-16, 141-17 & 141-18.

SuggestedRemedy

Remove the 2nd instance (indicating 2 center wavelengths) of both.

Response *Response Status* **W**

ACCEPT.

Cl **141** *SC* **141.5.2** *P* **68** *L* **32** # 418

Dawe, Piers Mellanox

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

If these PMDs use FEC, probably the stressed receive signal should be defined by SEC, J2 and J4, as 25GBASE-SR, LR and ER, rather than VECP, J2 and J9 as 40GBASE-SR4.

SuggestedRemedy

But as the pre-BER is 1e-2, even J4 is wrong. Maybe Jrms and J3 would be suitable. SEC can easily be defined for a BER of 1e-2.

Response *Response Status* **W**

REJECT.

Per http://www.ieee802.org/3/cc/public/adhoc/160907/tamura_3cc_adhoc_01.pdf, the current .3ca method of SRS measurement based on 100GBASE-LR/ER SRS is more conservative than SRS for a single wavelength of 100GBASE-SR4/LR/ER. There is no need to rework the specification at this time.

See http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/powell_3ca_2a_0719.pdf for detailed discussion.

Cl **141** *SC* **141.7.13.2** *P* **78** *L* **1** # 98

Anslow, Pete Ciena

Comment Type **ER** *Comment Status* **A** *redraw*

Some of the figures in the draft are appropriately drawn. However, a number of the figures are inserted as bit maps.
This has several drawbacks: the rendition of the figures is poor making small text difficult to read, the use of bit maps increases the file size unnecessarily, the text content of the figures is not searchable and most importantly, including non-editable figures makes life difficult if changes are required in Maintenance after the figure has been incorporated into the next revision.

SuggestedRemedy

Go through the entire draft replacing figures that have been pasted as bit maps with versions that are drawn in FrameMaker.
If there are any figures illustrating equations, use a vector graphics (e.g. .svg format) and apply any text annotations in FrameMaker.
Example figures needing to be replaced are Figures 141-3, 142-2, 142-5, 142-6, 142-7, 142-8, 142-9, 142-13, 142-14, 142-15, 142-16, 142-18, 143-1, 143-2, 143-3, 143-4, 143-5, 143-6, 143-7, 143-8, 143-9, 143-12, 143-13, 143-15, 143-16, 144-3, 144-4, 144-5, 144-6, 144-7, 144-8, 144-9, 144-10, 144-11, 144-12, 144-13, 144-13, 144-14, 144-15, 144-16, 144-17, 144-18, 144-20, 144-21, 144-22, 144-23, 144-24, 144-25, 144-26, 144-27, 144-28, 144-29, 144-31, 144-32, 144-33, 144-34, 142A-1

Response *Response Status* **W**

ACCEPT.

Cl **142** *SC* **142.1** *P* **105** *L* **1** # 371

Dawe, Piers Mellanox

Comment Type **ER** *Comment Status* **A** *redraw*

Per style manual "WGs should create their figures using programs that create vector output".

SuggestedRemedy

Import the figure a different way, or draw it in Frame. Same for figs 142-5 to 9, 13 to 16 and 18, 143-1 to 9, 12, 13, 15 and 16, 144-3 to 18, 20 to 29, 31 to 34, and 142A-1.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See comment #98

Cl **142** *SC* **142.1.1.1** *P* **103** *L* **29** # 490

Law, David Hewlett Packard Enterprise

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

There is no operator precedence defined in subclause 142.1.1.1 'State diagrams' or the referenced subclause 21.5. It is therefore unclear if an equations such as ClkXfr AND ParityLeft > 0 used on the transition from the OUTPUT_PARITY_PLACEHOLDERS state back to the OUTPUT_PARITY_PLACEHOLDERS state in Figure 142–11 'PCS Framer Process State Diagram' means (ClkXfr AND ParityLeft) > 0 or ClkXfr AND (ParityLeft > 0).

SuggestedRemedy

Add brackets as necessary to clarify the order used to evaluate state diagram transition conditions.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Set explicitly the order of precedence, per
http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/kramer_3ca_6_0719.pdf

Cl **142** *SC* **142.1.1.1** *P* **103** *L* **34** # 491

Law, David Hewlett Packard Enterprise

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

Subclause 142.1.1.1 'State diagrams' states that 'The notation used in the state diagrams follows the conventions in 21.5.' yet Figure 142–10 'PCS Input Process State Diagram', as an example, uses TxPrev = IBI_EQ AND TxNext != IBI_EQ on the transition from NEXT_VECTOR state to the RESET_XBUF state. According to the referenced subclause 21.5 the '*' symbol is used to represent a Boolean AND (see Table 21-1). Other state diagrams within the IEEE P802.3ca correctly follow the 21.5 conventions, such as Figure 144–5 'Control Parser state diagram'.

SuggestedRemedy

Consistently follow the conventions in 21.5 throughout the IEEE P802.3ca draft.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change "The notation used in the state diagrams follows the conventions in 21.5.", to "The notation used in the state diagrams follows the conventions in 21.5, with extensions listed in the following subclauses."

Cl **142** *SC* **142.2.1** *P* **110** *L* **24** # 138

Remein, Duane Futurewei Technologies, Inc.

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

We have "Inter-Burst Idle", "inter-burst idle", and "inter-burst idle pattern", "inter-burst idle EQ (IBI_EQ)". I believe these are almost, but not quite, same thing.

SuggestedRemedy

Make the following changes:
Pg 110 line 24 - OK as is, "Inter-Burst Idle" is defined as a control code denoted as /IBI/
Pg 121 line 32 - change "The IBI258 constant holds the value of the inter-burst idle pattern" to "The IBI258 constant holds the value equivalent to the Inter-Burst Idle pattern"
Pg 124 line 53 - change "inter-burst idle (IBI)" to "IBI258 (Inter-Burst Idle pattern equivalent)"
Pg 161 line 50 - change "this channel generates only inter-burst idles towards the xMII." to "the MCRS generates only IBI_EQ for this channel towards the xMII."
Pg 163 all lines OK as is.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Comment type changed to "T"

Terminology:

inter-burst idle – a general reference to a region or time interval between bursts. In MCRS, the inter-burst idle region is filled with IBI_EQs. In PCS, this region is filled with IBI258 blocks.

Inter-Burst Idle – the name of a xGMII control character, as defined in Table 144-2.
/IBI/ -shorthand notation for Inter-Burst Idle control character
IBI_EQ – an EQ that represents an inter-burst idle

Changes to the draft:

Pg 110 line 24 - OK as is, no changes needed
Pg 121 line 32 -- Use the following definition instead:
"The IBI258 constant represents an inter-burst idle block that is generated by the PCS Framer Process in the absence of any burst framing blocks, data blocks, or FEC Parity blocks."

Pg 124 line 53 -- Change "The PCS Framer Process monitors data from the InputFifo and transfers it to the TxFifo, inserting inter-burst idle (IBI), SyncPattern, parity placeholders (PAR_PLACEHLDR), and EBD258 as appropriate." to read "The PCS Framer Process monitors data from the InputFifo and transfers it to the TxFifo, inserting inter-burst idle blocks (IBI258), SyncPattern, parity placeholders (PAR_PLACEHLDR), and EBD258 as appropriate."
Replace two instances of IBI on page 125 with IBI258. Make sure IBI258 and EBD258 is italicized.

Pg 161 line 50 -- Use the following text:
"The channel transmits the envelopes or inter-envelope idle EQs (IEI_EQ values) in the absence of envelopes. When set to false, transmission on channel ch is prohibited and this channel generates only inter-burst idle EQs (IBI_EQ values) towards the xMII."

Pg 163 line 2 -- Italicize IEI_EQ and IBI_EQ, no other changes needed.

Cl **142** *SC* **142.2.4.2** *P* **116** *L* **5** # 379

Dawe, Piers Mellanox

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

I don't know what you mean by pi-1info. Similar problem at line 9.

SuggestedRemedy

Explain, or better, use more familiar notation

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

append the following sentence to the end of the paragraph on Page 116, Lines 3-5 : “pi(-1)_{info} represents the de-interleaver mapping of information bits that permutes u* to u’’.” and also append the following sentence to the end of the paragraph on Page 116, Lines 6-8: “pi_{parity} represents the interleaver mapping of parity bits that permutes p’’ to p*.”

Cl **142** *SC* **142.2.4.3** *P* **116** *L* **25** # 382

Dawe, Piers Mellanox

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

I don't know what you mean by "Omega networks".

SuggestedRemedy

Define what you are talking about. If it doesn't matter, don't mention them.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Add an informative reference to

Lawrie, Duncan H. (December 1975). "Access and Alignment of Data in an Array Processor". IEEE Transactions on Computers. C-24 (12): 1145–55.
https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1672750

at the first instance of Omega network used as a term

Cl **142** *SC* **142.2.4.3** *P* **117** *L* **48** # 383

Dawe, Piers Mellanox

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

I don't know what you mean this partial square bracket; it is not explained here or in 1.2 Notation

SuggestedRemedy

Use accessible notation instead: rounddown() or whatever is meant.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Add footnote under the formula, as follows: (copied from 77.2.2.4)

NOTE—The notation [] represents a floor function, which returns the value of its argument x rounded down to the nearest integer.

Cl **142** *SC* **142.2.4.3** *P* **118** *L* **1** # 384

Dawe, Piers Mellanox

Comment Type **TR** *Comment Status* **A** *machine-readable-files*

This says "Before entering WG ballot, content of individual seed tables will be published under http://standards.ieee.org/downloads/802.3/ in a machine readable format". But I don't see them there.

SuggestedRemedy

Sort it out.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See comment #442

Cl **142** *SC* **142.3.5.2** *P* **134** *L* **25** # 386

Dawe, Piers Mellanox

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

What PMA_UNITDATA.indication primitive?

SuggestedRemedy

I could not find the PMA service interface definition. Add it.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Insert http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/laubach_3ca_2a_0719.pdf ahead of existing 142.4.1 and renumber existing subclauses accordingly. Update PICS as needed.

Cl **142** *SC* **142.3.5.4** *P* **135** *L* **15** # 485

Slavick, Jeff Broadcom

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

In Figure 141-15 the exit from GET_NEXT_BLOCK has a conflict in exit criteria. If SignalFail and MatchFound are both true which path do you take?

SuggestedRemedy

Change the path to CHECK_CW_LEN to be "!SignalFail AND Matchfound…"

Response *Response Status* **U**

REJECT.

It is unnecessary to complicate this transition in the SD, since regardless of which of the two transitions the SD takes, it will end up in the same state.

Cl **142** *SC* **142.4** *P* **137** *L* **53** # 385

Dawe, Piers Mellanox

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

Missing text

SuggestedRemedy

Introduce / summarise the PMA

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See comment #386.

Cl **142** *SC* **142.4.1** *P* **137** *L* **3** # 387

Dawe, Piers Mellanox

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

This isn't an adequate definition of "differential encoding".

SuggestedRemedy

Define it properly, including: What is it for? When is it used or useful? What is it - is it "precoding"? Are Xi and Yi bits, 257-bit vectors, or what? What is "Register" - a 1-bit delay? Define what you mean by a + in a circle.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

(1) precoding was used (twice) interchangeably for differential encoding in D2.0 (once in 142.4.2 and once in Figure 142-20). The more commonly used industry term is differential encoding, so precoding will be removed from subsequent draft versions.
=> replace "precoding" with "differential encoding" in two the following locations
- Subclause 142.4.2
- Figure 142-20

(2) Text is proposed to be added to 142.4 as follows to provide a brief definition of differential encoding and some guidelines on usage.

142.4 Nx25G-EPON PMA
"The PMA includes a downstream differential encoding option at the serial bit rate (output bits represent changes to succeeding input values rather than respect to a given reference). This encoding technique facilitates the use of lower bandwidth receivers."

(3) Implement changes to Figure 142-19 and Figure 142-20 as shown in http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/powell_3ca_1a_0719.pdf (changed marked in red)

Cl **143** *SC* **143.2.4.4** *P* **147** *L* **2** # 261

D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei

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

use of red lines in Fig 143-3. See IEEE-SA Style Guideline - color should not be needed to interpret informatin, and line drawings should be saved as black/white
See also Fig 143-8, P 152

SuggestedRemedy

Save diagram in black /white

Response *Response Status* **U**

REJECT.

Color is not needed to interpret data and not referenced in text in any way

Cl **143** *SC* **143.3.3.6.2** *P* **165** *L* **3** # 489

Law, David Hewlett Packard Enterprise

Comment Type **ER** *Comment Status* **A** *redraw*

Subclasue 2.6.3 'Draft Standard Formatting Requirements' of the IEEE 802.3 Operations Manual states that 'The draft must be provided to the IEEE in Adobe® Framemaker. At a minimum this shall be completed prior to the Sponsor ballot however it is preferable that the draft be maintained in this format for its entire life.'. It appears, however, that at least some of the state diagrams are not in Frame and are instead imported pictures, for example 143-12 and 143-13.

SuggestedRemedy

Ensure that Figures are converted to Framemaker prior to Sponsor ballot, the earlier the better to ensure that any errors created during the conversion are caught as soon as possible. If you need help in doing this please let me know.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See comment #98

Cl **144** *SC* **144** *P* **180** *L* **1** # 464

Thompson, Geoff GraCaSI S.A./Independent

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

This clause is out of scope. It is shown in Fig. 144-2 as residing in the MAC sub-layer. This is a Physical Layer project which said it would "extend the operation of EPON protocols". That means to me the augmentation of what is specified in clause 64, not the creation of an entire new specification misplaced in the Physical Layer.

SuggestedRemedy

Rewrite the draft to fit what was promised in the PAR. Presumably that will include deleting lause 144.

Response *Response Status* **U**

REJECT.

The PAR scope states that this project "… also extends the operation of Ethernet Passive Optical Networks (EPON) protocols, such as MultiPoint Control Protocol (MPCP) and Operation Administration and Management (OAM)." Just like previous generations of Multi-Point Control Protocol (MPCP), the new generation uses GATE and REPORT MPCPDUs to provide time-based transmission arbitration for multiple connected ONUs. However, the new MPCP extends the existing MPCP specification by supporting multiple channels, and specifying finer granularity for transition units (2.56 ns EQs instead of 16 ns TQs). There are numerous other enhancements.

The TF strongly disagrees that the statement "extends the operation of Ethernet Passive Optical Networks (EPON) protocols, such as MultiPoint Control Protocol (MPCP)" implies that all the changes need to be confined to one of the existing MPCP clauses (see Clause 64 or Clause 77), and not be defined as a new clause. The TF made a decision to create a new clause instead of modifying an existing clause for clarity of presentation and for the convenience of users of the standard. This is not unlike an earlier WG decision to specify the simplified full-duplex MAC as a separate Annex 4A instead of modifying the operation of the existing CSMA/CD MAC in Clause 4.

Cl **144** *SC* **144.3.6.2** *P* **199** *L* **47** # 213

Remein, Duane Futurewei Technologies, Inc.

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

The description for the timestamp field is repeated 7x. We don't do this for other variable definitions
197/36
199/47
201/13
203/4
204/41
206/4
209/1

Similar situation exist for other fields.

SuggestedRemedy

Remove the description for all but the first instance of this field (pg 197 line 36). Note that the first instance of this is generic and does not mention OLT or ONU (which is good). Add a cross reference to the first definition instance "See 144.3.6.1" (with a live link of course).

Do the same for the following field def's (pg/line fieldname xRef):
200/9 LLID "See 144.3.6.1"
206/9 ChannelMap "See 144.3.6.1"
207/38 SP1Length "See 144.3.6.4"
207/42 SP2Length "See 144.3.6.4"
207/46 SP3Length "See 144.3.6.4"

Response *Response Status* **U**

REJECT.

Comment type changed to "T"

- Definitions of ChannelMap are different for GATE and DISCOVERY MPCPDUs
- Definitions of timestamp should be corrected and will therefore be different.
- Definitions of LLID are different for GATE and REPORT MPCPDUs
- Definitions of SPnLength are different in DISCOVERY and REGISTER MPCPDUs

Timestamps in GATEs are not the same as the content of MPCP Local time counter. Each timestamp is pre-compensated by the RTT value of the destination ONU.

Cl **144** *SC* **144.4.2.1** *P* **230** *L* **4** # 249

Remein, Duane Futurewei Technologies, Inc.

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

What prevents the OLT from persistently disabling the only DS channel an ONU has available and thereby breaking the ONU?

SuggestedRemedy

Add at the end of the para "The OLT shall not disable a downstream channel at the ONU if it is the single remaining enabled channel at that ONT"
Update PICS.

Response *Response Status* **U**

REJECT.

This would be a requirement to the MPMC Client (CCP), which is outside the scope of the standard. In general, we should not limit device capabilities, because an operator may make a mistake. Sometimes it may be necessary to disable all channels and brick the ONU in order to preserve the rest of EPON. NMS user interface usually have sufficient guards in place to prevent accidental misconfiguration.

Cl **144** *SC* **144.4.3.1** *P* **234** *L* **14** # 253

Remein, Duane Futurewei Technologies, Inc.

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

What prevents the "previous persistent state" for one channel combined with "previous persistent state" for another change from creating an ONU with all channels disabled and thereby appear to be broken?

SuggestedRemedy

Add footnote to PersistenceFlag = 1
1 The ONU shall refuse any instruction that would result in persistently disabling all channels in a given direction.

Response *Response Status* **U**

REJECT.

ONU shall never refuse a command from the OLT (NMS), no matter what the consequences to the ONU are. Any limitations, if needed, should be placed on the NMS, not on the ONU.