Comment Type: E
Comment Status: A

"15 least significant bits of the PHY ranging offset register." is not a full sentence, remove "." 

Suggested Remedy: Same for 1.1925.15:0 and 1.1926.15:0

Response Status: C

ACCEPT.

---

Comment Type: T
Comment Status: A

"Register 1929 is the most significant part of this number with bit 1.1929.4 being the MSB while register 1927 is the least significant part with bit 1.1927.0 being the LSB." - in previous registers, a much simpler (and clearer format) was used

Suggested Remedy: Change to "Bit 1.1929.4 is the MSB and bit 1.1927.0 is the LSB of the value.". Similar change needed in 45.2.1.148

Response Status: C

ACCEPT.

---

Comment Type: TR
Comment Status: A

"These bits indicate the time required by a CNU to respond to an EPoC Message Block received on the PHY Link and are a reflection of the PhyLinkRspTm defined in 102.2.6.3." - information on units is missing here - ms, ns, blocks, seconds, etc.

Suggested Remedy: Add information on the units for this register

Response Status: W

ACCEPT IN PRINCIPLE.

Add units for all CI 45 registers where applicable consistent with past practice

---

Comment Type: ER
Comment Status: R

Text is broken by tables.

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

Response Status: W

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.
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Type</th>
<th>Comment Status</th>
<th>Comment</th>
<th>Suggested Remedy</th>
<th>Response Status</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>3623</td>
<td>T</td>
<td>R</td>
<td>45.2.1.149 is not consistent with style used in other registers for some reason.</td>
<td>Change text to read: &quot;Registers 1.1933 and 1.1934 form a 32-bit 10GAPASS-XR PMA/PMD FEC codeword counter. Registers 1.1933 and 1.1934 shall be reset to all zeros when 1.1933 and 1.1934 registers are read by the management function or upon 10GAPASS-XR PMA/PMD reset. When registers 1.1933 and 1.1934 are read, register 1.1933 is read first and register 1.1934 is latched when (and only when) register 1.1933 is read. These registers are a reflection of the variable FecCodeWordCount defined in 101.3.3.1.6.&quot; Update PICS accordingly. Simialr changes in 45.2.1.150 and 45.2.1.151</td>
<td>REJECT.</td>
<td>Hajduczenia, Marek</td>
</tr>
<tr>
<td>3624</td>
<td>TR</td>
<td>C</td>
<td>45.2.1.149</td>
<td>The way number is mapped into register space in Table 45–98q and Table 45–98r is just odd: lower 13 bits first, then fraction, then middle 16, reserved block, and remaining 5 bits.</td>
<td>Change allocation to 1.1927.15:0 to cover bits [15:0], 1.1928.15:0 to cover bits [31:16], 1.1929.15:14 to cover bits [33:32], and then fractional bits in 1.1929.13:11. We will be left with 1.1929.10:0 for reserved space. Aply the change to Table 45–98q and Table 45–98r alike. Remove all references to &quot;UQ34.3 formatted number&quot; - it does not matter at all what format the original number is in. Replace with &quot;downstream PHY data rate&quot; in Table 45–98q and &quot;upstream PHY data rate&quot; in Table 45–98r</td>
<td>REJECT.</td>
</tr>
<tr>
<td>3625</td>
<td>E</td>
<td>A</td>
<td>45.2.1.149</td>
<td>missing space in &quot;Total FEC codewords counter[15:0]&quot; for 1.1933.15:0 and 1.1934.15:0</td>
<td>Insert missing space in front of &quot;&quot;]&quot; Simialr changes in Table 45–98t and Table 45–98u</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3626</td>
<td>E</td>
<td>A</td>
<td>45.2.1.152</td>
<td>missing space in &quot;RO,NR&quot;</td>
<td>Designators RO, R/W, NR, etc. are used with different formatting. In some register tables, they are listed one under another, with no &quot;;&quot; between them (less common) and in others, one after another separated by &quot;;&quot;.</td>
<td>ACCEPT IN PRINCIPLE. Check all tables with multiple entries, use comma space &quot;;&quot; for separator.</td>
</tr>
</tbody>
</table>

Comment ID 3627

Comment ID 3628

Comment ID 3629
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Response Status</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>3628</td>
<td>45</td>
<td>54</td>
<td>19</td>
<td>E</td>
<td>A</td>
<td>Remove extra space / align the text left.</td>
<td>C</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3629</td>
<td>45</td>
<td>55</td>
<td>24</td>
<td>T</td>
<td>A</td>
<td>Change &quot;Value of PHY Link differential TS is valid&quot; to &quot;1 = value of PHY Link differential TS is valid 0 = value of PHY Link differential TS is not valid&quot;.</td>
<td>C</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3630</td>
<td>45</td>
<td>55</td>
<td>43</td>
<td>TR</td>
<td>A</td>
<td>Description of bits 1.1949.7:0 is missing information on MSB / LSB as well as units in which the said difference is expressed.</td>
<td>C</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3631</td>
<td>45</td>
<td>55</td>
<td>49</td>
<td>TR</td>
<td>A</td>
<td>Multiple issues with the description of bits 1.1950.14:0: - wording does not read really English (rather sloppy sentences) - no MSB / LSB indication.</td>
<td>W</td>
<td>Written</td>
</tr>
<tr>
<td>3632</td>
<td>00</td>
<td>61</td>
<td>42</td>
<td>TR</td>
<td>A</td>
<td>Bits 1.1951.14:0 indicate CNU_ID for the CNU for which the value of PhyLnkDiffTS variable is calculated. Bits 1.1951.14:0 are valid only for the 10GPASS-XR-D PMA/PMD. Bits 1.1951.14:0 are reserved for 10GPASS-XR-U PMA/PMD and always return zero on read. Bits 1.1951.14:0 are a reflection of the PhyLnkDiffTS_CNU variable defined in 101.5.1.</td>
<td>W</td>
<td>Written</td>
</tr>
</tbody>
</table>

**Comment ID 3632**

Page 3 of 123

9/18/2015 2:08:45 PM
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Final Response

Comment Type T  Comment Status A
Sentence does not read right: "Bit 12.10240.3 when read as a one indicates that the values in the 10GPASS-XR receive MER measurement registers are valid for the channel indicated by the Receive MER Channel ID."

Also, it is typical to reference bit numbers, and not name of register bits

SuggestedRemedy
Change to "When read as a one, bit 12.10240.3 indicates that the values in the 10GPASS-XR receive MER measurement registers are valid for the OFDM channel indicated by bits 12.10240.2:0."

In line 49, replace "the Receive MER channel ID" with "bits 12.10240.2:0". The same replacement in Table 45–211f in Description field.

Response
ACCEPT IN PRINCIPLE.

Comment Type T  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:

other values are reserved

Response
ACCEPT IN PRINCIPLE.

Comment Type T  Comment Status A
No such reister name: "Receiver MER Channel ID"

SuggestedRemedy
Replace "indicated by the Receiver MER Channel ID" to "indicated by bits 12.10240.2:0 (Receive MER channel ID)"

Same replacement in Table 45–211g in Description field (two occurences), and also on p/l: 63/4, 63/9

Response
ACCEPT IN PRINCIPLE.

Comment Type T  Comment Status A

### Comment 3636

**Comment ID:** 3636  
**Type:** Technical  
**Comment Status:** Accepted  
**Response Status:** Closed  
**Comment:** 

> Register 12.10241 reflects the receive MER measure for OFDM subcarriers number 2 and 3. Register 12.10242 reflects the receive MER measure for OFDM subcarriers number 4 and 5. Finally, register 12.12287 reflects the receive MER measure for OFDM subcarriers number 4094 and 4095.  

**Suggested Remedy:** 

Modify to: “Register 12.10241 reflects the receive MER measured for OFDM subcarriers number 2 and 3. Register 12.10242 reflects the receive MER measured for OFDM subcarriers number 4 and 5. Finally, register 12.12287 reflects the receive MER measured for OFDM subcarriers number 4094 and 4095.” which is not consistent with text in line 30.

**Response:** 

Accept in principle.  

Change “measure for” to “measured on” (3x)  

To the end of the 1st sentence in this para add “except subcarriers one and two”

**Comment 3637**

**Comment ID:** 3637  
**Type:** Editorial  
**Comment Status:** Accepted  
**Response Status:** Closed  
**Comment:** 

> Which are first two subcarriers? “Note that the first two subcarriers are not reflected and are always excluded.”

**Suggested Remedy:** 

Modify to: “Note that the first two subcarriers (i.e., subcarriers number 0 and 1) are not reflected in register group 12.10241 through 12.12287 (10GPASS-XR receive MER measurement registers).”

**Response:** 

Accept.

**Comment 3638**

**Comment ID:** 3638  
**Type:** Editorial  
**Comment Status:** Accepted  
**Response Status:** Closed  
**Comment:** 

> What are “reggisters” in “10GPASS-XR receive MER measurement reggisters”

**Suggested Remedy:** 

Replace “reggisters” with “registers”

**Response:** 

Accept.

### Comment 3639

**Comment ID:** 3639  
**Type:** Editorial  
**Comment Status:** Accepted  
**Response Status:** Closed  
**Comment:** 

> “samples of the same symbol” - likely, “the same OFDM symbol” to be precise - the term “symbol” is ambiguous

**Suggested Remedy:** 

Change “samples of the same symbol” to “samples of the same OFDM symbol”

**Response:** 

Accept.

### Comment 3640

**Comment ID:** 3640  
**Type:** Editorial  
**Comment Status:** Accepted  
**Response Status:** Closed  
**Comment:** 

> A data transmission channel in which the transmitted data is carried over a large number of orthogonal QAM subcarriers.” - whether the number is large or small is irrelevant to a definition

**Suggested Remedy:** 

Change to “A data transmission channel in which the transmitted data is carried over a number of orthogonal QAM subcarriers.”

**Response:** 

Accept.

### Comment 3641

**Comment ID:** 3641  
**Type:** Editorial  
**Comment Status:** Accepted  
**Response Status:** Closed  
**Comment:** 

> a fixed point number” - “fixed point” is an adjective in this case, and should be spelled as “fixed-point”

**Suggested Remedy:** 

Change “a fixed point number” to “a fixed-point number”

**Response:** 

Accept.
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Response Status</th>
<th>Commenter</th>
<th>Comment</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>3642</td>
<td>T</td>
<td>A</td>
<td>C</td>
<td>Hajduczenia, Marek</td>
<td>aPhyType lists today PCS clauses only. For example: 10GBASE-T Clause 55 10 Gb/s DSQ128 10GBASE-PR Clause 76 10/10G-EPON 10 Gb/s 64B/66B yet for 10GPASS-XR lists also PMD clauses for some reason</td>
<td>SuggestedRemedy Change &quot;Clause 100, Clause 101, and Clause 102 up to 10 Gb/s 64B/66B OFDM downstream and up to 1.6 Gb/s 64B/66B OFDMA upstream&quot; to &quot;Clause 101 PCS up to 10 Gb/s 64B/66B OFDM downstream and up to 1.6 Gb/s 64B/66B OFDMA upstream&quot; Similar change in 30.3.2.1.3</td>
</tr>
<tr>
<td>3643</td>
<td>E</td>
<td>A</td>
<td>C</td>
<td>Hajduczenia, Marek</td>
<td>30.3.2.1.2 includes ATTRIBUTE APPROPRIATE SYNTAX: whereas other attributes in Clause 30 do not list them</td>
<td>SuggestedRemedy Remove ATTRIBUTE APPROPRIATE SYNTAX: from 30.3.2.1.2</td>
</tr>
<tr>
<td>3644</td>
<td>T</td>
<td>A</td>
<td>C</td>
<td>Hajduczenia, Marek</td>
<td>Attribute aMAUType makes reference to PHYs for different speeds, e.g.: 10GBASE-PR-D3 One single-mode fiber 10.3125 GBD continuous downstream / burst mode upstream OLT PHY as specified in Clause 75 Whereas aMAUType in this draft lists PCS/PMA for some reason: Coax cable distribution network PCS/PMA continuous downstream / burst mode upstream as specified in Clause 101</td>
<td>SuggestedRemedy Change Coax cable distribution network PCS/PMA continuous downstream / burst mode upstream as specified in Clause 101 to 10GBASE-XR Coax cable distribution network PHY continuous downstream / burst mode upstream PHY as specified in Clause 101</td>
</tr>
<tr>
<td>3645</td>
<td>E</td>
<td>A</td>
<td>C</td>
<td>Hajduczenia, Marek</td>
<td>&quot;1.1899&quot; in Table 45–3 should be shown in underline - this is the new value</td>
<td>SuggestedRemedy Underline &quot;1.1899&quot; in Table 45–3</td>
</tr>
</tbody>
</table>
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Corresponding Working Group: IEEE 802.3bn

Final Response

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**Comment ID:** 3646

**Comment ID:** 3647

**Comment ID:** 3648

**Comment ID:** 3649

**Comment ID:** 3650

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**Comment Type:** TR

**Comment Status:** A

Hajduczenia, Marek

Bright House Networks

**Comment Type:** ER

**Comment Status:** R

Hajduczenia, Marek

Bright House Networks

**Comment Type:** ER

**Comment Status:** A

Hajduczenia, Marek

Bright House Networks

**Comment Type:** ER

**Comment Status:** C

Hajduczenia, Marek

Bright House Networks

---

Number | SC | P | L | #  | Comment Type | Comment Status | Comment
---|---|---|---|---|---|---|---
3646 | 45 | 45.2.1 | 34 | 25 | TR | A | In Table 45–3, "1.1952 through 1.32767" and "1.1952 through 1.1957" are incorrect. Register 1.1952 is already in three times!!!
SuggestedRemedy
- Change "1.1952 through 1.1957" to "1.1953 through 1.1958"
- Change "1.1952 through 1.32767" to "1.1959 through 1.32767"

**Response Status:** W

ACCEPT.

---

Number | SC | P | L | #  | Comment Type | Comment Status | Comment
---|---|---|---|---|---|---|---
3647 | 45 | 45.2.1.4 | 34 | 38 | ER | R | 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 Status:** W

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 CI 45 outside the scope of 802.3bn. Perhaps a maintance request should be entered by the commentor.

---

Number | SC | P | L | #  | Comment Type | Comment Status | Comment
---|---|---|---|---|---|---|---
3648 | 45 | 45.2.1.6 | 35 | 10 | ER | A | Reserved reserved registers were marked as RO 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 1.7.15:10 to RO
- Change 1.7.7.6 to RO

**Response Status:** W

ACCEPT.

---

Number | SC | P | L | #  | Comment Type | Comment Status | Comment
---|---|---|---|---|---|---|---
3649 | 45 | 45.2.1.14a.1 | 37 | 25 | ER | R | "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 Status:** W

REJECT.

In this instance the usage 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.

---

Number | SC | P | L | #  | Comment Type | Comment Status | Comment
---|---|---|---|---|---|---|---
3650 | 45 | 45.2.1.131 | 37 | 48 | E | A | Bit register 1.1900.10 is marked as "R/w" and should be "R/W"
SuggestedRemedy
- Per comment

**Response Status:** C

ACCEPT.

---

**TYPE:** TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general

**COMMENT STATUS:** D/dispatched  A/accepted  R/rejected  O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn

**SORT ORDER:** Comment ID

**Comment ID:** 3650  Page 7 of 123

9/18/2015  2:08:45 PM
Comment Type  TR  Comment Status  A

SuggestedRemedy

- Change description to read:
  
  1 = frames with detected CRC40 errors are labelled as errored
  0 = frames with detected CRC40 errors are not labelled as errored

- Change naming of register to "CRC40 errored frames"

- Change content of subclause 45.2.1.131.3

Bit 1.1900.2 is used control whether frames with detected CRC40 errors are labelled as errored before being passed to higher layers, as described in 101.3.3.1.4. This bit is a reflection of the variable CRC40ErrCtrl defined in 101.3.3.1.6.

Response  Response Status  W

ACCEPT IN PRINCIPLE.

change description to read:

1 = 65-bit blocks with detected CRC40 errors are labelled as errored
0 = 65-bit blocks with detected CRC40 errors are not labelled as errored

- Change naming of register to "CRC40 errored blocks"

- Change content of subclause 45.2.1.131.3

Bit 1.1900.2 is used control whether 65-bit blocks with detected CRC40 errors are labelled as errored before being passed to higher layers, as described in 101.3.3.1.4. This bit is a reflection of the variable CRC40ErrCtrl defined in 101.3.3.1.6.

Response  Response Status  C

ACCEPT IN PRINCIPLE.

In Tables 101-1 change the following cell:
"CRC40 errors" to "CRC40 errored blocks"

Comment Type  T  Comment Status  A

SuggestedRemedy

- Change "This bit is defined for the 10GPASS-XR-U PMA/PMD only, in the 10GPASS-XR-D PMA/PMD it is always read as a one." to: "This bit is defined for the 10GPASS-XR-U PMA/PMD only, in the 10GPASS-XR-D PMA/PMD it is always read as a one."

Response  Response Status  C

ACCEPT IN PRINCIPLE.

When read as a one, bit 1.1900.1 indicates that the 10GPASS-XR PHY has completed PHY Discovery ... since this subclause is in the PMA/PMD register block, likely we should be speaking of "PMA/PMD" and not "PHY"

SuggestedRemedy

- Change "PHY" to "PMA/PMD" in subclause 45.2.1.131.4 and other subclauses in 45.2.1

Response  Response Status  C

ACCEPT IN PRINCIPLE.

Make the suggested change at the discretion of the Editor. Note that in some instances PHY is correct (see cmt# 3657).
Comment Type: T
Comment Status: A

Unnecessary requirement (IMO): "Bit 1.1900.0 shall default to zero so that no transmission ...* - it is also a repetition of the statement in line 49.

Suggested Remedy:
Change "Bit 1.1900.0 shall default to zero so that no transmission .. " to "Bit 1.1900.0 defaults to a zero so that no transmission .. "
Remove line 50, page 38 - it is not needed any more
Alternatively, strike the sentence "Bit 1.1900.0 shall default to zero so that no transmission is allowed by the EPoC CNU or CLT prior to being properly configured to operate in the coaxial cable distribution network under which it is being installed," altogether leaving line 50 inact - the reasons for setting it to zero are irrelevant to the spec.

Response: ACCEPT IN PRINCIPLE.

Globaly change "a zero" to "zero" (14x) and "a one" to "one" (25x)

Comment Type: E
Comment Status: A

"The default value for bit 1.1900.1 is zero." - "zero" or "a zero"? I find more instances of where "a zero" and "a one" is used than "zero" / "one" with no preceding article.

Suggested Remedy:
Consider aligning the use of articles before "one" / "zero"

Response: ACCEPT IN PRINCIPLE.

Globaly change "a zero" to "zero" (14x) and "a one" to "one" (25x)
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Comment ID 3659
Hajduczenia, Marek  Bright House Networks

Comment Type: E  Comment Status: A

"When bit 1.1901.15 is set to a one the output port" - missing comma after "a one"

Suggested Remedy:
Scrub remaining register bit definitions to make sure that the comma is not missing. There are at least 3 more instances I found when looking at them in a cursory fashion.

Response Status: C
ACCEPT.

Comment ID 3660
Hajduczenia, Marek  Bright House Networks

Comment Type: TR  Comment Status: A

"CLT operates as normal" - typically, PHYs have "normal mode" and "test mode" defined, so it is easy to reference "CLT PMA/PMD enters the normal mode" or "CLT PMA/PMD enters the test mode"

Suggested Remedy:
Define "test mode" with a subclause in the draft - right now, test requirements are kind of spread all over the place, popping up in different subclauses. This needs to be organized in a way where we can point to a single location (at best) where the test mode is defined. Make sure that it is called "test mode" consistently in the draft - right now it is referenced to as "test conditions", "test operation", etc.
Anything else will be called "normal mode".

Change "When bit 1.1901.15 is set to a one the output port of the CLT is muted for testing purposes, when this bit is set to a zero the CLT operates as normal (see 100.1.3)" to read
"When bit 1.1901.15 is set to a one the output port of the CLT is muted for testing purposes, when this bit is set to a zero the CLT PMA/PMD enters the test mode and it is muted. When bit 1.1901.15 is set to a zero, the CLT PMA/PMD enters the normal mode." - it also is not clear what the reference to "(see 100.1.3)" was really supposed to do in this statement - it does not point to anything that describes normal or test mode.

Response Status: W

ACCEPT IN PRINCIPLE.
With the exception of CLT output port muting, we don't define a general test or normal mode. Note that subclause 100.3 was created based on the Commenter's prior comments to group what are testing conditions into a separate subclause, this includes operational and performance requirements that must be met when the system placed into specific configurations to accommodate testing.

Change:
"When bit 1.1901.15 is set to a one the output port of the CLT is muted for testing purposes, when this bit is set to a zero the CLT operates as normal (see 100.1.3)" to read
"When bit 1.1901.15 is set to a one the CLT PMA/PMD transmitter enters the test mode and it is muted. When bit 1.1901.15 is set to a zero, the CLT PMA/PMD enters the normal operating state."
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Comment ID 3662

Cl 45 SC 45.2.1.132.4 P 39 L 42 # 3662

Hajduczenia, Marek
Bright House Networks

Comment Type TR
Comment Status A
Clock Terminology Soc

Clause 45 is the "only" location where the term "OFDM clock sample" is used. In Clause 101 it has many names, including "OFDM symbol clock", "sample clock period" and others.

SuggestedRemedy
Please align the terminology and avoid defining PHY-specific parameters in Clause 45 that are not aligned with what is used in PHY clause 101.

Once the proper term is defined by TF, change "Bits 1.1901.6:4 indicate the size, in OFDM clock samples (204.8 MHz)," to "Bits 1.1901.6:4 indicate the size, expressed in multiples of XXX (see xxx),", where XXX is the term that is selected and xxx is the reference where it is defined in Clause 101.

There are at least several other locations in Clause 45 where similar changes are needed: 45.2.1.132.5, 45.2.1.134.3, 45.2.1.134.4, 45.2.1.142.1, 45.2.1.144, 45.2.1.146, given that they rely on the same unit.

Response
ACCEPT IN PRINCIPLE.

Comment ID 3663

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 explicit.

Response
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.
**IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments**

**Response**

<table>
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<tr>
<th>Comment ID</th>
<th>Comment Type</th>
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<th>Comment</th>
<th>Response Status</th>
</tr>
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<tbody>
<tr>
<td>3666</td>
<td>TR</td>
<td>A</td>
<td>&quot;Register 1.1902 specifies the center frequency for the first OFDM channel.&quot; should indicate how bits are assigned within the given register.</td>
<td>W</td>
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<td></td>
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<td>SuggestedRemedy</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Change to &quot;Bits 1.1902.15:0 specifies the center frequency of subcarrier 0 for the OFDM channel number 0.&quot; - this will align the wording with Table 45–98c, fix the issue with OFDM channel numbering, and also focus on bits of register and not register itself. What is missing is where in this register we have MSB and LSB - add it to the definition to make sure that the numbers are encoded in an interoperable fashion.</td>
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<td></td>
<td></td>
<td></td>
<td>Apply to 45.2.1.133.1 through 45.2.1.133.5.</td>
<td></td>
</tr>
<tr>
<td>3667</td>
<td>E</td>
<td>A</td>
<td>Contrary to state diagrams, we are not very pressed for space in Clause 45 when defining register/ bit names.</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>SuggestedRemedy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rename &quot;Rnd&quot; to &quot;Random seed&quot; in Table 45–98d and title of 45.2.1.134.1</td>
<td></td>
</tr>
<tr>
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<td></td>
<td>Rename &quot;RB size&quot; to &quot;Resource Block size&quot; in Table 45–98d and title of 45.2.1.134.2</td>
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<tr>
<td>3668</td>
<td>E</td>
<td>A</td>
<td>Missing space in &quot;RB size(1.1907.7)&quot; between register name and opening paren</td>
<td>C</td>
</tr>
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<td></td>
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<td></td>
<td>SuggestedRemedy</td>
<td></td>
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**Response**

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<tr>
<td>3669</td>
<td>TR</td>
<td>A</td>
<td>For all registers carrying specific values (and not just binary flags), you need to indicate where MSB / LSB is located to make sure that all implementations encode the value in the same way.</td>
<td>W</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SuggestedRemedy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Insert statement into 45.2.1.134.1, 45.2.1.134.3, 45.2.1.134.4, and many others in registers being added under 802.3bn. I am not sure whether there is an alternative approach where this can be defined up front and applicable to all registers</td>
<td></td>
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<td></td>
<td></td>
<td>Response</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACCEPT IN PRINCIPLE.</td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td>Changed to Cl 00 so comment change is implemented in Cl 100, 101 &amp; 102.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>At the end of the para in 100.1.5, 101.1.3 and 102.1.8 add the following.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;The most significant bit in each variable is mapped to the highest numbered bit in the highest numbered register for Clause 45 registers.&quot;</td>
<td></td>
</tr>
</tbody>
</table>
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

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?

Suggested Remedy

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 = reserved
3 = reserved
2 = 512 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.

Passed by voice without opposition

For (reject):
Against (change variable name):
Abstain:

Comment ID 3670 Page 13 of 123

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID

9/18/2015  2:08:45 PM
Comment Type: TR/technical required
Comment Status: A
Suggested Remedy:
"writes to all upstream profile variables are ignored" - does it apply to registers or variables in state diagrams?

Similar, the statement on "switching between profiles is prohibited" needs to be clarified as to how that is done (by setting some register to specific value as long as the copy is in progress, or entering some specific state in state diagram???)

Response
Accept in principle.
Change pg 43 in 38
"writes to all upstream profile descriptors and their reflective registers (see 45.2.7a.3 and 101.4.1.1) are ignored, and switching between profiles (see 102.2.3.1.1) is prohibited."

Change pg 44 in 4
"writes to all upstream profile descriptors and their reflective registers (see 45.2.7a.2 and 101.4.1.1) are ignored, and switching between profiles (see 102.2.3.1.1) is prohibited."

(footnote change of upstream -> downstream)

Comment Type: E
Comment Status: A
Suggested Remedy:
"this process which is fully described in 102.4.1" - no need to qualify whether it is fully or not fully described somewhere else

Response
Accept.

Comment Type: TR/technical required
Comment Status: A
Suggested Remedy:
"Bits 1.1910.9:8 indicate the value of the most recently received upstream Configuration ID bits (see 102.2.3.1)." - it is not clear what reference to 102.2.3.1 is supposed to clarify here. Figure 102-1 does not help here either.

Response
Accept in principle.
Change reference to 102.2.3.1.1
Comment Type: T  Comment Status: A  Soc

Comment:

Unnecessarily wordy definition and uses style different from other register definitions.

Suggested Remedy

Change to read:

"Bit 1.1915.15 indicates if the associated CNU_ID value has been assigned to a CNU by the PHY. When this bit is set to one, the associated CNU_ID has been assigned to a new CNU whereas when set to zero the associated CNU_ID has not been assigned."

Comment Status: A  Response Status: C

Response:

ACCEPT IN PRINCIPLE.

Remove "as determined by the PHY Discovery process" from Table 45–98l.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Comment Type: TR
Comment Status: A

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

Suggested Remedy:
Remove 1.1920 definition, renumber all existing register numbers following 1.1919 by one.

Response Status: W

Response:
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"

Comment Type: E
Comment Status: A

minor wording improvement for "Registers 1.1923 and 1.1922 form a signed 32-bit integer in units of 1/204.8 MHz."

Suggested Remedy:
Change to "Registers 1.1923 and 1.1922 form a signed 32-bit integer, expressed in units of 1/204.8 MHz." - it would be also nice to name the unit 1/204.8 MHz that appears in multiple locations in the draft and rather than repeat them over and over again, just reference to them by name

Similarly change in 45.2.1.145.1, "value in units of 1/4 dB" to "value expressed in units of 1/4 dB"

Response Status: C

Response:
ACCEPT IN PRINCIPLE.

Change
"Registers 1.1923 and 1.1922 form a signed 32-bit integer in units of 1/204.8 MHz. Bit 1.1922.0 is the LSB of this parameter and bit 1.1923.15 is the MSB. A negative value causes the timing of the CNU transmissions to be delayed. The PHY timing offset register is used to align the CNU to the upstream OFDM timing. For more information on the use of this register see 102.4.1.6. The assignment of bits in the PHY timing offset registers is shown in Table 45–98n. These registers are a reflection of the variable PhyTimingOffset defined in 102.4.1.8.2."

to
"The assignment of bits in the PHY timing offset registers is shown in Table 45–98n. Registers 1.1923 and 1.1922 form an offset register used to align the CNU to the upstream OFDM timing. For more information on the use of this register see 102.4.1.6. These registers are a reflection of the variable PhyTimingOffset defined in 102.4.1.8.2."

This avoids duplication of information in normative definition of PhyTimingOffset

Note that MSB/LSB issues are resolved in Cmt#3669
What is the different between "signed 32-bit integer" and "32-bit integer"? We explicitly use the word "unsigned" when we care only about non-negative values (0 onwards), use "signed" when we care that we can represent negative values. When no qualifier is present, does it mean we do not care?

Suggested Remedy
use "signed" when negative numbers are expected to be stored, and "unsigned" when non-negative values are expected. Scrub Clause 102 and Clause 103 to make all integer variables consistent. 

ACCEPT IN PRINCIPLE. Add "unsigned" where required.

Note that "signed integer" does not appear in Section 5 of P802.3bx Draft 3.2 so this request seems somewhat arbitrary. If the commenter feels strongly it is suggested a maintenance request be submitted against the standard.

DIFFERENT WAYS OF DESIGNATING BITS FROM THE GIVEN VARIABLE MAPPES INTO SPECIFIC REGISTER BITS.

Suggested Remedy
Align the format of referencing to bit ranges to "[x:y]" format for all registers added in Clause 45.

This is especially important in Table 45–98q, Table 45–98r, where "lowest, highest, middle" bit designators are used, and [x:y] format would be much more readable.

Response
ACCEPT.

Impact to the following tables: 98j, 98l, 98n, 98p, 98q, 98r, 98s, 98t, and 98u (table with MW registers).

Ensure [x:y] where x > y

ACCEPT IN PRINCIPLE.

This text does not pertain to Clause 45; "The PHY power offset is used to set the CNU upstream transmitter power by indicating the relative change in transmission power level the CNU is to make in order that transmissions arrive at the CLT at the desired power level." - it has to do with the way the power level is set on the CNU and not with the register itself.

Suggested Remedy
Move the selected text to 102.4.1.6.

UNNECESSARY REFERENCE TO FORMAT OF THE REGISTER:

Suggested Remedy
Change to "Registers 1.1925 and 1.1926 represent the PHY ranging offset expressed in units of 1/204.8 MHz."

ACCEPT IN PRINCIPLE.

Change: Registers 1.1925 and 1.1926 represent the PHY ranging offset parameter which is an unsigned 32-bit integer in units of 1/204.8 MHz. This is used to provision a delay in the ranging response in the event there is an analog optical segment between the CLT and the CNUs as described in 102.4.1.6. The assignment of bits in the PHY ranging offset register is shown in Table 45–98p. These registers are a reflection of the variable PhyRngOffset defined in 102.4.1.8.2." to "Registers 1.1925 and 1.1926 represent the PHY ranging offset parameter. The assignment of bits in the PHY ranging offset register is shown in Table 45–98p. These registers are a reflection of the variable PhyRngOffset defined in 102.4.1.8.2."
Comment Type: T
Comment Status: A

Unnecessary details for Clause 45 register definitions: "This is used to provision a delay in the ranging response in the event there is an analog optical segment between the CLT and the CNU as described in 102.4.1.6".

SuggestedRemedy
Strike this sentence altogether.

Response
ACCEPT IN PRINCIPLE.
See 3686.

Comment Type: TR
Comment Status: A

Perfectly meaningless description for bits 1.1951.15:8: PhyDiscPwrStep Units and MSB/LSB information is missing in 45.2.1.163.1

SuggestedRemedy
Change to read: "Discovery Response power step requested by CLT"

Also, remove unnecessary details from 45.2.1.163.1: strike "if there is no acknowledgment from the CLT to a PHY Discovery Response from the CNU" - this is detail unnecessary for Clause 45.

information on units and MSB/LSB is still missing and needs to be added separately.

Response
ACCEPT IN PRINCIPLE.

Comment Type: E
Comment Status: A

"The assignment of bits in the US target receive power register register" - one too many "register" instances

SuggestedRemedy

Remove one of "register" instances.

Response
ACCEPT.

Comment Type: T
Comment Status: A

Missing information on unit and MSB/LSB location in 45.2.1.164. Also, footnote b) from Table 45–98ah should be moved to the main text and not hanging in the table

SuggestedRemedy
Add information on unit and MSB/LSB location in 45.2.1.164
Remove footnote b) in Table 45–98ah
Insert the following text at the end of line 33: "Bits 1.1952.9:0 are valid only for 10GBASS-XR-D PMA/PMD. Bits 1.1952.9:0 are reserved for 10GBASS-XR-U PMA/PMD and always read as zero."

Response
ACCEPT IN PRINCIPLE.
Per comment except for MSB/LSB issue see CMT# 3669.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Final Response

Hajduczenia, Marek
Bright House Networks

Comment ID 3692

#3692

Table 45–98ai contains several b) footnotes, which should be converted into text

Suggested Remedy

Remove all b) footnotes from Table 45–98ai.

Insert the followi text: "Bits 1.1953.8:0 are valid only for 10GBASS-XR-D PMA/PMD. Bits 1.1953.8:0 are reserved for 10GBASS-XR-U PMA/PMD and always read as zero." in 45.2.1.165.1 and then applied also to other subclauses: 45.2.1.165.2, 45.2.1.165.3, 45.2.1.165.4, and 45.2.1.165.5, with changes to bit numbers.

Response

ACCEPT.

Comment ID 3693

#3693

Sentence missin "." also does not read riht

Suggested Remedy

Chane "The assignment registers in the OFDM MMD is shown in Table 45–211a" to "The assignment registers in the OFDM MMD is shown in Table 45–211a." Move "of" between "assignment" and "registers" in the sentence and add period so it reads: "The assignment of registers in the OFDM MMD is shown in Table 45–211a."

Response

ACCEPT IN PRINCIPLE.

Comment ID 3694

#3694

Double "." at the end of line: "The assignment of bits in the DS OFDM channel ID register is shown in Table 45–211b. ."

Suggested Remedy

Replace "." with " ."

Response

ACCEPT.

Comment ID 3695

#3695

It would be helpful to specify what "first four subcarriers" means

Suggested Remedy

Add "(i.e., subcarriers number 0 through 3)" after "first four subcarriers"

Response

ACCEPT.

Comment ID 3696

#3696

Changing registers 12.1 through 12.1023 affects only the inactive profile

Suggested Remedy

Ambiguous what "these registers" means in "Changing these registers does not affect the mean. Also, no need to mention active profile here

Response

ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Response**

**Comment ID** 3700

---

**Comment ID** 3698

**Comment Type** E

**Comment**

Missing "." in line 16

**Suggested Remedy**

Add missing "." at the end of sentence

**Response**

ACCEPT.

---

**Comment ID** 3699

**Comment Type** E

**Comment**

Spurious "|" in line 10

**Suggested Remedy**

Remove "|" in line 10

**Response**

ACCEPT.

---

**Comment ID** 3700

**Comment Type** TR

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

**Suggested Remedy**

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".

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 changes in 45.2.7a.3 and subclauses.

**Response**

REJECT.

The Task Force removed the enum so as not to duplicate this information which may lead to inconsistencies and ambiguity.

On the contrary CI 45 is optional in its entirety. All normative information is contained in the variable definition.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Final Response

Comment ID 3701

Hajduczenia, Marek
Bright House Networks

# 3701

Comment Type E
Comment Status A

"the imaginary number setting for subcarrier 0 and so on" - since this is a complete example, "so on" is not needed

SuggestedRemedy
Remove "and so on"

Response
ACCEPT.

Comment ID 3702

Hajduczenia, Marek
Bright House Networks

# 3702

Comment Type T
Comment Status A

The text "Each number is a 16-bit signed fractional number conforming to the Q2.14 format." should reference to register format and not some "number". Q2.14 represents a real number, with 16 bits (2+14) and requires no more explanation - real number implicate fractional already

SuggestedRemedy
Change text to read: "The value in each register is a real number in Q2.14 format."

Response
ACCEPT IN PRINCIPLE.

Comment ID 3703

Hajduczenia, Marek
Bright House Networks

# 3703

Comment Type E
Comment Status A

"Furthermore, EFM also introduces the concept of EPON Protocol over Coax (EPoC)" - but we also have statement "EFM also introduces the concept of Ethernet Passive Optical Networks (EPONs)", making it a list of "also" statements looking just odd

SuggestedRemedy
Change "EFM also introduces the concept of Ethernet Passive Optical Networks (EPONs)" to "EFM introduces the concept of Ethernet Passive Optical Networks (EPONs)" and use proper markup for the removed word "also"

Response
ACCEPT.

Comment ID 3704

Hajduczenia, Marek
Bright House Networks

# 3704

Comment Type E
Comment Status A

Editorial markup gone wrong in: "Clause 76, and the RS for EPoC P2MP topologies is described in Clause 101"

SuggestedRemedy
remove underline under "Clause 76" and add it under "Clause 101"

Response
ACCEPT.

Comment ID 3705

Hajduczenia, Marek
Bright House Networks

# 3705

Comment Type E
Comment Status A

missing space at the end of "These rates are based on maximum mandatory modulation format in Table 100:3"

SuggestedRemedy
Add missing space

Response
ACCEPT IN PRINCIPLE.

Comment ID 3706

Hajduczenia, Marek
Bright House Networks

# 3706

Comment Type E
Comment Status A

"in downstream direction and up to 1.6 Gb/s in upstream direction" - missing "the" before "downstream" and "upstream"

SuggestedRemedy
For consistency, it seems that it is "the downstream direction" and "the upstream direction" everywhere else

Response
ACCEPT.
Either I have problems with eyes or symbols for floor and ceil functions are of different size.

Suggested Remedy

Please make sure both symbols are the same (have the same height)

Also, make sure that sentences for ceil and floor functions are together in the same para - there is no need to separate them into new paras

Response Response Status C

ACCEPT IN PRINCIPLE.

Will review FM and see if same font size. If they are the same, will adjust for editor's eyeball.

It is odd that the 10GPASS-XR-D type PMD is separated from sentence on 10GPASS-XR-U type PMD that happens to be in a separate para.

Suggested Remedy

Merge sentence in line 9 with sentence in line 13 into a single para. Sentence in line 10 to be added to the end of this new para.

Response Response Status C

ACCEPT.

Looking at Table 100-1, the use of "," in names of PMA/PMD variables is very inconsistent. It does not add to readability in any way, and just make typing them and reading them more complex.

Suggested Remedy

Since the use of "," in variable names is not consistent, and does not seem to follow any pattern at all, remove all ",".

Response Response Status C

REJECT.

This is "make work" for the editors at this point and may introduce problems.
<table>
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<th>Page</th>
<th>Line</th>
<th>Section</th>
<th>Type</th>
<th>Comment Type</th>
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<th>Suggested Remedy</th>
<th>Response</th>
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<td>E</td>
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<td>A</td>
<td>&quot;VALUE or Value?&quot;</td>
<td>&quot;VALUE&quot; would be more appropriate, given that we capitalize &quot;TYPE&quot; everywhere already</td>
<td>ACCEPT.</td>
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<tr>
<td>3714</td>
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<td>305</td>
<td>31</td>
<td>E</td>
<td>A</td>
<td>A</td>
<td>&quot;24 bit unsigned&quot;- &quot;24 bit&quot; is an adjective and should be hyphenated</td>
<td>Change &quot;24 bit unsigned&quot; to &quot;24-bit unsigned integer&quot;</td>
<td>ACCEPT.</td>
<td></td>
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<td>3715</td>
<td>3715</td>
<td>308</td>
<td>12</td>
<td>E</td>
<td>A</td>
<td>A</td>
<td>&quot;PHY_Overhead(). returns the number of octets that the PHY inserts during transmission of a particular packet.&quot;</td>
<td>Remove &quot;.-&quot; after &quot;()&quot; and before &quot;returns&quot;</td>
<td>ACCEPT.</td>
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<td>E</td>
<td>A</td>
<td>A</td>
<td>How much is &quot;largely&quot; 50%? 75%? Undefined quantifiers are not needed ...</td>
<td>Remove the word &quot;largely&quot;</td>
<td>ACCEPT.</td>
<td></td>
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<td>3717</td>
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<td>51</td>
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<td>A</td>
<td>A</td>
<td>In other locations, variables were italicized ...</td>
<td>Italicize laserOnTime, laserOffTime, rfOnTime, and rfOffTime</td>
<td>ACCEPT.</td>
<td></td>
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<td>3718</td>
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<td>318</td>
<td>26</td>
<td>E</td>
<td>A</td>
<td>A</td>
<td>If there are no functions defined, remove 103.3.3.3 altogether</td>
<td>Per comment</td>
<td>ACCEPT.</td>
<td></td>
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</tbody>
</table>
Figure 100-2 contains plenty of acronyms that are not immediately easily expandable to the full meaning. Please expand all acronyms from Figure 100-2 in the same way as they were done in Figure 100-1. The same comment applies to Figure 100-3, Figure 100-4, and Figure 100-5.

**Response**

**Response Status** W

ACCEPT IN PRINCIPLE.

There are three new acronyms that are different than Figure 100-1 is "IFFT" (change to "IDFT" with this comment), "FCP", and will move "CPW" to this list also. Expand "RS" to "Reconciliation" in the function box to match 100-1. Suggest not replicating all the acronyms from Figure 100-1.

Note: the intro and Figures 100-2 through 100-5 will be moving to Clause 101 after these changes have been made. As per comment #4021.

**Comment ID** 3719

---

Figure 100-2 through Figure 100-5 use very inconsistent capitalization for block names. Is there any reason why you use "Gearbox" but for example "FEC DECODER" (or other block names??)

**Suggested Remedy**

Rationalize block names. For example, "FEC DECODER" should be "FEC Decoder", "64B/66B DECODER" would become "64B/66B Decoder", etc. This is applicable to Figure 100-2 through Figure 100-5

**Response**

**Response Status** W

ACCEPT IN PRINCIPLE.

The "Gearbox" function was removed in a prior comment round and missed getting updated in this figure. Removing also removes the mentioned inconsistency as we are using all CAPS for functional block names consistently (mostly).

Action: 1) Remove "Gearbox" function box from Figure 100-5 and adjust figure accordingly, 2) change any lower case to CAPS in the mentioned figures except for cross references.

**Comment ID** 3720

---

"10GPASS-XR" with em-dash or "10GPASS-XR" with normal hyphen.

**Suggested Remedy**

Looking at recent projects and the way the PMD PHY names are spelled out, normal hyphen seems to be used. Please change all instances of "10GPASS-XR" with em-dash to "10GPASS-XR" with normal hyphen

**Response**

**Response Status** W

ACCEPT IN PRINCIPLE.

Peter says "It is a dash (not and en dash or an em dash)." Further make sure non-breaking (Esc - h). Verify/change throughout document to verify dash.

Changed to Clause 00.

**Comment ID** 3721

---

Since we are writing a new spec, we can at least be consistent about the units and the way they are expressed. The proper convention is to use statement: “expressed in units of XXX” and not just “in XXX”

**Suggested Remedy**

Align definitions of variables and constants, to make sure that when units are used, the statement to describe the unit goes like: “expressed in units of XXX”

**Response**

**Response Status** W

ACCEPT IN PRINCIPLE.

Change "in XXX" to "in units of XXX" where appropriate as this is consistent with the standard.
This constant is defined in 64.2.2.1 and is 16 ns. - if you already point to definition elsewhere, that is all you need - do not copy value.

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 sufficient - a full definition is a click away.

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 definition is normative.

In other locations, parameters were italicized and here they are present in " for some reason. The same observation in line 12

Consider using consistent markup for parameters and variables as italicized values, which are much more readable than parameter names marked in "

ACCEPT IN PRINCIPLE.

remove single quotes and italicize variable.

Text style !!!

Use the proper text style in 103.3.1 and in 103.3.1

Good catch. Reset to para style T,Text !!!

Missing closing paren in MA_CONTROL.request and MA_CONTROL.indication in Figure 103–14

Similarly in Figure 103–16, MA_CONTROL.request and MA_CONTROL indication

Add missing closing paren in both Figures

ACCEPT.
Hajduczenia, Marek
Bright House Networks

Comment Type ER Comment Status A

This is the first time that I see state diagrams defined in Tables :)

SuggestedRemedy
Change all "Table" cross references in lines 10-20 to "Figure"

Response Response Status W
ACCEPT.

Hajduczenia, Marek
Bright House Networks

Comment Type ER Comment Status A

Wrong text format for "MCI:MA_DATA.request(DA, SA, m_sdu_ctl)"

SuggestedRemedy
Apply proper text format per comment

Response Response Status W
ACCEPT IN PRINCIPLE.

Good catch. Change to Arial 8 pt to be consistent with template and rest of figure.

Hajduczenia, Marek
Bright House Networks

Comment Type ER Comment Status A

Wrong font format for lines
MCI:MA_DATA.request(DA, SA, m_sdu_ctl)
MACI(REGISTER, SA, LLID, status ? deregistered)

SuggestedRemedy
Apply proper text format per comment

Response Response Status W
ACCEPT IN PRINCIPLE.

Good catch. Change to Arial 8 pt to be consistent with template and rest of figure. (Note MACI(REGISTER, SA, LLID, status ? deregistered) already in proper fmt)
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

#3733

Cl 100 SC 100.1.4 P 83 L 6
Hajduczenia, Marek
Bright House Networks

Comment Type: T
Comment Status: A

"a variable rate that is determined when configured" - and what happens when PHY is reset, power cycled, or conditions on the cable plant change? I believe data rate reconfiguration takes place then as well, yet it is not listed here.

Suggested Remedy:
Provide text describing conditions under which data rate for EPoC PHY is determined. I assume it happens when the PHY is power cycled / reset, conditions on CCDN change to force changes in the number of ODFM carriers, and due to operator configuration change.

Response
ACCEPT IN PRINCIPLE.

On pg 83 line 7 add at end of para "See 102.4.3 for "reset on change" events which may affect rate calculations."

The first para of 100.2.6.1 & 100.2.6.2 detail which variable changes cause a recalculation of DS/US rate (resp.).

On pg 89 line 20 change
"continous and low density" to
"Type I and Type II"
and change ref from
"*101.4.2.6" to
"*101.4.3.6"

#3734

Cl 100 SC 100.1.5 P 84 L 38
Hajduczenia, Marek
Bright House Networks

Comment Type: T
Comment Status: A

Last column, line 38 contains statement "as above" - does it mean that this cell should contain value of 15:12? If so, why not just copy it in?????

Suggested Remedy:
Per comment - it is not clear what value is intended to be here. 15:12 seems like a likely suspect. There are also other instances of "as above" in the table without any need. Please use explicit values - such redirections are not needed.

Response
ACCEPT IN PRINCIPLE.

#3735

Cl 100 SC 100.2.1.2 P 86 L 21
Hajduczenia, Marek
Bright House Networks

Comment Type: T
Comment Status: A

"one modulated symbol encoded as an I / Q value pair " - what is this "I/Q value pair"?

Suggested Remedy:
Given that the "I/Q value pair" has not yet been defined and Clause 100 is where it is encountered first, either a) define it here, or b) put a reference to where it is defined so that a reader does not need to wonder what it is and what it is supposed to represent.

Response
ACCEPT IN PRINCIPLE.

On pg 88 line 7 add at end of para "See 102.4.3 for "reset on change" events which may affect rate calculations."

The first para of 100.2.6.1 & 100.2.6.2 detail which variable changes cause a recalculation of DS/US rate (resp.).

On pg 89 line 20 change
"continous and low density" to
"Type I and Type II"
and change ref from
"*101.4.2.6" to
"*101.4.3.6"

#3736

Cl 100 SC 100.2.2 P 87 L 14
Hajduczenia, Marek
Bright House Networks

Comment Type: T
Comment Status: A

Unnecessary repetition: "Tx_Enable takes the values of ON and OFF. When there is no RF signal being sent (OFF) the transmitter is in the OFF state." - it is already covered in the definition of PMD_SIGNAL.request primitive.

Suggested Remedy:
Remove the selected text.

Response
ACCEPT.

#3737

Cl 100 SC 100.2.4 P 87 L 23
Hajduczenia, Marek
Bright House Networks

Comment Type: T
Comment Status: A

... and what happens in CLT? Is the PMD transmit enable function always asserted (if so, where is this fact described) and if it is not defined at all, it would be nice to state just that.

Suggested Remedy:
Either a) include statement about what happens with PMD transmit enable function in CLT or b) indicate that it is not defined for CLT and CLT PMD is always enabled.

Response
ACCEPT IN PRINCIPLE.

EDITOR:
Hajduczenia, Marek
Bright House Networks

Comment ID 3737
Page 27 of 123

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID

9/18/2015 2:08:46 PM
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Comment ID 3738**

**Type:** T

**Comment Status:** A

**Suggested Remedy:**
- Remove statement

**Response:**
- ACCEPT.

**Comment ID 3739**

**Type:** T

**Comment Status:** R

**Suggested Remedy:**
- Strike this sentence - it does not add anything, given that this subclause is modelled as a standalone subclause and not delta from Clause 77

**Response:**
- REJECT.

**Comment ID 3740**

**Type:** T

**Comment Status:** A

**Suggested Remedy:**
- Change "length = length - fecPldSz[0]" to "length -= fecPldSz[0]"

**Response:**
- ACCEPT.

**Comment ID 3742**

**Type:** T

**Comment Status:** A

**Suggested Remedy:**
- change "ceiling" to ceiling function symbol per 77.2.2.4

**Response:**
- ACCEPT IN PRINCIPLE.

**Comment ID 3741**

**Type:** T

**Comment Status:** A

**Suggested Remedy:**
- Change "=" to "=" which is what I believe you intend to mean here (greater than or equal)

**Response:**
- ACCEPT IN PRINCIPLE.

Note: The spelling of "it's" in the draft has a typo.

Note the ceiling character could be added using the char code 00E9 & 00F9 (latin "e" with acute) in Symbol font via the utilities -> Character Palette menu however this would not work with any known compiler and is contrary to the common practice of putting pseudo code in Courier New font.
"For P2MP coaxial topologies, EFM supports EPoC operating with a nominal bit rate of up to 10 Gb/s in the downstream direction and up to 10 Gb/s in the upstream direction." - based on available upstream channel allocation, I am not sure how 10 Gb/s operation could be even theoretically achieved.

Suggested Remedy
Drill down the upstream data rates from 10 Gb/s to something that is more appropriate given the number of available upstream OFDM channels.

Similar modification will be needed on page 68, line 53.

Note that Table 56-1, Table 67-1, and even 100.1 list upstream speed as "up to 1.6 Gb/s".

ACCEPT.

Otherwise, cable operator configuration is based on local deployment conditions and drilling down is not possible.

Figure 100-3 has two instances of "PMD_SIGNAL.request()" entering PMD FUNCTIONS block from two different locations, which implies that they are one and the same, yet they are generated by different blocks.

Suggested Remedy
Rationalize the names of primitives as listed in the comment. One of them should be different. If they were to be the same (as 100.2.1.4 seems to imply), PMD_SIGNAL.request() should enter first PHY Link block and then leave going into PMD FUNCTIONS block, which is not the case. Then the PMD_SIGNAL.request() primitive can ge generated in an additive fashion, and not create potential race conditions (what happens if one block sets it to ON and another to OFF - which takes priority then???)

Once the change is done, text describing the race condition on page 78, lines 1-7 can be simplified, to list only the fact that PMD_SIGNAL.request() is generated by either of the blocks in a cascade manner.

ACCEPT IN PRINCIPLE.
1) Modify Figure 100-3 to move left side PCS originated PMD_SIGNAL.request() to right side. Move PMD Functions to left to show both of these signals from PCS and PHY Link being "or" into the PMD_SIGNAL.request() that is input to the PMD FUNCTIONS block. Only label the output of the OR function as "PMD_SIGNAL.request()". (Technically, this is an OR signal bus with two generators and one detector.)
2) Page 86, Line 46. Remove the single sentence paragraph beginning with "In the upstream direction".
3) Change para beginning line 49:
   "The semantics of the service primitive are PMD_SIGNAL.request(Tx_Enable). The Tx_Enable parameter can take on one of two values: ON or OFF, determining whether the PMD transmitter is on (enabled) or off (disabled). The Clause 101 PCS generates this primitive to indicate a change in the value of Tx_Enable parameter. Upon the receipt of this primitive, the Clause 100 PMD turns the transmitter on or off as appropriate."
   to
   "In the CNU only, the semantics of the service primitive are PMD_SIGNAL.request(Tx_Enable). The Tx_Enable parameter can take on one of two values: ON or OFF, determining whether the PMD transmitter is on (enabled) or off (disabled). Upon the receipt of this primitive, the Clause 100 PMD turns the transmitter on or off as appropriate."
4) Change para beginning Page 87, Line 1:
   "In the CNU only both the PCS data detector and the PHY Link may set PMD_SIGNAL.request() (see 101.3.2.5.7 and 102.3.1.3). In the PMD, the ON value is the OR product of the PMD_SIGNAL.request() set to the value ON from the PCS data detector with that from the PHY Link; signaling RF power amplifier turn on to the PMD; either the PCS data detector or the PHY Link may signal ON. When both the PCS and the PHY Link set the value to OFF, this signals RF power amplifier turn off to the PMD."
   to
   "As input to the PMD, PMD_SIGNAL.request() is the OR product of the signal from PCS data detector (see 101.3.2.5.7) with that from the PHY Link (see 102.3.1.3) signaling RF power
amplifier turn on to the PMD; either the PCS data detector or the PHY Link may signal ON. When both the PCS and the PHY Link set the value to OFF, this signals RF power amplifier turn off to the PMD.*

The data rate of a 10GPASS-XR PHY is dependent on network configuration (see Table 56-1). - yet Table 56-1 lists only maximum values (up to) and says nothing about conditions you're referencing here, or what the relationship between said network conditions and effective data rate is.

It seems that reference to 100.2.6.1 and 100.2.6.2 for downstream and upstream directions, respectively, would be much better here, since at least you explain there how data rate is calculated.

It is not true that Table 56-1 lists the maximum values only. It lists both minimum and maximum values, and the effective data rate is determined by the minimum of the maximum and minimum values listed in the table.

There is no value in listing goals and objectives - new projects do not define them at all.

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 minimally on Clause 77, there is little sense to list such variables / functions.

There is no statement in Clause 103-1 that defines the MAC control operation for point-to-multipoint networks.

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.
"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.

Suggested Remedy
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.

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).

This constant represents the approximate size of FEC codeword in whole octets - is strikes me that approximate value requires information about precision, which is not given

Suggested Remedy
Change to "This constant represents the the integer number of octets in the FEC codeword."

DS_FEC_Pld_Sz + DS_FEC_Prty_Sz are both integers so no floor/ceiling function is needed.

ACCEPT IN PRINCIPLE.
Reword as suggested. Add the word "or" so value reads: 1760+2944/13 or 1760+(1840*64/65/8)

VALUE: 1760 1760 (220 block of 64-bits as seen from the MAC Table 101-2) - provide SINGLE value (why there are two???) and additional explanation is not needed - we do not need to justify the selected values, just provide the correct values

Suggested Remedy
Change to "Value: 1760"

ACCEPT IN PRINCIPLE.
Remove duplicate value, keep the clarification as an aid to the reader explaining how the value is derived.
Definition of Octet_CLK is unclear - the way it reads, it is held in TRUE state all the time

Suggested Remedy
Provide a clearer definition of what Octet_CLK is intended to do - it seems that it is a representation of a clock derived from MAC data rate, but note that MAC Control is NOT aware of the clock rate of MAC, and furthermore, it does not deliver data per octet, but rather whole frame at a time, and then waits for MAC to process - primitive is message and not octet oriented.

Response
ACCEPT IN PRINCIPLE.
Change the definition from "This Boolean value is TRUE for every octet time period, i.e. the amount of time used to transmit one octet in 10Gb/s MAC data rate." to
"This clear on read Boolean value is TRUE for every octet time period, i.e. the amount of time used to transmit one octet in 10Gb/s MAC data rate."

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

Suggested Remedy
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
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 ruling 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 definitions 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:

Multiple references to fecPldSz, fecCwSz variables / arrays without definition

Suggested Remedy
Define fecPldSz, fecCwSz (add to variables) or point to what they are (if defined elsewhere in text)

Response
ACCEPT IN PRINCIPLE.
Add variables
fecPldSz TYPE: integer  fecPldSz is an alias for DS_FEC_Pld_Sz
fecCwSz TYPE: real number  fecCwSz is an alias for DS_FEC_CW_Sz_FRAC
<table>
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<th>Page</th>
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<th>CL</th>
<th>SC</th>
<th>P</th>
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<td>33</td>
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<td>103</td>
<td>103.2.2.4</td>
<td>308</td>
<td>27</td>
<td>A</td>
<td>W</td>
<td>Hajduczenia,Marek</td>
<td>Given that beta is a parameter passed into Derating_Overhead function, it should be calculated first. Furthermore, given that it is calculated internally in the function, what is the point of passing it into PHY_Overhead function?</td>
</tr>
<tr>
<td>#3758</td>
<td>33</td>
<td>TR</td>
<td>103</td>
<td>103.2.2.4</td>
<td>308</td>
<td>24</td>
<td>A</td>
<td>W</td>
<td>Hajduczenia,Marek</td>
<td>FEC_CODEWORD_SIZE_FRAC, FEC_PAYLOAD_SIZE, and FEC_PARITY_SIZE are NOT defined anywhere</td>
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<tr>
<td>#3759</td>
<td>33</td>
<td>TR</td>
<td>103</td>
<td>103.2.2.4</td>
<td>308</td>
<td>27</td>
<td>A</td>
<td>W</td>
<td>Hajduczenia,Marek</td>
<td>XGMII_Rate and PCS_Rate is not defined in Clause 103. They are defined in Clause 101, but they should be listed as variables / constants in 103.2.2.3 and then point back to definition in Clause 101</td>
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</table>

**Suggested Remedy**

**Comment Status:** A  
**Response Status:** W  
**Response:**  
ACCEPT.

**Comment ID:** 3760  
**Page:** 33  
**Comment Type:** TR  
**CL:** 103  
**SC:** 103.2.2.7  
**P:** 309  
**L:** 49  
**Comment Status:** A  
**Response Status:** W  
**Response:**  
ACCEPT IN PRINCIPLE.  
Note that this SD is driven by Octet_CLK, whereas within MAC Control the notion of octet time does not really exist.

**Suggested Remedy**

The purpose of the state diagram in Figure 103-8 is not clear, as well as it is not clear how it interacts with other SDs (Figure 103-9 through 103-14)

**Response**  
ACCEPT IN PRINCIPLE.  
Change:  
"The Multipoint transmission control function in the CLT shall implement state diagram shown in Figure 103-9.* to :  
"The Multipoint transmission control function in the CLT shall implement state diagram shown in Figure 103-8 and Figure 103-9.*

**Comment ID:** 3761  
**Page:** 33  
**Comment Type:** TR  
**CL:** 103  
**SC:** 103.2.2.7  
**P:** 313  
**L:** 35  
**Comment Status:** A  
**Response Status:** W  
**Response:**  
ACCEPT IN PRINCIPLE.  
See CMT #3757.  
Change to "packet_initiate_delay <= PHY_Overhead(sizeof(data_tx) + tailGuard)"

**Comment ID:** 3762  
**Page:** 33  
**Comment Type:** TR  
**CL:** 103  
**SC:** 103.2.2.7  
**P:** 309  
**L:** 49  
**Comment Status:** A  
**Response Status:** W  
**Response:**  
ACCEPT IN PRINCIPLE.

**Comment ID:** 3763  
**Page:** 33  
**Comment Type:** TR  
**CL:** 103  
**SC:** 103.2.2.7  
**P:** 309  
**L:** 49  
**Comment Status:** A  
**Response Status:** W  
**Response:**  
ACCEPT IN PRINCIPLE.

**Comment ID:** 3764  
**Page:** 33  
**Comment Type:** TR  
**CL:** 103  
**SC:** 103.2.2.7  
**P:** 309  
**L:** 49  
**Comment Status:** A  
**Response Status:** W  
**Response:**  
ACCEPT IN PRINCIPLE.

**Comment ID:** 3765  
**Page:** 33  
**Comment Type:** TR  
**CL:** 103  
**SC:** 103.2.2.7  
**P:** 309  
**L:** 49  
**Comment Status:** A  
**Response Status:** W  
**Response:**  
ACCEPT IN PRINCIPLE.

**Comment ID:** 3766  
**Page:** 33  
**Comment Type:** TR  
**CL:** 103  
**SC:** 103.2.2.7  
**P:** 309  
**L:** 49  
**Comment Status:** A  
**Response Status:** W  
**Response:**  
ACCEPT IN PRINCIPLE.

**Comment ID:** 3767  
**Page:** 33  
**Comment Type:** TR  
**CL:** 103  
**SC:** 103.2.2.7  
**P:** 309  
**L:** 49  
**Comment Status:** A  
**Response Status:** W  
**Response:**  
ACCEPT IN PRINCIPLE.
Comment Type TR Comment Status A Beta
Note another comment about the use of Beta in equations, which does not change at all and does not need to be passed explicitly into functions!!!

SuggestedRemedy
Remove Beta in line 40 - it does not need to be passed explicitly into functions within SDs - it is not set anywhere in SD anyway

Response Response Status W
ACCEPT IN PRINCIPLE.
See CMT# 3757.

Comment Type TR Comment Status A
"The CLT shall ensure that a minimum gap time between bursts from any two CNUs equal to the transmission time of one (1) resource block expressed in units of time_quantaum." - what is the duration of the said "resource block" and where is it defined?

SuggestedRemedy
There is no need to recalculate "resource block" into time_quanta as long as there is definition of the said "resource block". Provide definition (or reference to definition) of resource block and remove "expressed in units of time_quantaum"

Response Response Status W
ACCEPT IN PRINCIPLE.
Now in draft we have a mix of "resource block" and "Resource Block" change so it is consistent.

RB_time_quanta should be used for this purpose

Change:
"The CLT shall ensure that a minimum gap time between bursts from any two CNUs equal to the transmission time of one (1) resource block expressed in units of time_quantaum." to
"The CLT shall ensure that a minimum gap time between bursts from any two CNUs equal to RB_time_quanta (see Eq(101-31))."

Italicise RB_time_quanta

Add Ref definition for RB_time_quanta
RB_time_quanta
see Equation 101-31

Update PICS CC5 accordingly.

Comment Type TR Comment Status A
rOn/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 rOfOffTime, rOnOffTime 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 W
REJECT.
rOfOffTime occurs 25 times and rOfOffTime occurs 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.

Comment Type TR Comment Status A
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 W
REJECT.
See Cmt# 3764

Add Ref definition for RB_time_quanta
RB_time_quanta

see Equation 101-31

Update PICS CC5 accordingly.
<table>
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<td>TR</td>
<td>R</td>
<td>But before it was stated that rfOnTime / rfOffTime do not have really any meaning in EPoC.</td>
<td>Remove rfOnTime / rfOffTime from primitives and respective MPCPDUs</td>
<td>REJECT.</td>
<td>See Cmt# 3764</td>
</tr>
<tr>
<td>3767</td>
<td>324</td>
<td>17</td>
<td>#</td>
<td>TR</td>
<td>A</td>
<td>Condition missing for transition between &quot;WAIT FOR REGISTER_ACK&quot; state and &quot;COMPLETE DISCOVERY&quot; state. Missing exit conditions from &quot;COMPLETE DISCOVERY&quot; state</td>
<td>Insert the missing conditions, likely following Figure 77–22</td>
<td>ACCEPT IN PRINCIPLE. Between WAIT FOR REGISTER_ACK and COMPLETE DISCOVERY add opcode rx = REGISTER ACK. Between COMPLETE DISCOVERY and VERIFY ACK add flag rx = ACK. Between COMPLETE DISCOVERY and DISCOVERY NACK add flag rx != ACK</td>
<td>W</td>
</tr>
<tr>
<td>3768</td>
<td>327</td>
<td>1</td>
<td>#</td>
<td>TR</td>
<td>A</td>
<td>The whole Report Processing is an exact mirror copy of Report Processing from Clause 77.</td>
<td>Leave &quot;Report Processing in EPoC is as described in 77.3.4.&quot; and remove everything else within 103.3.4 - repetition is not needed, there are no EPoC specific changes here.</td>
<td>ACCEPT.</td>
<td></td>
</tr>
<tr>
<td>3769</td>
<td>339</td>
<td>6</td>
<td>#</td>
<td>TR</td>
<td>A</td>
<td>&quot;Note that Figure 103–29 below is a copy of Figure 77-31 and is included for reference only.&quot; - such copies are not needed, especially since Figure 103-29 is neither referenced here not useful.</td>
<td>Remove statement &quot;Note that Figure 103–29 below is a copy of Figure 77-31 and is included for reference only.&quot; and Figure 103–29</td>
<td>ACCEPT.</td>
<td></td>
</tr>
</tbody>
</table>
Hajduczenia, Marek

### Comment Type
TR

### Comment Status
A

**Ark&Duane rOn/OffTime, Soc**

> The GATE used in EPoC is the same as that described in 77.3.6.1 with the following exceptions. In EPoC rOnTime and rOffTime replace laserOnTime and laserOffTime, respectively. The 16-bit Discovery Information register described in 77.3.6.1 is not used in EPoC; all bits in this register are reserved and ignored on reception.

Based on the reading of text previous to 103.3.6, I was under impression that rOnTime and rOffTime is not used at all and assigned always zeros - see 103.3.3.1. In this case, there is no need to shuttle them back and forth between CNU and CLT.

**Suggested Remedy**

Replace "The GATE used in EPoC is the same as that described in 77.3.6.1" with "The GATE MPCPDU used in EPoC is the same as that described in 77.3.6.1"

Replace "In EPoC rOnTime and rOffTime replace laserOnTime and laserOffTime, respectively. The 16-bit Discovery Information register described in 77.3.6.1 is not used in EPoC; all bits in this register are reserved and ignored on reception." with "The LaserOnTime, LaserOffTime, and Discovery Information fields described in 77.3.6.1 are not used in EPoC and are always set to zero on transmit and ignored on reception."

### Response

**Response Status**
W

**Accept in principle.**

Add to the end of the commented sentence "(see 64.3.6.2)"

Remove extra period and Figure 103-31 as suggested.

---

Hajduczenia, Marek

### Comment Type
TR

### Comment Status
A

**Multiple issues with MP PICS:**
- MP1: structure references 77.3.6 as normative, but Value points to Figure 103-29. Replace with proper Figure from Clause 77
- two MP16 entries: second one should be MP17
- the purpose of second MP16 is unclear: "MAC Control interface has priority over other clients" tracing the reference to "shall" indicates "In this case, one of the interfaces with a pending MAC Control frame shall be enabled as described in 64.2.2.4," but this statement back references 64.2.2.4, which has no such requirement. This item should be removed, together with the respective sentence in 103.2.2.4, which makes little sense.

**Suggested Remedy**

Per comment.

**Response**

**Response Status**
W

**Accept in principle.**

AIP - MP1: Replace fig ref with "Figure 77–31"

Accept - two MP16 entries: Replace second MP16 with one MP17

AIP - the purpose of second MP16 is unclear: Replace ref to 103.2.2.4 with 74.2.2.4
Comparing Gate Processing state diagram at CLT for EPoC and EPON (Figure 77-28), for some reason transition from SEND GATE / PERIODIC TRANSMISSION states is made back to WAIT state and not back to WAIT FOR GATE state as it is in Figure 77-28.

SuggestedRemedy
There is no justification for this change - please align with Figure 77-28.

ACCEPT.

It seems that Gate processing in EPoC uses the very same state diagrams as the ones used in EPON, with changes only to some of the values / parameters and their definitions:
- min_processing_time has different value in EPoC than in EPON
- BurstOverhead has different definition
- minor changes in effectiveLengthC relative to effectiveLength
- minor changes in maxDelay
- major changes in minGrantLengthC relative to minGrantLength
- minor changes in mdlyTmrC

SuggestedRemedy
Rather than replicate everything from 103.3.5, I suggest to do what follows:
- under 103.3.5, use the following text: "The Gate processing in EPoC is as described in 77.3.5, with changes to the following constants, variables, and functions as listed in the following subclauses."
- insert "103.3.5.1 Constants" with the following text: "See constants defined in 77.3.5.1, with the following EPoC-specific exceptions." + add min_processing_time definition and new value
- insert "103.3.5.2 Variables" with the following text: "See variables defined in 77.3.5.2, with the following EPoC-specific exceptions." + add only variables changed in EPoC
- similar change for "103.3.5.3 Functions" and "103.3.5.4 Timers"
- remove "103.3.5.5 Messages" - no changes from EPON, and "103.3.5.6 State diagrams" = again, no changes from EPON.

ACCEPT IN PRINCIPLE.

While I generally like the idea it would create problem in this instance as there are several difference between CI 77 & 103. For example:
- minGrantLength vs minGrantLengthC
- BurstOverhead(77) vs BurstTimeHeader()(103, includes BurstTimeHeader()).

Remove tqSizeC pg 331 in 38
Rename BurstTimeHeader() to BurstTimeHeaderC(), add to table 103-1
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Draft 2.0**

**Final Response**

**Comment** 3775

**Cl 100A SC 100A.2 P 352 L 4 # 3775**

Hajduczenia, Marek
Bright House Networks

**Comment Type** E  **Comment Status** A  **Homework Mark**

"These parameters are base on the following conditions:" - likely, "These parameters are >>based<< on the following conditions:"

**Suggested Remedy**

```
Response  Response Status  C

ACCEPT IN PRINCIPLE.
See comment #3778 and laubach_3bn_13_0915.pdf with changes illustrated in laubach_3bn_13_0915CMP.pdf
```

**Comment 3776**

**Cl 100A SC 100A.1 P 351 L 47 # 3776**

Hajduczenia, Marek
Bright House Networks

**Comment Type** TR  **Comment Status** A  **Homeworkk Mark**

Figure 100A-1 does not make much sense - it focuses on the application og CLT fed via OLT, which is outside of the scope of EPoC.

**Suggested Remedy**

```
Remove EPON OLT and connection from EPON OLT - CLT may be shown as fed from headend or located within the headend - it does not matter as far as EPoC architecture is concerned.
```

**Response  Response Status  W**

ACCEPT IN PRINCIPLE.
See laubach_3bn_13_0915.pdf with changes illustrated in laubach_3bn_13_0915CMP.pdf

**Comment 3777**

**Cl 100A SC 100A.1 P 351 L 22 # 3777**

Hajduczenia, Marek
Bright House Networks

**Comment Type** TR  **Comment Status** A  **Homeworkk Mark**

The upper part of Figure 100A-1 does not show CNU location - it is not clear what this is intended to demonstrate and how it relates with normative EPoC channel parameters.

**Suggested Remedy**

```
Remove the upper part of Figure 100A-1.
In the bottom part, demonstrate a connection from CLT, via optional amp, into a tap connected to a 2-way splitter and then EPoC CNU.
Demarc is not defined in any way, form, or fashion in EPoC and it is meaningless to demonstrate it in the figure.
```

**Response  Response Status  W**

ACCEPT IN PRINCIPLE.
See laubach_3bn_13_0915.pdf with changes illustrated in laubach_3bn_13_0915CMP.pdf

**Comment 3778**

**Cl 100A SC 100A.2 P 352 L 6 # 3778**

Hajduczenia, Marek
Bright House Networks

**Comment Type** TR  **Comment Status** A  **Homeworkk Mark**

The list in lines 6-14 is very confusing - it is quoted as normative, yet it covers a lot of services and definitions that are not defined in EPoC in any way, for example: "75 digital TV channels" - what impact does it have and why it is even important?

**Suggested Remedy**

```
Remove the list and statement "These parameters are base on the following conditions:" -
Table 100A-1 should be sufficient to characterize the EPoC CCDN.
Similarly, the list in 100A.3 and statement "These parameters are base on the following conditions:" above need to go.
```

**Response  Response Status  W**

ACCEPT IN PRINCIPLE.
Page 252 is incorrect, assuming page 352.

See laubach_3bn_13_0915.pdf with changes illustrated in laubach_3bn_13_0915CMP.pdf

**Summary of changes:**
Line 6, "base" should be "based"
Otherwise, Table 100A-1 is based on the required system setup as described in Lines 6 through 13 and removal of the list would remove the setup conditions and would be inappropriate for the model and establishment of baseline channel conditions. Same with the following subclause.

Add reference to SMRP and Modern Cable Television Technology in a note.

The TF believes that Table 100A-1 is clear to those skilled in the art of HFC and OFDM.

---

**Note:**

- **TYPE:** TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
- **COMMENT STATUS:** D/dispatched  A/accepted  R/rejected  W/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
- **SORT ORDER:** Comment ID

Comment ID 3778  Page 38 of 123  9/18/2015  2:08:46 PM
There are numerous issues with Table 100A-1, mainly in terms of missing definitions and impact on CCDN definition required for EPoC:
- Frequency range: is this the intended minimum frequency range for cabling supporting EPoC? If not, what is it then?
- what is "OFDM Bandwidth"? It is used in table as normative, yet it seems that it is the EPoC ODFM band but defined using a different term. Rationalize with the rest of the draft
- what is CPE in "OFDM Power at CPE Input"? It seems that it is the power level at input to CNU?
- "BW" is used quite liberarly as a short form for "bandwidth", yet it is not defined anywhere really
- given that the minimum ODFM band for EPoC is 192 MHz, what is the point of defining OFDM power levels for 6, 24, 96 MHz ????
- "signal-to-noise ratio" entry has then "Signal to Composite Noise Ratio" used - which is it then?? Again, not clear why SCN is defined for 6, 24, 96 MHz when minimum ODFM band for EPoC is 192 MHz
- CTB / CSO interference is NOT defined, yet used as a normative parameter
- many other terms that are not defined anywhere: Narrowband Interference (Other), Wideband Interference, Impulse (white) Noise, Amplitude Slope,Amplitude Variation, etc. - these are all new terms in 802.3 in the context of CCDN and need references for definition or a local definition, whichever is appropriate.
- many of the NOTEs to parameters in table are meaningless, e.g.: "Measured @700 to 800 MHz, representative of 99% of modems" - what are "modems"? "SCTE Definition, Echo not included" - where is the reference to said SCTE definition? "Small drop slope effect on calculation" - what does it even mean???? "Worst spectrum regions for CTB and CSO are not the same" - why does it matter, given that CTB / CSO spectrum is not demonstrated at all

<table>
<thead>
<tr>
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<tbody>
<tr>
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Suggested Remedy:
Per comment for Table 100A-1 and Table 100A-2

The only thing we should be specifying in EPoC is: PMD operation (transmit and receive requirements, immunity to noise, impairments, etc.) and type of cable plant on which EPoC is guaranteed to operate. Content of Table 100A-1 and Table 100A-2 is unclear and seems to cover more of conditions for coexisting services on the same CCDN rather than EPoC plant definition.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
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<td>A</td>
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</tr>
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</table>

Suggested Remedy:
- Add missing ".

Response

ACCEPT IN PRINCIPLE.

Appendix 100A specifies the normative channel model that was adopted in order to support the error performance studies, etc. and to establish operation under our baseline channel conditions operating on a CCDN with other cable operator services for support of "PMD operation (transmit and receive requirements, immunity to noise, impairments, etc.) and type of cable plant on which EPoC is guaranteed to operate". This includes the ingress and egress noise products and impairments from coexisting services and other sources. In terms of satisfying objectives, this model is required for "Define required plant configurations and conditions within an overall coaxial network operating model", "PHY to operate in the cable spectrum assigned for its operation without causing harmful interference to any signals or services carried in the remainder of the cable spectrum." as well as some other performance related objectives.

See laubach_3bn_13_0915.pdf with changes illustrated in laubach_3bn_13_0915CMP.pdf

Summary of changes:
Page 352,
Line 23: "OFDM bandwidth" change to "OFDM modulated spectrum" and change 192 to 190
Line 27: expand "BW" to "bandwidth". This includes Table 100A-2.
Line 29/37: remove rows for 96 MHz

Page 354,
Line 14: Expand on definition of "small drop slope effect" to "The tilt due to the drop cable has a small effect on calculation"
Line 28: Strike NOTE 14 and renumber remaining notes

Page 355,
Line 8: "OFDM bandwidth" change to "OFDM modulated spectrum" and change 192 to 190
Line 42-44: remove rows for 96 MHz

Entire table 100A-1 and 100A-2, capitalize only the first word in Parameter column. Remove Item/Area col. from both tables.

<table>
<thead>
<tr>
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<tr>
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</table>

Suggested Remedy:
- many of the NOTEs to parameters in table are meaningless, e.g.: "Measured @700 to 800 MHz, representative of 99% of modems" - what are "modems"? "SCTE Definition, Echo not included" - where is the reference to said SCTE definition? "Small drop slope effect on calculation" - what does it even mean???? "Worst spectrum regions for CTB and CSO are not the same" - why does it matter, given that CTB / CSO spectrum is not demonstrated at all

Response

ACCEPT.

The only thing we should be specifying in EPoC is: PMD operation (transmit and receive requirements, immunity to noise, impairments, etc.) and type of cable plant on which EPoC is guaranteed to operate. Content of Table 100A-1 and Table 100A-2 is unclear and seems to cover more of conditions for coexisting services on the same CCDN rather than EPoC plant definition.

<table>
<thead>
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Suggested Remedy:
- many of the NOTEs to parameters in table are meaningless, e.g.: "Measured @700 to 800 MHz, representative of 99% of modems" - what are "modems"? "SCTE Definition, Echo not included" - where is the reference to said SCTE definition? "Small drop slope effect on calculation" - what does it even mean???? "Worst spectrum regions for CTB and CSO are not the same" - why does it matter, given that CTB / CSO spectrum is not demonstrated at all

Response

ACCEPT.

The only thing we should be specifying in EPoC is: PMD operation (transmit and receive requirements, immunity to noise, impairments, etc.) and type of cable plant on which EPoC is guaranteed to operate. Content of Table 100A-1 and Table 100A-2 is unclear and seems to cover more of conditions for coexisting services on the same CCDN rather than EPoC plant definition.

<table>
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<tbody>
<tr>
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</table>
There are two instances in Figure 101-7 of "65 bit block" which should be "65-bit block" - "65 bit" is an adjective in here.

Response
Per comment
ACCEPT.

"associate US Filling Threshold FT" - "associate" or "associated" ???

Response
I think adjective here ("associated") is correct. "Associate" (noun / verb) is not.

ACCEPT IN PRINCIPLE.
See Cmt# 3811

Inconsistent state naming policy. I believe most states use all caps with ",, between individual compound words.

Response
ACCEPT.

Change "WAIT FOR CALL" to "WAIT_FOR_CALL". Make sure all states in all state diagrams in this draft follow the same naming logic.

ACCEPT.

The first reference to Figure 101-1 is on page 133, line 12, yet figure is on page 132.

Move figure 101-1 to a location after 101.2.1, where it is first called out.

ACCEPT.

Variable formatting (for umth time): "left-most bit is tx_coded_out<0> and the right-most bit is tx_coded_out<FC-1>.

Be consistent with the way variable names are italicized!

ACCEPT IN PRINCIPLE.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Comment ID: 3788

<table>
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</table>

Hajduczenia, Marek
Bright House Networks

Comment Type: E
Comment Status: A

Inconsistent formatting for hex number: 0x D8 58 E4 AB

Suggested Remedy:
change "0x D8 58 E4 AB" to "0xD858E4AB" if you want to separate out individual 8 bit values.

Response: ACCEPT IN PRINCIPLE.
"0xD858E4AB"

Comment ID: 3789

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</table>

Hajduczenia, Marek
Bright House Networks

Comment Type: E
Comment Status: A

Dead references: "Figure 100-3 and 100.2.9.7"

Suggested Remedy:
Per comment

Response: ACCEPT.

Comment ID: 3790

<table>
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</table>

Hajduczenia, Marek
Bright House Networks

Comment Type: E
Comment Status: A

Arrow entering RESET state from the right does not reach the state. Also, the same transition line seems to have an extra dash under CALCULATE_CRC40_AND_PARITY state, on the right to "CLK" condition

Suggested Remedy:
Fix both issues

Response: ACCEPT IN PRINCIPLE.
And convert to native FrameMaker format.
See remein_22 Mark&Duane Fig 101-9

Comment ID: 3792

<table>
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<tr>
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Hajduczenia, Marek
Bright House Networks

Comment Type: ER
Comment Status: A

"LDPC (16200, 14400)" gets broken across lines of text.

Suggested Remedy:
Either a) manually fix each reference to LDPC in text and make sure it does not get broken across lines of text, or b) use "LDPC(16200,14400)" (note no spaces) which will be treated as a single word and not broken across line. Approach b) is recommended.

Response: ACCEPT IN PRINCIPLE.
Find all instances and set to none breaking space (<Ctrl> space)

Comment ID: 3793

<table>
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</table>

Hajduczenia, Marek
Bright House Networks

Comment Type: ER
Comment Status: A

In many locations in Clause 100, 103, and 102, variables are italicized for better readability. Clause 101 is kind of in between, with some variables italicized and some not.

Suggested Remedy:
Consider italicizing variable names for better readability - applicable to the whole draft!!

Response: ACCEPT IN PRINCIPLE.
Italicized and variable names not noticed as such.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Comment Type ER Comment Status R**

"IdleBlockCount" does not seem to follow prevailing variable naming scheme

**SuggestedRemedy**

Renew to "idleBlockCount"

it would be also valuable to organize locally defined (specific to EPoC) variable names across the whole draft so they use the same capitalization (naming) scheme. It seems that wordWordWordWord scheme is prevailing right now.

Examples of variable name changes in 101.3.2.5.6 include:

- Short2Payload => short2Payload
- Short2blockCount => short2BlockCount
- IdleBlockCount => idleBlockCount
- tx_coded => txCoded
- tx_coded_out => txCodedOut
- US_DataRate => usDataRate
- BurstTimeHeader => burstTimeHeader
- Calculate_CRC40_and_3Parity => calcCrc40 (does not seem that the function name needs to be longer than that)

I do realize it will take some work, but it simplifies reading variable names, and distinguishing them from surrounding text. Note that single word variables like "loc", "transmitting" should be avoided:

- transmitting => txinProgress
- loc => locInArray

are more descriptive and easy to distinguish from surrounding text

**Response Response Status W**

REJECT.

This proposal to somehow normalize the variable naming across the draft was considered and rejected already by the TF.

**Comment Type ER Comment Status A**

last column, line 22 contains statement "as above" - does it mean that this cell should contain value of 3:0? If so, why not just copy it in?????

**SuggestedRemedy**

Per comment - it is not clear what value is intended to be here. 3:0 seems like a likely suspect

There are also other instances of "as above" in the table without any need. Please use explicit values - such redrections are not needed

This becomes more complex to read, especially when "as above" points to previous page (see top of page 131 for example)

**Response Response Status W**

ACCEPT IN PRINCIPLE.

Added pg 130 line 22

Replace "as above" at Pg/Ln with entry for index listed:

- Pg/Ln Index
  - 84/39 1001
  - 85/7 1024
  - 85/36 11241
  - 130/22 1001
  - 131/7 1024
  - 245/46 1001

**Comment Type ER Comment Status A**

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 W**

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

**Comment ID 3797 Page 42 of 123**

**TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general**

**COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn**

**SORT ORDER: Comment ID**
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Comment ID 3798

Comment Type T  
Comment Status A

Comment

Equations 101-1 is not referenced in text

Suggested Remedy

Add the following statement at the end of PCS_Rate definition: ", as defined in Equation (101-1)." Make link live.

Response

ACCEPT.

This change is included in remein_3bn_22_0915

Response ID 3799

Comment Type T  
Comment Status A

Comment

Position references are bad, especially if text is reflowed by staff editors when amendment is prepared for integration.

Suggested Remedy

Change "PHY_OSize is determined by" to "The value of PHY_OSize is calculated based on Equation (101-2)." - make sure the link is live.

Similar change needed in PHY_OSizeFrac variable (page 136, line 38/39, to tie it to what should be equation 101-3 (lines 41-44, page 136).

Response

ACCEPT IN PRINCIPLE.

Change "PHY_OSize is determined by" to "PHY_OSize is defined in Equation (101-2)."

Change

"The PHY_OSizeFrac is given by" to "PHY_OSizeFrac is defined in Equation (101-3)"

Add Eq number to PHY_OSizeFrac equation In 42

Response ID 3800

Comment Type T  
Comment Status R

Comment

accResidue variable is a floating / real variable and should be loaded with 0.0 instead of 0 to emphasize this point

Suggested Remedy

Change "accResidue <= 0" to "accResidue <= 0.0"

Response

REJECT.
Zero is always zero no matter how many decimal places you use.

Response ID 3801

Comment Type T  
Comment Status A

Comment

The variable PHY_RSize is really not needed in the state diagram

Suggested Remedy

Merge UPDATE_RESIDUE and UPDATE_COUNTERS states into a single state called UPDATE_COUNTERS with the following content

accResidue += PHY_OSizeFrac
countDelete += (PHY_OSize + floor(accResidue))
accResidue -= floor(accResidue)
countVectorT <= 0

Response

ACCEPT IN PRINCIPLE.

As per comment and
Pg 135 line 50 adjust definition of accResidue to remove PHY_Rsize also
Pg 136 remove def. of PHY_Rsize

Comment ID 3801

Page 43 of 123

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected  RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID
Comment Type | T | Comment Status | A
---|---|---|---
Comment | "initialized to the value 0x00" - given that the register is 40 bits long, 0x00 covers only 8 bits of 40 bits in this register. What happens with the remaining 32 bits?
SuggestedRemedy | Change "initialized to the value 0x00" to "initialized to the value 0x00000000", which represents a 40-bit all 0s value in hex
Response | ACCEPT IN PRINCIPLE. Change to "value zero", which is the same regardless of the number base

Comment Type | T | Comment Status | A
---|---|---|---
Comment | "The length of the FIFO_FEC_TX buffer is selected in such a way that it is large enough to compensate for the insertion of the FEC parity data and CRC40, as defined in 101.3.2.5.2".
Two issues here:
- 101.3.2.5.2 does not define anything related with CRC40
- statements in 101.3.2.1 speak about FEC overhead compensation sub-process and data rate adaptation sub-process, implying that there is FEC overhead and PHY overhead - the same language should be used in here as well
SuggestedRemedy | Change to read "The length of the FIFO_FEC_TX buffer is selected in such a way that it is large enough to compensate for the FEC overhead and PHY overhead, as discussed in 101.3.2.1." - make link live
Response | ACCEPT IN PRINCIPLE. As suggested but use xRef of 101.3.2.5.2

Comment Type | T | Comment Status | A
---|---|---|---
Comment | The statement in lines 1-7, including the formula, should be included in the definition of the FIFO_FEC_TX size, and not just in text.
SuggestedRemedy | Remove the indicated lines on page 145.
Update the definition of FIFO_FEC_TX in 101.3.2.5.6 by adding the following statement to the end of definition: "The size of FIFO_FEC_TX buffer in the 10GPASS-XR CLT PCS is set to 29 = ceil "{(1800+40)/65}"."
If the statement on CLT buffer size is added, the CNU buffer size should also be calculated, as the worst case scenario (minimum packet sizes, shortest code word + CRC40)
Response | ACCEPT IN PRINCIPLE.
"The size of FIFO_FEC_TX buffer in the 10GPASS-XR PCS is set to 29 = ceil (1800+40)/65)."

Comment Type | T | Comment Status | A
---|---|---|---
Comment | Is there any reason for the use of a hyphen in "LDPC-encoder"? We have "FEC Encoder", "64B/66B Encoder", but "LDPC-encoder" ???
SuggestedRemedy | Change all instances of "LDPC-encoder" to "LDPC Encoder", including figures
Response | ACCEPT IN PRINCIPLE. Replace the 2 instances found on pg 145 in 30 and 31.

Comment Type | T | Comment Status | A
---|---|---|---
Comment | The values "(14400 - 60 = 14340 bits)" are just examples for one specific LDPC codeword size, and not universally applicable.
SuggestedRemedy | Change "(14400 - 60 = 14340 bits)" to "(e.g., 14400 - 60 = 14340 bits)". The same change on page 145, line 33 where another specific numeric example is given.
Response | ACCEPT IN PRINCIPLE. Per comment, note that on line these is an "i.e.," that should be removed.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Final Response

Comment ID: 3808

Cl 101 SC 101.3.2.5.2 P 147 L 33
Hajduczenia, Marek
Bright House Networks

Comment Type: T
Comment Status: A

Burst Structure

Figure 101-7 has a block indicating "First codeword starts with two 65 bit blocks containing Idle" but pointing to before the first FEC codeword.

Suggested Remedy
First, change "First codeword" to "First FEC codeword" if that is what is intended.
Second, move the arrow for this block from where it is right now, to the first rectangle within the first FEC codeword - right now it is pointing to something outside of the FEC codeword and does not match the text.

Response
ACCEPT IN PRINCIPLE.
Extend arrow so it points to the 1st two idles similar to Fig 76-14

Comment ID: 3809

Cl 101 SC 101.3.2.5.2 P 147 L 38
Hajduczenia, Marek
Bright House Networks

Comment Type: T
Comment Status: R

Suggested Remedy
I believe "data" is used more predominantly. Change "MAC Data" to "data"

Response
REJECT.
This also is consistent with Fig 76-14.

Comment ID: 3810

Cl 101 SC 101.3.2.5.2 P 146 L 47
Hajduczenia, Marek
Bright House Networks

Comment Type: T
Comment Status: A

Suggested Remedy
"each FEC codeword (FEC CW)" - this is an odd place to add an acronym, which is used only within Figure 101-7.

Response
ACCEPT.

Comment ID: 3811

Cl 101 SC 101.3.2.5.4 P 148 L 10
Hajduczenia, Marek
Bright House Networks

Comment Type: T
Comment Status: A

Suggested Remedy
What does it mean: "Each codeword size has an associate US Filling Threshold FT with a specific threshold for each codeword size." - it seems like a circular definition at this time.

Response
REJECT.
This also is consistent with Fig 76-14.

Suggested Remedy
Seems that "Each codeword size has a specific, associated US Filling Threshold FT." would be sufficient

Response
ACCEPT.
The description in lines 12-26 is a tad chaotic - it uses B to designate burst size but also number of 65-bit blocks available for transmission.

**SuggestedRemedy**
The upstream burst filling process is described as follows:

**START:** Add burst start marker. Move to STEP 1.

**STEP 1:** If the number of available 65-bit blocks (Bin) is sufficient to fill a long FEC codeword (BQ >= 220), create a long FEC codeword. Repeat STEP 1 as long as Bin >= 220; otherwise move to STEP 2.

**STEP 2:** If 220 > Bin >= 101, create a shortened long FEC codeword and move to END; otherwise move to STEP 3.

**STEP 3:** If 101 > Bin >= 76, create a medium FEC codeword. Move to STEP 4.

**STEP 4:** If 76 > Bin >= 25, create a shortened medium FEC codeword and move to END; otherwise move to STEP 5.

**STEP 5:** If 25 > Bin >= 12, create a short FEC codeword. Move to STEP 6.

**STEP 6:** If 12 > Bin >= 1, create a shortened short FEC codeword and move to END.

**END:** Add burst end marker.

*use appropriate formatting, as needed*

**Response**

**Response Status:** C

**Change to:**

1) If there are enough 65-bit blocks B to create and encode a full long codeword (BQ = 220 for long) **create and encode a full long codeword.** Repeat **the** create and encode using long codewords if B 220 blocks are available.

2) If remaining B blocks in burst BQ = 220 blocks and B 101 blocks, **create and encode** a long codeword **and** shorten to remaining blocks and end the burst with this encoded codeword.

3) **A FIFO array used to store 65-bit blocks, inserted by the input process and retrieved by the output process in the FEC Encoder**

**Response**

**Response Status:** C

**ACCEPT IN PRINCIPLE.**

Add ref to Figure 101-8, Figure 101-9 and Figure 101-10

**SuggestedRemedy**

Remove lines 28-37

**Response**

**Response Status:** C

**ACCEPT.**

**SuggestedRemedy**

Overqualification: The fixed size in bits of the downstream FEC LDPC output codeword.

**SuggestedRemedy**

Change to "The size (expressed in bits) of the downstream FEC codeword." - once FEC is defined as LDPC, no need to repeat that over and over again :)
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Final Response

Ci 101 SC 101.3.2.5.6 P 150 L 8 # 3817
Hajduczenia, Marek
Bright House Networks

Comment Type T Comment Status R
“firstcodeword” and “lastcodeword” do not follow naming conventions consistent for other variables.

Suggested Remedy
Rename to “firstCodeWord” and “lastCodeWord”
Also, the definition of a “flag” is not existent. Replace “flag” with “variable” in definitions of both variables.

Response
Response Status C
REJECT.
There are no naming conventions defined or enforced for 802.3 projects that the editor is aware of.
The term “flag” appears 165 times in Section 5 of 802.3bx Draft 3.2 so apparently it is well known.

Ci 101 SC 101.3.2.5.8 P 155 L 31 # 3818
Hajduczenia, Marek
Bright House Networks

Comment Type T Comment Status A
Unknown variables “FC”, “FR” - are these intended to be “F>>C<<” and “F>>R<<”, where >>><<< designated subscript?

Suggested Remedy
Per comment

Response
Response Status C
ACCEPT.

Ci 101 SC 101.3.2.5.6 P 149 L 14 # 3819
Hajduczenia, Marek
Bright House Networks

Comment Type TR Comment Status R
The value of Bp and Bq are selected based on Table 101-2, but it is not clear how the selection is done

Suggested Remedy
Clarify how proper values (long / medium / short) are selected for Bp and Bq, if they are at all needed. Fi cannot find Bp and Bq used in state diagrams at all - why are they defined then?
Remove them :)

Response
Response Status W
REJECT.
Both BP (appears 19x) and BQ (appears 54x) are used extensively in the draft and cannot be removed. The DS is only one size and selection in the US is clearly described in 101.3.2.5.4 (see pg 148 line 34).

Comment ID 3820

Page 47 of 123
9/18/2015 2:08:46 PM

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID
Draft 2.0

IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Final Response

Page 48 of 123

9/18/2015 2:08:46 PM

Comment ID 3822

Hajduczenia, Marek
Bright House Networks

Comment Type TR Comment Status A

Variable burstSize is defined in 101.3.2.5.6, and used as parameter in transferToPMA function call, but the way it is used in Figure 101–11, it is never set to any specific value, but then used in comparing conditions for exit from PMA_CLIENT state.

SuggestedRemedy

Update Figure 101–11 to set burstSize to some value and update it as the burst size increments. Otherwise, the operation is broken since burst size is never calculated! It seems that definition of burstSize could be changed to "This variable represents the size of ARRAY_IN array," or alternatively, remove it altogether and use sizeof(ARRAY_IN) instead to figure out how many bits are located in ARRAY_IN.

Response Response Status W

ACCEPT IN PRINCIPLE.

In Fig 101-9 in CALCULATE_CRC40_AND_PARITY before transferToPMA(tx_coded_out, (blockCount*65) + 40 + FC, TRUE)
Add line "xfrSize = (blockCount*65) + 40 + FC"

Pg 149 line 28
Change "burstSize" to "xfrSize"

Pg 151 lin 49/50 change
"loc += parityLength;
transferToPMA(tx_coded_out, loc, lastcodeword);" to
"xfrSize += parityLength;
transferToPMA(tx_coded_out, xfrSize, lastcodeword);"

(Also see laubach_3bn_11a_0915.pdf & cmt 3831)

Comment ID 3823

Hajduczenia, Marek
Bright House Networks

Comment Type TR Comment Status A

CLT output process seems to disable the transmitter at the end of each FEC codeword, by setting the last parameter to TRUE:

transferToPMA(tx_coded_out, (blockCount*65) + 40 + FC, TRUE)

but there is no location where transmitter is enabled explicitly, and definition of transferToPMA does not clarify when Tx is enabled for CLT.

SuggestedRemedy

Either add explicit Tx enable in one of states, OR extend the definition of transferToPMA function to enable explicit Tx enable on the first transferred bit, OR do not disable Tx in CLT at all (not really needed, is it?)

Response Response Status W

ACCEPT IN PRINCIPLE.

Add note following pseudo code
Note: in the CLT the lastcodeword argument to this function is always TRUE (see Figure 101-9)."

In Fig 101-10 add
"PMA_SIGNAL.request( ON )" to START_BURST
"PMA_SIGNAL.request( OFF )" to END_BURST

Comment ID 3824

Hajduczenia, Marek
Bright House Networks

Comment Type TR Comment Status A

Transition between START_BURST and AGGREGATE_BQ_BLOCK is never taken. Note that in state NO_BURST_IN_PROGRESS, firstcodeword is set to TRUE, and then not modified in START_BURST, so it is always TRUE the moment state START_BURST is left.

SuggestedRemedy

Either a) remove transition on "firstcodeword = FALSE" between START_BURST and AGGREGATE_BQ_BLOCK, or b) fix the state diagram so that this transition can be taken (not clear under what conditions it would need to be taken, really).

Response Response Status W

ACCEPT IN PRINCIPLE.
Add statement in AGGREGATE_BURST_TIME_HEADER
"firstcodeword <= FALSE"

Editors and authors to review SD and associated text for consistency and will make comments as necessary during the next recirc.
Assignment operator madness ... in state "AGGREGATE_BURST_TIME_HEADER"; all standalone "=" should be interpreted as "equal to" logical operand and not assignment operator.

SuggestedRemedy
Change

dataPayload<loc+64:0> = Burst_Time_Header()
\[tx\textunderscore\text{coded\_out}<64:0> = \text{dataPayload}<64:0>\]

to

dataPayload<loc+64:0> <= Burst_Time_Header()
\[tx\textunderscore\text{coded\_out}<64:0> <= \text{dataPayload}<64:0>\]

ACCEPT IN PRINCIPLE.
Per comment and convert to FramMaker native format.

Editors and authors to review SD and associated text for consistency and will make comments as necessary during the next recirc.

The operation of AGGREGATE_BQ_BLOCK state is not correct. Right now, the state machine will loop in AGGREGATE_BQ_BLOCK state until DelayBound is reached, but that does not guarantee aggregation of BQ blocks of data.

SuggestedRemedy
The ONU state diagram is broken from AGGREGATE_BQ_BLOCK state onwards.

Probably the name of AGGREGATE_BQ_BLOCK state is confusing, in that it does not really aggregate any blocks. Note that in each clock, we get one more 65-bit block, execute Check_dataPayload function which calculates CRC40 for selected codeword, and then go back for next 65-bit block.

The operation in here should be different, i.e., we aggregate data blocks until either of the conditions becomes true: we observe end of burst in data detector OR we aggregate enough data for logn codeword. In that case, CRC40, parity needs to be calculated and we go back to aggregation process (if data detector does not signal end of burst) or move to end of burst (when data detector signals end of burst).

note that burst end marker should be transmitter in END_BURST state and not in aggregation state - this would be a cleaner solution to what is currently done.

ACCEPT IN PRINCIPLE.
Change name for state to:
"AGGREGATE_BLOCKS"

Note that Check_dataPayload accounts for other functionalities mentioned in Suggested Remedy.
Comment Type: TR

**Comment:**

"The EPoC PCS is specified to support the operation of up to 10 Gb/s in the downstream direction and up to 10 Gb/s in the upstream direction, where the upstream and downstream data rates are configured independently" - this statement does not correspond to max upstream data rate of 1.6 Gb/s listed in changes to Clause 56 and 67, part of this amendment.

**Suggested Remedy:**

- Change "up to 10 Gb/s in the upstream direction" to "up to 1.6 Gb/s in the upstream direction"

Similar change needed on page 134, line 46, where upstream data rate is again listed as "up to 10 Gb/s"

Response: ACCEPT.

---

Comment Type: TR

**Comment:**

Description of Calculate_CRC40_and_3Parity(paritySize) using pseudocode contains a few issues, as listed below:

- additional description in lines 28 and 29 is a repetition of text in lines 23-25 and it is not needed (remove)
- definition of global variables is unnecessary (lines 33-34) - these have meaning in Matlab and but not within this draft - remove
- given that it is pseudocode, ";" at the end of each line is not needed (that is Java / Matlab / C / C++ specific)
- "==" is used as assignment operator AND as comparison operator (equals to)
- "return()" statement is meaningless - all operations are done on variables and other functions are called - there is nothing to "return"
- "block_count" is not used in the function in any way - it should be reset to 0 explicitly in state diagram
- keyword "function" is not needed - this is not Matlab script

**Suggested Remedy:**

Use the following definition of this function:

```
calculate_CRC40_and_3Parity( paritySize )
{
    if (paritySize == LONG) parityLength = 1800
    else if (paritySize == MEDIUM) parityLength = 900
    else parityLength = 280
    dataPayload<loc+39:loc> = calculateCrc(dataPayload<loc-1:0>)
    tx_coded_out<loc+39:loc> = dataPayload<loc+39:loc>
    loc += 40
    dataParity<parityLength-1:0> = calculateParity(dataPayload<loc-1:0>, loc, paritySize)
    tx_coded_out<loc+parityLength-1:loc> = dataParity<parityLength-1:0>
    loc += parityLength
    transferToPMA(tx_coded_out, loc, lastcodeword)
    firstcodeword = FALSE
    loc = 0
    resetArray(dataPayload)
    resetArray(dataParity)
}
```

Response: ACCEPT IN PRINCIPLE.
- remove additional description in lines 28 and 29
- remove return statement
- remove block_count

Given that it is pseudocode and to minimize changes the following are rejected:
- remove definition of global variables - yes they are unnecessary but they do no harm either.
- remove ";" - it is pseudocode and any convenient line terminator is OK
- no change to "=" it is pseudocode and in some languages this is acceptable
- remove keyword "function" it is pseudocode

### Comment Type: TR, Comment Status: A

**Description of Check_dataPayload using pseudocode contains a few issues, as listed below:**
- additional description in lines 24 is a repetition of text in lines 23-25 and it is not needed (remove)
- definition of global variables is unnecessary (lines 27-28) - these have meaning in Matlab and but not within this draft - remove
- given that it is pseudocode, ";" at the end of each line is not needed (that is Java / Matlab / C / C++ specific)
- "=" is used as assignment operator AND as comparison operator (equals to)
- "return()" statement is meaningless - all operations are done on variables and other functions are called - there is nothing to "return"
- "block_count" is not used in the function in any way - it should be reset to 0 explicitly in state diagram
- keyword "function" is not needed - this is not Matlab script

**Suggested Remedy:**
Use the function description per 802.3bn_0915_hajduczenia_1.pdf

**Response:**

**Response Status:** W

ACCEPT IN PRINCIPLE.

Remove "// Check_dataPayload() implements the Upstream FEC encoding
Function Check_dataPayload( firstcodeword, lastcodeword )"
See Cmt# 3829 for itemized rejection list.

### Comment Type: TR, Comment Status: A

**Wrong value assigned to IdleBlockCount variable. It is defined as 32 bit unsigned int and it is assigned the value of -1 (effectively, 0xFFFFFFFF)**

**Suggested Remedy:**
Either change the definition to signed integer (seems to hurt nothing, since the number is never expected to reach very high values anyway) or the state diagram will need to be redesigned to avoid the use of "=1" assign - otherwise, we rely on rollover behavior which is implementation specific.

**Response:**

**Response Status:** W

Redefine (pg 50 In 20) as signed integer

The commenter is encouraged to enter a maintance request to fix the same issue seen in Section 5 of P802.3bx Drafte 3.2 SCI 76.3.2.5.6 pg 624 line 37 (and many other variable definitions in the clause).

### Comment Type: TR, Comment Status: A

**What is "BIT_CTRL" and "BIT" DATA" ???**

Transition conditions in Figure 76–16 are "SUDR * tx_coded<1:0> = SH_CTRL" and "SUDR * tx_coded<1:0> = SH_DATA" which is what should be used in here as well.

**Suggested Remedy:**
Copy transition conditions from Figure 76–16 + any associated variables needed.

**Response:**

**Response Status:** W

ACCEPT IN PRINCIPLE.

SUDR alias for SCRAMBLER_UNITDATA.request(tx_coded<65:0>)  and has no analog in EPoC

SH_CTRL & SH_DATA are defined by ref pg 147 In 3.

tx_coded is defined pg 151 In 53

Change in Fig 101-8

BIT_CTRL to SH_CTRL
BIT_DATA to SH_DATA
Comment Type TR  Comment Status A
Definition of sizeFifo does not match the use in Figure 101-8 - it is used as size of FIFO_FEC_TX

Suggested Remedy
Change definition of sizeFifo to read: "This variable represents the number of 65-bit blocks stored in the FIFO_FEC_TX."
Note that breaks also removeFifoHead definition, which is really tied to FIFO_FEC_TX array only and not some generic ARRAY_IN
To make removeFifoHead more generic, it should be redefined as removeFifoHead( ARRAY_IN, sizeFifo )
and any calls done like this: removeFifoHead( Array, sizeof(Array) )

Response  Response Status W
ACCEPT IN PRINCIPLE.
In Figure 101-14 change "sizeFifo" to "sizeFifoRX" (3x)
Pg 154 in 22 Figure 101–8 remove "FIFO_FEC_TX" from "RemoveFifoHead(FIFO_FEC_TX)" in RECEIVE_FIFO_HEAD as in Cl 76 Figure 76-16. Also change [“” to [”] at line 26
Pg 162 change definition to "sizeFifoRX" to "sizeFifoRX"
TYPE: 16-bit unsigned integer
This variable represents the number of 65-bit blocks stored in the FIFO."

Comment Type E  Comment Status A
"The Idle control character insertion and deletion mechanism accommodates" - these are independent mechanisms>>s<<

Suggested Remedy
Change to "The idle control character insertion and deletion mechanisms accommodate"

Response  Response Status C
ACCEPT.

Comment Type E  Comment Status A
"This does not read right: "Figure 100–4 and Figure 100–5 illustrate the functional block diagram of the receive path in the CLT and CNU, respectively in the EPoC PCS"."

Suggested Remedy
Change to "Figure 100–4 and Figure 100–5 illustrate the functional block diagram of the receive path in the CLT PCS and CNU PCS, respectively".

Response  Response Status C
ACCEPT.

Comment Type E  Comment Status A
Inconsistent text format in equation: "PHY_DSize" is partially italicized - should be italicized as a whole

Suggested Remedy
Same issue in Equation 101-2 and Equation 101-1 for PCS_Rate

Response  Response Status C
ACCEPT.

This change is included in remain_3bn_22_0915

Comment Type E  Comment Status A
Please align symbols that are used across SDs: note the "-" sign format in Figure 101–2 in DELETE_IDLES state and "+" symbols in SEND_VECTOR state versus Figure 101–3, DELETE_IDLES state and SEND_IDLE state - they are visually different

Suggested Remedy
This applies to all SDs in this draft that use "-" and "+" symbols

Response  Response Status C
ACCEPT IN PRINCIPLE.
Changed to Cl 00 as this applies to more than Cl 101
Replace all "- -" (dash space dash <OR> minus minus) with "- -" (minus space minus) in all state diagrams (using minus minus with no space results in a single wide line)
Replace all "+ +" with "+ +" in all state diagrams
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Comment 3839

Comment Type: E
Comment Status: R

**Comment:**
"ELSE" or "Else" or "else" - three forms are used in this draft - pick one and use consistently ...

**SuggestedRemedy:**
Per comment

**Response:**
REJECT.
The standard uses all forms (See Figure 77-29 & 77-30 for a few examples of inconsistency)

Response 3840

Comment Type: E
Comment Status: A

**Comment:**
Line break control for "64B/66B Encoder"

**SuggestedRemedy:**
Please make sure that Frame does not break across "/" character

**Response:**
ACCEPT IN PRINCIPLE.

Response 3841

Comment Type: T
Comment Status: A

**Comment:**
It is not clear what the purpose of assigning Burst_Time_Header() to dataPayload<loc+64:0> and then assigning dataPayload<loc+64:0> to tx_coded_out<64:0> is. I suggest assigning Burst_Time_Header() to bx_coded_out<64:0> directly and saving one operation, which is meaningless anyway :)

**SuggestedRemedy:**
Change

dataPayload<loc+64:0> = Burst_Time_Header()

**Response:**
ACCEPT IN PRINCIPLE.

Response 3842

Comment Type: T
Comment Status: A

**Comment:**
"with exceptions noted herein" - i.e., where?

**SuggestedRemedy:**
change to "with exceptions noted in XXX" and add reference where said exceptions are listed (likely candidate: 101.2.3)

**Response:**
ACCEPT IN PRINCIPLE.

Editors and authors to review SD and associated text for consistency and will make comments as necessary during the next recirc.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

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**CI 101 SC 101.3.1 P 134 L 26 # 3843**  
Hajduczenia, Marek | Bright House Networks

**Comment Type T** Comment Status A

"point-to-multipoint coaxial medium architecture" - I believe this is the definition of CCDN???

**Suggested Remedy**

- replace "over the point-to-multipoint coaxial medium architecture" with "over CCDN"

**Response** Response Status C

ACCEPT IN PRINCIPLE.

CCDN (coax cable distribution network) is not defined to be necessarily P2MP.

Change

"coaxial medium architecture"

to

"coax cable distribution network"

---

**CI 101 SC 101.3.2.5.7 P 151 L 19 # 3844**  
Hajduczenia, Marek | Bright House Networks

**Comment Type T** Comment Status A

Unclear description of the value that BurstTimeHeader function returns: "binary 1 followed by the 32-bit PHY Link timestamp value at the time of the call to this function followed by 0x D8 58 E4 AB." -

**Suggested Remedy**

Given the odd format, it might be simpler to represent it graphically, showing burst bit field with the value of "1", followed by 4 octets (PHY Link timestamp), followed by 4 octets with the value of 0x D8 58 E4 AB. Alternatively, the following text description could be used:

"The BurstTimeHeader() function returns a 65-bit vector, with the following values:

bit <0> = binary 1

bits <1:32> = the current PHY Link timestamp

bits <33:64> = a fixed value of 0xD858E4AB.

This 65-bit vector is transmitted as the first 65-bit block of the upstream burst."

**Response** Response Status C

ACCEPT IN PRINCIPLE.

Per alt suggestion.

---

**CI 101 SC 101.3.2.5.8 P 154 L 27 # 3847**  
Hajduczenia, Marek | Bright House Networks

**Comment Type T** Comment Status A

Incorrect opening bracket: FIFO_FEC_TX{sizeFifo]

**Suggested Remedy**

Change to FIFO_FEC_TX[sizeFifo]

**Response** Response Status C

ACCEPT.
Comment Type: T  Comment Status: A  EZ

Seemingly incorrect state name: RECEIVE_FIFO_HEAD

SuggestedRemedy:
Change to REMOVE_FIFO_HEAD - that is what is happening here, we're dropping FIFO head elements until the size reaches the value of 2.

Response: ACCEPT.

Comment Type: TR  Comment Status: A  Homework Duane, remein_22

State diagrams shown in Figure 101-3 and Figure 101-4 operate in parallel, which means that each passing \(I+E\) character is counted by both state diagrams. Since both state diagrams do not synchronize variables in any way, this is what happens (just numeric example):
- after observing some non-\(I+E\) characters, both SDs update their counters, waiting for \(I+E\) characters to be deleted
- if in both state diagrams, UPDATE_COUNTERS states are reached simultaneously, on next \(I+E\) character, both SDs will identify it for deletion and enter DELETE_IDLES state, decrementing countDeleteF/countDeleteP variable
- however, only one \(I+E\) character will be effectively deleted, compensating for either FEC_OSize or PHY_OSize, but not for both

SuggestedRemedy:
Update CNU state diagram, by collapsing Figure 101–3 and Figure 101–4 together into a single state diagram, including residual value calculation, following CLT mechanism. The current mechanism does not operate correctly.

Response: ACCEPT IN PRINCIPLE.

Changed:
- FEC_OSize -> DS_FEC_OSize
- PHY_DSize -> DS_PHY_DSize
- PHY_OSize -> DS_PHY_OSize
- countVectorT -> countVector


Moved: countDelete from 101.3.2.1.2 Variables to 101.3.2.1.3 Counters


Modified Fig 101-2 accordingly

Combined Fig 101-3 & 101-4 to operate assuming the minimum FEC size. This ensures that the US burst is less than or equal to the time set per MPCP.

Deleted Fig 101-4

This change is included in remein_3bn_22a_0915
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Type</th>
<th>Comment Status</th>
<th>Comment</th>
<th>Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>3850</td>
<td>TR</td>
<td>A</td>
<td>Burst Structure, Soc</td>
<td>in the CLT only, a 65-bit burst time header is placed (accumulated) as the first 65-bit block at the start of a burst.</td>
<td>ACCEPT IN PRINCIPLE.</td>
</tr>
<tr>
<td>3851</td>
<td>TR</td>
<td>A</td>
<td>Burst Structure, Soc</td>
<td>CLT does not send data in bursts, so the statement is not correct. It is not clear what the original intent of the text is, what the &quot;burst time header&quot; is, and where it is located. A reference to figure demonstrating said elements is needed.</td>
<td>ACCEPT IN PRINCIPLE.</td>
</tr>
<tr>
<td>3852</td>
<td>TR</td>
<td>A</td>
<td>Burst Structure, Soc</td>
<td>The burst marker is not part of the first FEC codeword. - but it is not shown in Figure 101-7 !!! Same for &quot;The ending burst marker is not part of the last FEC codeword.&quot;</td>
<td>ACCEPT IN PRINCIPLE.</td>
</tr>
<tr>
<td>3853</td>
<td>TR</td>
<td>A</td>
<td>Burst Structure, Soc</td>
<td>All codeword encoding follows the same procedures as the downstream with the following differences: - it is not clear where data burst structure is available in the downstream - there are no burst markers, no burst structure, data is encoded at a single Tx and received by multiple Rx.</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3854</td>
<td>E</td>
<td>A</td>
<td>Burst Structure, Soc</td>
<td>The word register is mis-spelled</td>
<td>Change register to register</td>
</tr>
</tbody>
</table>
Comment Type: E  Comment Status: A

Typographical error, specifies GHz, should specify MHz.

Suggested Remedy
Change 3276.75 GHz to 3276.75 MHz.

Response Status: C

ACCEPT.

Comment Type: E  Comment Status: A

Text is confusing, does not specify which part of the spectrum of the outlying carrier. Revise the text as suggested.

Suggested Remedy
The encompassed spectrum is the difference between the center frequency of the highest frequency active subcarrier of the highest frequency OFDM channel and the center frequency of the lowest frequency active subcarrier of the lowest frequency OFDM channel, plus the subcarrier spacing (all expressed in MHz). The encompassed spectrum of a single OFDM channel is the difference between the center frequency of the highest frequency active subcarrier and the center frequency of the lowest frequency active subcarrier in the OFDM channel, plus the subcarrier spacing.

Response Status: C

ACCEPT IN PRINCIPLE.

CNU Fidelity requirements are later in "100.2.9.5 OFDMA fidelity requirements". The paragraph speaks to OFDMA channel power.

Suggested Remedy: move paragraph as the first paragraph of the next subclause "100.2.9.3 Transmit power Requirements". Delete subclause heading "100.2.9.2 Fidelity requirements" as it is duplicative with 100.2.9.5.

Comment Type: E  Comment Status: A

The term 'complex scalar' is not correct. A scalar is a real number, whilst a 'complex number' is a vector. Each term in the preceding equation is in fact a single complex number for each subcarrier. The \(|e|^2\) operation converts the error vector (a complex number) to a scalar, which is then time-averaged.

Suggested Remedy
Change 'complex scalar' to 'complex number'.

Response Status: C

ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Comment ID: 3859

Cl 00 SC 0 P 5 L 24 # 3859
Anslow, Pete Ciena

Comment Type: E
Comment Status: A

IEEE uses an en-dash for a minus sign. The draft contains many instances of a hyphen being used instead.

Suggested Remedy:
Where a hyphen is used as a minus sign, replace with an en-dash.
The editor has been sent a marked up copy of the draft showing 83 instances that should be replaced.

Response: Response Status C
ACCEPT.

Comment ID: 3860

Cl 00 SC 0 P 25 L 16 # 3860
Anslow, Pete Ciena

Comment Type: E
Comment Status: A

The spelling of "Implementors" has been changed to "Implementers" in the latest IEEE style guide (and the latest 802.3 template)

Suggested Remedy:
Change the following text to cross-references:
Page 55, line 45 "102.2.6.2"
Page 59, line 14 "102.2.3"
Page 109, line 22 "100.2.9.1"
Page 122, line 1 "Clause 100"
Page 148, line 9 "Table 101–4"
Page 153, line 27 "Figure 100-3"
Page 153, line 27 "100.2.9.7"
Page 173, line 12 "Table 100-2"
Page 173, line 42 "101.4.2.5.1"
Page 180, line 36 "101.4.3.6.4"
Page 180, line 37 "101.4.3.6.x" (with correct reference)
Page 180, line 40 "101.4.2.1"
Page 186, line 24 "Figure 4" (with correct reference)
Page 196, line 46 "Table 100-1"
Page 197, line 14 "Table 100-1"
Page 206, line 15 "Figure 101.x.x.x" (with correct reference)
Page 212, line 17 "101.x.x.x" (with correct reference)
Page 212, line 18 "101.4.3.8.1"
Page 231, line 47 "Figure 101-15"
Page 243, line 6 "Clause 45" (should not be forest green)
Page 243, line 13 "CI 45" (Should be "Clause 45")
Page 284, line 49 "102.4.1.6"
Page 296, line 30 "Table 103-1"
Page 304, line 21 "Table 101-2"
Page 334, line 2 "Annex 31B"

Response: Response Status C
ACCEPT IN PRINCIPLE.
However Page 148, line 9 should be "Table 101–2"
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Comment ID 3865

Comment Type E

Comment Status A

Anslow, Pete

Ciena

"as shown in Figure 56-2, Figure 56-4, and Figure 56-4" should be "as shown in Figure 56-2, Figure 56-3, and Figure 56-4"

Suggested Remedy

Change "Figure 56-4, and" to "Figure 56-3, and"

Response

Response Status C

ACCEPT.

Comment ID 3866

Comment Type E

Comment Status A

Anslow, Pete

Ciena

In the definition for PCS_Rate, there is a space missing in "the64B/65B"

Suggested Remedy

Add the space.

Response

Response Status C

ACCEPT.

This change is included in remein_3bn_22_0915

Comment ID 3867

Comment Type E

Comment Status A

Anslow, Pete

Ciena

spurious space after "(" at the end of the line causes the ")" to be on a different line from "14400"

Suggested Remedy

Delete the space.

Response

Response Status C

ACCEPT IN PRINCIPLE.

See Cmt# 3807

Comment ID 3868

Comment Type E

Comment Status A

Anslow, Pete

Ciena

1.2.6 Accuracy and resolution of numerical quantities states:

Unless otherwise stated, numerical limits in this standard are to be taken as exact, with the number of significant digits and trailing zeros having no significance.

Consequently, the entries in Table 101–11 and 101.18 should not contain trailing zeros.

Suggested Remedy

In Table 101–11 and Table 101.18, change:

"0.0000" to "0"

"0.6250" to "0.625"

"1.2500" to "1.25"

Response

Response Status C

ACCEPT.
Comment ID: 3868

Anslow, Pete
Ciena

Cross-referenced to other sub-clauses in IEEE standards are not preceded by "Section"

SuggestedRemedy
Change "as specified in Section 101.4.3.2.2" to "as specified in 101.4.3.2.2"

Response
ACCEPT.

Comment ID: 3869

Anslow, Pete
Ciena

"RB_Type" and "RB_Frame_start" are split across two lines, which is a bad thing to do with variable names.

SuggestedRemedy
Tell FrameMaker not to hyphenate these two variable names. (Click on the variable name and type Esc n s to do this)

Response
ACCEPT.

Comment ID: 3870

Anslow, Pete
Ciena

The 802.3 web page: http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html says that 802.3 will use "peak-to-peak" (in text)

SuggestedRemedy
Change "p-p" to "peak-to-peak" 4 times in 101.4.3.9.2

Response
ACCEPT.

Comment ID: 3871

Anslow, Pete
Ciena

IEEE Std 802.3xx should be "IEEE Std 802.3bn"

SuggestedRemedy
Change "IEEE Std 802.3xx" to "IEEE Std 802.3bn"

Page 8, line 4
Page 8, line 13
Page 8, line 14
Page 10, line 29
Page 287, line 34
Page 287, line 40
Page 345, line 26
Page 345, line 32

Response
ACCEPT.
Comment ID 3874

Comment Type: E
Comment Status: A

“Transmission” should be “Transmission”

SuggestedRemedy
Change “Transmission” to “Transmission”

Response
Response Status: C
ACCEPT.

Comment ID 3875

Comment Type: E
Comment Status: A

Tables 102-1 and 102-2 have blank cells filled with hyphens, but the IEEE style guide says that empty cells should contain em-dash

SuggestedRemedy
Replace the hyphens in Tables 102-1 and 102-2 with em-dash

Response
Response Status: C
ACCEPT.

Comment ID 3876

Comment Type: E
Comment Status: A

The IEEE Style manual contains:
"Ranges should repeat the unit (e.g., 115 V to 125 V). Dashes should never be used because they can be misconstrued as subtraction signs."
Hence, "(i.e., 0-99)" should be "(i.e., 0 to 99)"

Same issue in the first row of Table 102-6

SuggestedRemedy
Change "(i.e., 0-99)" to "(i.e., 0 to 99)"
In the first row of Table 102-6, change "0x00- 0x08" to "0x00 to 0x08"

Response
Response Status: C
ACCEPT.
Comment ID: 3880

Anslow, Pete

Ciena

Comment Type: E

Comment Status: A

"Clause 103, clause title" should be "Clause 103, Multipoint MAC Control for EPoC"

Suggested Remedy:

Change "Clause 103, clause title" to "Clause 103, Multipoint MAC Control for EPoC"

Response:

Response Status: C

ACCEPT.

Comment ID: 3881

Anslow, Pete

Ciena

Comment Type: E

An error rate would be errors per unit time (e.g., errors per second). Errors are usually characterised as the number of errors divided by the number of bits, so "Error rate simulation..." should be "Error ratio simulation..."

Suggested Remedy:

Change "Error rate simulation..." to "Error ratio simulation..."

Response:

Response Status: C

ACCEPT.

Comment ID: 3882

Anslow, Pete

Ciena

Comment Type: T

In the second to last row of Table 45-3 "1.1952 through 1.1957" should be "1.1953 through 1.1957"

In the last row of Table 45-3 "1.1952 through 1.32767" should be "1.1958 through 1.32767"

Suggested Remedy:

In the second to last row of Table 45-3, change "1.1952" to "1.1953"

In the last row of Table 45-3, change "1.1952" to "1.1958"

Response:

Response Status: C

ACCEPT.

Comment ID: 3883

Anslow, Pete

Ciena

Comment Type: T

In the title of 100.2.12.2.1, "CNU error rate performance" should be "CNU error ratio performance" (an error rate would be errors per unit time).

However, since the specification is given in terms of a frame loss ratio, it would be better to change the title to: "CNU error performance in AWGN channel"

Suggested Remedy:

Change the title to: "CNU error performance in AWGN channel"

Response:

Response Status: C

ACCEPT.

Comment ID: 3884

Anslow, Pete

Ciena

Comment Type: T

This says "at which the CNU is required to meet this error ratio.", but the specification is given in terms of a frame loss ratio.

Suggested Remedy:

Change "to meet this error ratio" to "to meet this frame loss ratio"

Response:

Response Status: C

ACCEPT IN PRINCIPLE.

Adapt wording to that that gets accepted for #3930.

Comment ID: 3885

Anslow, Pete

Ciena

Comment Type: T

In "less than or equal that shown in when operating", there is a missing pointer to the location of the FLR specification

Suggested Remedy:

Change to "less than or equal that shown in 100.2.12.2 when operating"

Response:

Response Status: C

ACCEPT IN PRINCIPLE.

Add the cross reference to the text changes for comment 3930.
<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>101.5</td>
<td>225</td>
<td>29</td>
<td>3886</td>
</tr>
<tr>
<td>Anslow, Pete</td>
<td>Ciena</td>
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<td></td>
<td></td>
</tr>
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<td><strong>Comment Type</strong></td>
<td><strong>Comment Status</strong></td>
<td><strong>TimeSync</strong></td>
<td></td>
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<tr>
<td>T</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Given that 101.5.1 defines three variables and these are also reflected in changes to Clause 45, this editor's note should be replaced by suitable text</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SuggestedRemedy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace the editor's note with suitable text.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Response</strong></td>
<td><strong>Response Status</strong></td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ACCEPT IN PRINCIPLE.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See Cmt# 4181</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>100.6.3.3</td>
<td>126</td>
<td>6</td>
<td>3887</td>
</tr>
<tr>
<td>Lusted, Kent</td>
<td>Intel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Comment Type</strong></td>
<td><strong>Comment Status</strong></td>
<td><strong>ES2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>text in ES2 value/comment box is 2 different sizes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SuggestedRemedy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fix as appropriate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Response</strong></td>
<td><strong>Response Status</strong></td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ACCEPT.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will check and fix as needed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>100.6.3.3</td>
<td>126</td>
<td>6</td>
<td>3888</td>
</tr>
<tr>
<td>Lusted, Kent</td>
<td>Intel</td>
<td></td>
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<td><strong>Comment Type</strong></td>
<td><strong>Comment Status</strong></td>
<td><strong>ES4</strong></td>
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<tr>
<td>E</td>
<td>A</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>text in ES4 value/comment box is different size from rest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SuggestedRemedy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fix as appropriate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Response</strong></td>
<td><strong>Response Status</strong></td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ACCEPT.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will check and fix as needed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>101.1.3</td>
<td>132</td>
<td>15</td>
<td>3891</td>
</tr>
<tr>
<td>Lusted, Kent</td>
<td>Intel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Comment Type</strong></td>
<td><strong>Comment Status</strong></td>
<td><strong>Layer Dia</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The PCS, FEC and PMA blocks in the figure 101-1 show cross-hatching behind the text.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SuggestedRemedy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>please consider fixing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Response</strong></td>
<td><strong>Response Status</strong></td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ACCEPT IN PRINCIPLE.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Editors will attempt to match the shading found in Section 5 of the standard.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The cross-hatching is intentional, it highlights the layers within the diagram that the clause applies to (in this case CI 101). The same is true for Fig 100-1 and 103-2. This was carried over from 10G-EPON</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Comment ID 3892

Cl 101 SC 101.4.4.1 P 221 L 28 # 3892
Lusted, Kent
Intel

Comment Type E

Comment Status A

The text for “Gray1(0) = 1” and “Gray1(1) = -1” is a different font size.

Same for the Graym text in #2.

Suggested Remedy

consider using the same font size

Response Response Status C

ACCEPT.

Correct font sizes for Med Eq in 101.4.4.1
(Open in Eq Ed. Sel all Text, use Char Des to set font size)

Comment ID 3893

Cl 102 SC 102.5.4.3 P 289 L 25 # 3893
Lusted, Kent
Intel

Comment Type E

Comment Status A

Typo in value/comment box for "within"

Suggested Remedy

to "within"

Response Response Status C

ACCEPT.

Response ID 3894

Cl 01 SC 1.4 P 26 L 11 # 3894
Lusted, Kent
Intel

Comment Type ER

Comment Status A

It appears to be common practice to include the mnemonic in parenthesis after the term so for example
1.4.144a coax cable distribution network: would be
1.4.144a coax cable distribution network (CCDN):

Suggested Remedy

Add mnemonics to the following as shown
1.4.144a coax cable distribution network (CCDN):
1.4.144b coax cable distribution network (CCDN):
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Comment ID: 3898

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

Remein, Duane  Huawei Technologies

**Comment:**

in 30.3.2.1.2 we list:

"ATTRIBUTE
APPROPRIATE SYNTAX:"

While in 30.3.2.1.3, and 30.5.1.1.2 we don't.

We should be consistent.

**Suggested Remedy**

Add

"ATTRIBUTE
APPROPRIATE SYNTAX:"

immediately following the Editing Instruction in 30.3.2.1.3, and 30.5.1.1.2

**Response**

ACCEPT IN PRINCIPLE.

See #3843

---

Comment ID: 3899

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

Remein, Duane  Huawei Technologies

**Comment:**

We should be explicit about which table is being changed in the Editing Instruction

**Suggested Remedy**

Add "in Table 45-3" so the instruction reads:

"Change the identified reserved row and insert a new row above it in Table 45-3 as follows (unchanged rows not shown):"

Editor to review all editing instructions in Cl 45 and make similar changes as needed.

Editor to ensure all editing instructions end with a colon.

**Response**

ACCEPT.

See Cmt 3935

---

Comment ID: 3900

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

Remein, Duane  Huawei Technologies

**Comment:**

103.3.2.1 PAUSE operation

See 77.3.2.1.*

Cl 77.3.2.1 refers to "timing constraints in Annex 31B supplement the constraints found at 77.3.2.4.*

Annex 31B is appropriate for EPoC but not 77.3.2.4.

**Suggested Remedy**

Add "and time constraints found at 103.3.2.4"*

**Response**

ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Response

Reported by: Remein, Duane
Huawei Technologies

Comment Type: T
Comment Status: A

RateMatchFail

Cl 00 SC 0 P 89 L 14 # 3901

DS_RateMatchFail and US_RateMatchFail determined but there is no way to report this.

SuggestedRemedy

Add formal definition of each variable in 100.2.6.3

DS_RateMatchFail

TYPE: Boolean

This variable is set to TRUE if the CNU calculation of DS_DataRate differs from the DS_DataRate calculation communicated from the CLT by more than 10 b/s otherwise the variable is set to FALSE.

US_RateMatchFail

TYPE: Boolean

This variable is set to TRUE if the CNU calculation of US_DataRate differs from the US_DataRate calculation communicated from the CLT by more than 10 b/s otherwise the variable is set to FALSE.

Add entries in Table 100-1 for DS_RateMatchFail & US_RateMatchFail as follows:

<table>
<thead>
<tr>
<th>US rate mismatch</th>
<th>10GPASS-XR control</th>
<th>US_RateMatchFail</th>
<th>1.1900.12</th>
<th>0</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS rate mismatch</td>
<td>10GPASS-XR control</td>
<td>DS_RateMatchFail</td>
<td>1.1900.11</td>
<td>0</td>
<td>11</td>
</tr>
</tbody>
</table>

Add Status bit for these variables in Cl 45 Register 1900. In Table 45–98a add two new lines modifying the reserved line accordingly:

1.1900.12 | US rate mismatch[b] | 0 = the upstream rate calculated at the CNU and the CLT is mismatched by greater than 10 b/s | 1 = the upstream rate calculated at the CNU and the CLT matches within 10 b/s | RO
1.1900.11 | DS rate mismatch[b] | 0 = the downstream rate calculated at the CNU and the CLT is mismatched by greater than 10 b/s | 1 = the downstream rate calculated at the CNU and the CLT matches within 10 b/s | RO

Add new 45.2.1.131.1 & 45.2.1.131.2 renumbering as required

45.2.1.131.1 US rate mismatch (1.1900.12)

Bit 1.1900.12 indicates that, when read as a 1, the upstream rate calculated at the CNU and the CLT is mismatched by greater than 10 b/s. This bit is a reflection of the US_RateMatchFail variable defined in 100.2.6.3.

45.2.1.131.2 DS rate mismatch (1.1900.11)

Bit 1.1900.12 indicates that, when read as a 1, the downstream rate calculated at the CNU and the CLT is mismatched by greater than 10 b/s. This bit is a reflection of the DS_RateMatchFail variable defined in 100.2.6.3.

Response

ACCEPT.

MR in PICS states "" however in 100.2.7.1 & 100.2.7.2 there individual requirements for each direction.

SuggestedRemedy

Add below 100.2.7

"Equipment conforming to this standard shall clearly mark supported downstream and upstream frequency ranges."

Remove the last sentence in para's 100.2.7.1 & 100.2.7.2 that both begin "Equipment conforming to this standard shall clearly mark supported ..."

Response

ACCEPT.

For an Neqport-channel per RF port CLT,

Neqport is not format as per other instances ("eqport" is subscripted here)

SuggestedRemedy

Correct formatting and add clarification (which I would normally suggest but I've really no idea what is intended here).

Response

ACCEPT IN PRINCIPLE.

Change:

"For an Neqport-channel per RF port CLT, the applicable maximum power per OFDM channel and spurious emissions requirements are defined using the value of N* per Equation (100-6)." to

"The applicable maximum power per OFDM channel and spurious emissions requirements are defined for the CLT using the value of N* per Equation (100-6)." Also correct the any formatting issues.

Response

ACCEPT.

Comment ID 3903

Page 66 of 123

TYPE: TR/technical required
ER/editorial required
GR/general required
T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected
RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID

9/18/2015 2:08:47 PM
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Comment ID** 3904

**Comment Type** T, Comment Status A, SC 100.2.9.4, P 100, L 23

**Response Status** C

**Response**

Accept in principle.

P1.6t matches what is in DOCSIS PHY 3.1.

Need to add clause 45 support for CNU reporting power for the channel as required for this section. This is an oversight.

Align variables creation with comment #3934.

Page 100, line 27 change

"The CNU updates its reported power per channel in each channel by the following steps" to

"The CNU updates its reported power, ReportedPwr, for the upstream channel by the following steps"

In Cl 45 add register: add 9-bit register to reflect the variable ReportedPwr

Reflect new variable and register in Table 100-1

Add variable in 100.2.9.4

ReportedPwr

TYPE: 9-bit unsigned integer

This variable reports the CNU transmit power, in units of 0.25 dBmV, for the upstream OFDMA channel.

---

**Comment ID** 3905

**Comment Type** T, Comment Status A, SC 100.2.9.5.1, P 101, L 11

**Response Status** C

**Response**

Accept.

Eq 100-11 does not define NS_Max as implied by the statement "Let NS_-

Max be the number of modulated subcarriers in an OFDMA symbol as per Equation (100-11):"

**Suggested Remedy**

Change para to read:

"The parameter SpurFloor is related to the ratio of the number of subcarriers being modulated

by a CNU in an OFDMA symbol to the maximum number of subcarriers available (3840)

including guardbands and is calculated per Equation (100-11):

{*** Equation 101-11 as per draft ***}

Where:

NS_Max is the number of modulated subcarriers in an OFDMA symbol"

---

**Comment ID** 3906

**Comment Type** T, Comment Status A, SC 100.2.9.5.1, P 102, L 13

**Response Status** C

**Response**

Accept in principle.

Page 102, line 8, change "Table 100-9" to "Table 100-7".

Page 102, line 13, change "A 2 dB relief" to "The 2 dB relaxation". Change "This relief " to

"This relaxation".

Page 102, line 23, add as second sentence in paragraph: "The relaxation is added to the

spurious emissions power limits calculated for the Measurement Bandwidths of Table 100-8

and Table 100-9 for Measurement Bandwidths comprising roughly 10% of the upstream

spectrum when the granted spectrum is less than 10% of the 100% Grant Spectrum."
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**CI 100 SC 100.2.9.5.2 P 103 L 22 # 3907**
Remain, Duane Huawei Technologies

**Comment Type T Comment Status D**
I believe Measurement Bandwidth in Eq 100-14 should be MeasurementBW as should have been defined in 100.2.9.5.1

**SuggestedRemedy**
Change Measurement Bandwidth to MeasurementBW

**Proposed Response Response Status Z**
REJECT.
This comment was WITHDRAWN by the commenter.

This was remedied as per prior comment. Measurement Bandwidth is the values from the indicated columns from Table 100-8 and 100-9.

**CI 100 SC 100.25.9.8 P 109 L 20 # 3908**
Remain, Duane Huawei Technologies

**Comment Type T Comment Status D**
I believe this delay time also needs to include the URNrb and USNcp times.
"The delay time through the EPoC PMA (TPMA) is no less than the sum of the RBframe size multiplied by the OFDM symbol time (RBsize of 8 times or 16 times 20 ƒÝs, see 100.2.9.1) plus the implementation specific processing time of the IDFT (nominal range 10 fYs to 40 fYs)."

**SuggestedRemedy**
Change to
"The delay time through the EPoC PMA (TPMA) is no less than the sum of the RBframe size multiplied by the OFDM symbol time (RBsize of 8 times or 16 times 20 ƒÝs plus equivalent time in ƒÝs of USNcp and USNrp) see 100.2.9.1) plus the implementation specific processing time of the IDFT (nominal range 10 fYs to 40 fYs)." Use care for symbols and variable name in italics.

**Proposed Response Response Status Z**
REJECT.
This comment was WITHDRAWN by the commenter.

**CI 100 SC 100.2.10.1 P 110 L 27 # 3909**
Remain, Duane Huawei Technologies

**Comment Type T Comment Status A**
This configuration requirement seems to be saying that the user must exhibit some required behavior. This is not typically a feature of 802.3 standards.

**SuggestedRemedy**
Change
"The CLT shall be configured according to" to
"The CLT should be configured according to"

**Response Response Status C**
ACCEPT IN PRINCIPLE.
Change to "should be" as indicated. Also remove corresponding line from PICS

**CI 100 SC 100.2.10.2 P 111 L 21 # 3910**
Remain, Duane Huawei Technologies

**Comment Type T Comment Status A**
The phrase "when operating at a CNR as shown in Table 100-13" seems to imply that the required error ratio does not have to be met if the CLT is operating at a CNR better than shown in the table.

Note also that in 100.2.10.2 the list of conditions is a numbered list, in 100.2.12.2 it is a bullet list

**SuggestedRemedy**
Change from
"The CLT receiver shall be such that the CLT when operating at a CNR as shown in Table 100-13, ..." to
"The CLT shall achieve a received post-FEC frame loss ratio of 10-6 with 1500 byte MAC packets when the received signal has a CNR greater than or equal to that shown in Table 100-13, ..."
Strike the first para.

Change the list style in both 100.2.10.2 and 100.2.12.2 to DL,DashedList

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

"The CLT shall achieve a received post-FEC frame loss ratio of 10-6 with 1500 byte MAC packets when the received signal has a CNR greater than or equal to that shown in Table 100-13, ..."
Strike the first para.

Change the list style in both 100.2.10.2 and 100.2.12.2 to DL,DashedList

---

**TYPE:** TR/technical required **ER/editorial required** **GR/general required** **T/technical** **E/editorial** **G/general**

**COMMENT STATUS:** D/dispatched A/accepted R/rejected **RESPONSE STATUS:** O/open W/written C/closed U/unsatisfied Z/withdrawn

**SORT ORDER:** Comment ID
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Comment ID: 3911**

**Cl 100 SC 100.2.12.2.1 P 113 L 53 # 3911**

Remein, Duane
Huawei Technologies

**Comment Type:** T  **Comment Status:** A  EZ

We do not have "multiple modulation profile configuration"

**Suggested Remedy:**
Strike "multiple"

**Response:**
ACCEPT.

**Comment ID: 3912**

**Cl 100 SC 100.2.13.2 P 116 L 41 # 3912**

Remein, Duane
Huawei Technologies

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

This rule contradicts the first rule in the list:
"The minimum contiguous modulation band has to be 2 MHz"

The 4th rule in the list is not needed (there is only one profile)

**Suggested Remedy:**
Change 3rd item to
"All contiguous modulation bands are to be 2 MHz or greater"

**Response:**
ACCEPT IN PRINCIPLE.

**Comment ID: 3913**

**Cl 100 SC 100.2.13.2 P 116 L 48 # 3913**

Remein, Duane
Huawei Technologies

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

There are only two instances of the term "spanned modulation" in the draft, both in lines 48-49. There is not need to create this unique term

**Suggested Remedy:**
Change the item from
"Exclusion bands plus individually excluded subcarriers are limited to 20% or less of spanned modulation spectrum, where the spanned modulation spectrum is defined as: frequency of maximum active subcarrier - frequency of minimum active subcarrier."

to
"Exclusion bands plus individually excluded subcarriers are limited to 20% or less of the difference between the maximum and minimum frequencies of all active subcarriers."

**Response:**
ACCEPT IN PRINCIPLE.
Also, Page 117, line 6, "subcarrier" to "subcarriers".

Also change: "Exclusion bands separate contiguous modulation bands. " to "Exclusion bands may separate contiguous modulation bands."

**Comment ID: 3914**

**Cl 100 SC 100.2.13.2 P 116 L 42 # 3914**

Remein, Duane
Huawei Technologies

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

This is the first instance of the term individually excluded subcarriers. Apparently the term "Exclusion band" is defined in the next "rule" but there is not definition of individually excluded subcarriers.

**Suggested Remedy:**
Remove the definition of exclusion bands here pg 116 ln 44
Add in 100.2.8.1 the following definitions
pg 91 ln 36
An exclusion band is a contiguous block of excluded spectrum that is 1 MHz wide or greater.
An individually excluded subcarrier is any excluded subcarrier in a contiguous block of excluded spectrum less than 1 MHz.
add xref after individually excluded subcarriers pg 116 line 42 "(see 100.2.8.1)"

**Response:**
ACCEPT IN PRINCIPLE.
See Comment #3912.
Comment Type: T  Comment Status: D
To be clear the standard does not place restrictions on US excluded subcarrier however neither does it preclude such restrictions.

Suggested Remedy
Add a clarifying statement
" - CLTs may place restrictions on upstream excluded bandwidth based on the capabilities of the receiver. Such restrictions shall be clearly indicated in the unit data sheet."

Add PICS item in 100.6.2 Major capabilities/options
USEX | Upstream subcarrier exclusion rules | 100.2.13.4 | Documentation indicates upstream subcarrier exclusion rule if any exist | CLT:M | Yes [] No [] N/A []

Proposed Response: 
REJECT. This comment was WITHDRAWN by the commenter.

we don't need this statement in the specification as the CLT already must assign upstream subcarrier use, pre-equalizer coefficients, etc. specific to its receiver. Also, this opers the door on this standard having to predict everywhere we may anticipate that a vendor's product may need to put restrictions in data sheets. The Editor feels this comment is not necessary as we can't mandate open-ended stipulations on product documentation. If a CLT cannot handle some arbitrary set of exclusions that a cable operator wants to impose on the upstream, then that CLT is not compliant.

Comment Type: T  Comment Status: A
Which typically is typical?
Here we state:
"The measurement is based on upstream probes, which are typically the same probes used for pre-equalization adjustment (see 101.4.3.9)."
In 100.2.11 pg 112 line 23 we state:
"The CLT measures the RxMER using an upstream probe. The probes used for RxMER measurement are typically distinct from the probes used for pre-equalization adjustment."

One must be wrong
Suggested Remedy
Here in 100.3.3 strike ", which are typically the same probes used for pre-equalization adjustment (see 101.4.3.9)"
In 100.2.11 strike "The probes used for RxMER measurement are typically distinct from the probes used for pre-equalization adjustment."

Response: 
ACCEPT. The suggested remedy is good. Delete the distinction sentences.
Comment Type T  Comment Status A  Homework Tom

Per 1.4.165 continuous wave (CW): A carrier that is not modulated or switched.

Substituting this definition for the 18 instances of "CW" in the subclause creates grammatical errors and is technically incorrect as all our active subcarriers are modulated with at least PHSK.

There are lots of other grammatical errors and technical inconsistencies which should be corrected in this section; for ex:

pg 118 ln 52 "In this configuration the EPoC OFDM continuous pilot is in fact phase continuous in the time domain; in general the continuous pilots are not phase continuous in the time domain," so continuous pilots are phase continuous but they're not.

Pg 118 line 53 "Continuous pilot means that subcarrier is continuously used ..." grammar

Suggested Remedy
Sorry but I'm at a loss as to how to fix this.

Grammatical errors could be fixed by ensuring there is an article, such as "a" or "the" before each instance of CW and the word "signal" after. This should be done at a minimum.

The higher level technical issue is a bit more thorny.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change
"When CW is processed via FFT, the CW is a continuous pilot selected to ..."
to
A CW signal can be generated via an FFT, where the CW signal is constructed as a continuous pilot selected to ...

Pg 119 line 46 and pg 120 line 15 change
"generating one-CW-per-channel" to
"generating one CW signal per channel"

Pg 119 line 16, 22 & 27 add "signal" after "CW"

Remedy is not specific enough on "grammatical errors". Use of "CW" is consistent with existing Clause 1 definition for the signal that is used as part of the measurement conditions for this subclause on "test phase noise requirements".

Globally change "CW carrier" to "CW signal"
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>CL</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>Page</th>
<th>Comment</th>
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</tr>
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<tr>
<td>3920</td>
<td>TR</td>
<td>A</td>
<td>100</td>
<td>2.8.2</td>
<td>92</td>
<td>14</td>
<td></td>
<td>How is this statement accomplished?</td>
<td>Remen, Duane Huawei Technologies</td>
</tr>
<tr>
<td></td>
<td>TR</td>
<td>A</td>
<td>100</td>
<td>2.8.4</td>
<td>95</td>
<td>28</td>
<td></td>
<td>Table 100-5 row 4, 5, &amp; 6 “with commanded power difference removed if channel power is independently adjustable”</td>
<td>Homework Duane</td>
</tr>
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<td>3921</td>
<td>TR</td>
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<td>100</td>
<td>2.8.2</td>
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<td>35</td>
<td></td>
<td>Table 100-5 row 4, 5, &amp; 6 “with commanded power difference removed if channel power is independently adjustable”</td>
<td>Remen, Duane Huawei Technologies</td>
</tr>
</tbody>
</table>

Comment: Table 100-5 row 4, 5, & 6 “with commanded power difference removed if channel power is independently adjustable”

- What does this mean? We have independent power settings per OFDM Channel (see DS_PowerCh(n) in 100.2.8.2.1) hence in EPoC channel power is always independently adjustable.

Suggested Remedy:

- Change with all OFDM channels set to the same power level

Response

- ACCEPT IN PRINCIPLE.
- Remove row at lines 31-35
- Add Table footnote to row at line 27-30

Homework Duane

<table>
<thead>
<tr>
<th>Comment ID</th>
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<th>P</th>
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<td>“with all OFDM channels set to the same power level”</td>
<td>Remen, Duane Huawei Technologies</td>
</tr>
</tbody>
</table>

Comment: “with all OFDM channels set to the same power level”

Response

- ACCEPT IN PRINCIPLE.
- Remove row at lines 31-35
- Add Table footnote to row at line 27-30

Homework Duane

<table>
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<tr>
<th>Comment ID</th>
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<th>SC</th>
<th>P</th>
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<td>C</td>
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<td></td>
<td>“with all OFDM channels set to the same power level”</td>
<td>Remen, Duane Huawei Technologies</td>
</tr>
</tbody>
</table>

Comment: “with all OFDM channels set to the same power level”

Response

- ACCEPT IN PRINCIPLE.
- Remove row at lines 31-35
- Add Table footnote to row at line 27-30

Homework Duane
I find at least 6 shall statements defining various conditions under which Out-of-band noise and spurious must be met yet there is only on requirement for Out-of-band noise and spurious in the PICS (CLTSE). There should be a one-to-one correspondence between shall statements and requirements.

Suggested Remedy
Reword the requirement in this section so that there is one global shall such as
"The CLT modulator shall satisfy the out-of-band spurious emissions requirements of Table 100-6 under the following conditions:
- for measurements below 600 MHz and outside the encompassed spectrum when the active OFDM channels are contiguous or when the ratio of modulated spectrum to gap spectrum within the encompassed spectrum is 4:1 or greater. Gap spectrum is spectrum between active OFDM channel's occupied spectrum and excluded bands within OFDM channel's occupied spectrum.
- in gap spectrum between OFDM channels of at least 6 MHz and gap spectrum within OFDM channels of at least 8 MHz, except for the 1 MHz of excluded subcarriers on each edge of any exclusion band, with relaxations as described in the following paragraphs when applicable.
..."

Search the section for "hidden" requirements and reword accordingly (i.e., include in above global requirement or reword so they are clearly not a requirement). For example on pg 97 line 9 has the text "the equipment has to meet spurious emissions requirements" which appears to be implying a requirement but does not follow correct 802.3 form.

Response
ACCEPT IN PRINCIPLE. but put each SHALL into the PICS rather than re-word the text. The text has different requirement cases that should be enumerated separately.

The Editor shall remove the "MUST" in "The CLT MUST provide for independent selection of center frequency with the ratio of number of active channels to gap spectrum in the encompassed spectrum being at least 2:1."
More importantly what is meant by "active channels"? We only have a maximum of 5 active OFDM channels and there can be many more excluded bands (which if I read pg 96 line 12 qualifies as a "Gap") so this 2:1 ratio will be very hard to maintain if this is the intention.

Suggested Remedy
Clarify the sentence removing the MUST.

Response
ACCEPT IN PRINCIPLE.
Change: "The CLT MUST provide" to "The CLT shall provide"
Change: "number of active channels" to "modulated spectrum"
Verify PICS and update if needed.

"In the rest of the spectrum" Really? Everything outside what is described in the previous two para? From here to infinity and beyond!

Suggested Remedy
Clarify what is meant by "In the rest of the spectrum" so it is bounded.

Response
ACCEPT IN PRINCIPLE.
Change
"In the rest of the spectrum"
To
"In the remainder of the upstream spectrum"
### IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

#### Draft 2.0

<table>
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<th>SC</th>
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Remain, Duane
Huawei Technologies

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

Conflicting definitions
Eq 101-13 and 100-17 both purport to define the ungainly variable
"Under-grant Hold Bandwidth"

**Suggested Remedy**
Rationalize the two definitions.

**Response**  **Response Status:** C

ACCEPT IN PRINCIPLE.

Page 101 line 21 through line 31: Change "Under-grant Hold Bandwidth" to "Under-grant Hold Subcarriers"

<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>#</th>
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<td>106</td>
<td>31</td>
<td>3928</td>
</tr>
</tbody>
</table>

Remain, Duane
Huawei Technologies

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

"Grant Bandwidth" which is written as a variable
1) is an Undefined term
2) Crosses a line

**Suggested Remedy**
Define and avoid line feeds in variables.

**Response**  **Response Status:** C

ACCEPT IN PRINCIPLE.

Fix the line cross problem.

Grant Bandwidth" should be "Grant Spectrum". Add a definition for "grant spectrum" into Clause 100.2.9.5.2: "Grant Spectrum<ital> is the spectrum of the grant (number of resource blocks multiplied by the bandwidth of a single RB) allocated to a CNU in a given RB Frame (see 101.4.3.3.1). Grant Spectrum<ital> may vary from one RB Frame to another. 100% Grant Spectrum<ital> is the bandwidth of the entire upstream transmission resource, which occurs with probes, which incorporate all resource blocks and unused subcarriers."

<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>#</th>
</tr>
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<td>2</td>
<td>3927</td>
</tr>
</tbody>
</table>

Remain, Duane
Huawei Technologies

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

This section contains four shalls with no PIC entry.

**Suggested Remedy**
Remove "shall" or create a PICS statement for each.

**Response**  **Response Status:** C

ACCEPT IN PRINCIPLE.

Add PICS entries.
The statement implies there is a way to specify which CNU the CLT is to collect RxMER measurements for but there is no Cl 45 register for this purpose.

Suggested Remedy

Add section 100.2.11.1 Variables.

Add new variable:
*RxMER_CNU_ID

TYPE: unsigned 14-bit integer

This variable identifies the CNU on which to measure the RxMER in the CLT. When set in the CLT the values in RxMER_SC(n) will reflect the measurements of the CNU whose CNU_ID matches RxMER_CNU_ID when RxMER_Valid goes TRUE. In the CNU this variable is read only and will always have a value of one.

Add row to Table 100-1

<table>
<thead>
<tr>
<th>MER measurement CNU_ID</th>
<th>10GPASS-XR receive MER Control</th>
<th>12.10241.14:0</th>
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<tbody>
<tr>
<td>RxMER_CNU_ID</td>
<td>11241</td>
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</table>

Change 45.2.7a.5 10GPASS-XR receive MER control register (Register 12.10240) to
"45.2.7a.5 10GPASS-XR receive MER control register (Register 12.10240 and 12.10241)"

Add to Table 45-211f

<table>
<thead>
<tr>
<th>12.10241.15</th>
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<td>MER measurement CNU ID</td>
<td>Indicates the CNU on which to measure receive MER at the CLT</td>
<td>R/Wc</td>
</tr>
</tbody>
</table>

cThese bits are valid only in the CLT, in the CNU these bits are reserved and always 0

Add

42.2.7a.5, MER measurement CNU ID (12.10241.14:0)

Bits 12.10241.14:0 indicate the CNU on which to measure receive MER at the CLT. In the CNU these bits are reserved and always 0. These bits are a reflection of variable RxMER_CNU_ID defined in 100.2.11.1

Change 45.2.7a.6 accordingly (Reg 10242 through 12.12287, SC 4 & 5 vs 2 & 3
Comment Type: TR  Comment Status: A

The phrase "Up to fully loaded spectrum" is vague as are the other instances of the word "spectrum" in this list.

Suggested Remedy

Add line 3 *(i.e., all OFDM channels operating over the entire frequency band specified in Table 100-3)*

- change remaining 3 instances of "spectrum" to "occupied spectrum"

Response  Response Status: C

ACCEPT IN PRINCIPLE.

Add as note to "fully loaded spectrum":

The frame loss ratio requirements are levied on all active OFDM channels. Those requirements are to be met with a single channel operating in isolation and up to and including all of the other OFDM channels being operated. This is what is meant by "Up to fully loaded spectrum".

Change all "spectrum" to "modulated spectrum" in the dashed list.

---

Comment Type: TR  Comment Status: A

Presumably the first sentence is referring to the specified limit for port muting. Secondly the 2nd sentence contradicts the first which clearly states that this "applies with all active OFDM channels commanded to the same transmit power level". How can "Commanding a reduction in the transmit level of any, or all but one, of the active OFDM channels" also apply?

Suggested Remedy

Change

*The specified limit for RF output port muting applies when all active OFDM channels or all active OFDM channels except one are commanded to the same transmit power level.*

Response  Response Status: C

ACCEPT IN PRINCIPLE.

Add to second sentence "Starting with all channels commanded to the same power level, then *

---

Comment Type: TR  Comment Status: A

Lines 12-18 define requirements against the CNU and should not be located in the test and measurements section.

Also there are two requirements here and only one is listed in the PICS.

Do we really need to define a variable name (RxMER_mean, RxMER_std & delta_RxMER which are not in the proper format) for such common mathematical entities as the mean and standard deviation?

Lastly is strikes me as odd that there are only requirements for the CNU and none for the CLT.

Suggested Remedy

Change the last sentence of last bullet from:

"The mean, RxMER_mean in dB, and standard deviation, RxMER_std in dB, are computed over the M measurements at both CNR values. The statistical computations are performed directly on the dB values."

To:

"The mean and standard deviation (in dB) of the RxMER measurements are computed over the M measurements at both CNR values. The statistical computations are performed directly on the dB values."

Strike lines 12-18

In 100.2.12.3 pg 114 line 45-46 add:

"The CNU shall provide RxMER measurements with a standard deviation of <= 0.5 dB under the specified conditions specified in 100.3.2.

The difference between the RxMER mean measure at CNR = 35 dB and the mean measure at CNR = 30 dB shall be between 4 dB and 6 dB when measured under he specified conditions specified in 100.3.2."

Why there is no complementary specification for RxMER measured at the CLT is beyond my scope but should be addressed by the TF.

Response  Response Status: C

ACCEPT IN PRINCIPLE.

Change the variables RxMER_mean, RxMER_std, and delta_RxMER to italics.

The prior decision of the TF was to move anything related to test (and "performance under specified conditions") into 100.3. These test sections do have requirements.
A number of issues in this section:

1) Which "upstream channel power metric" does this refer to?

2) Assuming this power metric is to be reported there is no variables defined to use and nothing in CI 45 to do this.

3) "for a single specified upstream user" the same as a CNU?

4) There is no variable defined here or in CI 45 to "provide configurable averaging over a range at least including 1 to 32 probes".

5) This appears to be a CLT requirement (something the CLT is required to do) not a test requirement (something to be done in a lab, verification of the capability is done in a lab environment but that is not unusual).

6) Why is this statement here? While digital power measurements are inherently accurate, the measurement referred to the analog input depends on available calibration accuracy.

Suggested Remedy:

Move this entire section to new section 100.2.10.3. In the moved text:

Change:
"upstream channel power metric" to
"Upstream received power measurement (RxPwr)"

Change:
"for a single specified upstream user" to
"for a single specified CNU"

Strike the statement "While digital power measurements ... calibration accuracy."

Change the "should"s in the 2nd para to definitive statements such as The CLT provides ...

Create and define new variables:
RxPwr (8-bit integer?) defined appropriately
RxPwr,CNU_ID (14-bit integer) defined appropriately
RxPwrAve (5-bit integer) defined appropriately
RxPwrValid (Boolean) defined appropriately

Create new register set in CI 45 (1.1958 and 1.1959), define and assign bits appropriately

Update Table 100-1 with new variables and registers:

| US receive power measurement | US receive power measurement a | | 1.1958.8:0 | RxPwr | | 58 | 8:0 |
| US receive power valid | | | 1.1958.15 | RxPwrValid | | 58 | 15 |
| US receive power CNU | | | 1.1959.14:0 | RxPwr_CNU_ID | | 59 | 14:0 |

Update PICS if needed

Accept in principle.

Leave as 100.3.3 as this is a test subclause and needs to remain in 100.3 as per line 32.
Comment ID 3936

Cl 45 SC 45.2.1.131.3 P 38 L 27
Remain, Duane
Huawei Technologies

Comment Type E Comment Status A EZ
Incomplete sentence: "When bit 1.1900.2 is used to control marking of frames with CRC40
errors to higher layers as described in 101.3.3.1.4."

Suggested Remedy
Strike the "When"

Response Response Status C
ACCEPT.

Comment ID 3937

Cl 45 SC 45.2.1.134.2 P 41 L 31
Remain, Duane
Huawei Technologies

Comment Type E Comment Status A EZ
Missing "the variable" before RBsize

Suggested Remedy
Add

Response Response Status C
ACCEPT.

Comment ID 3938

Cl 101 SC 101.4.1.1 P 169 L 3
Remain, Duane
Huawei Technologies

Comment Type E Comment Status A EZ
What?
"When bit this variable is set"

Suggested Remedy
Change to: "When this variable is set"

Response Response Status C
ACCEPT.

Comment ID 3940

Cl 45 SC 45.2.7a.1.1 P 58 L 45
Remain, Duane
Huawei Technologies

Comment Type E Comment Status A EZ
More accurately
"the OFDM descriptor" is "OFDM DS profile descriptor"

Suggested Remedy
Change to
"OFDM descriptor" to "OFDM DS profile descriptor" in 2 places in this para.

Response Response Status C
ACCEPT.

Comment ID 3941

Cl 45 SC 45.2.1.137.2 P 43 L 44
Remain, Duane
Huawei Technologies

Comment Type E Comment Status A EZ
Stray "." in "initiated.and"

Suggested Remedy
Replace with space

Response Response Status C
ACCEPT.
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>SC</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>SuggestedRemedy</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>#3942</td>
<td>0</td>
<td>E</td>
<td>A</td>
<td>Check the characters that can precede a line break in each clause: Choose Format &gt; Document &gt; Text Options Remove &quot;/&quot; and en-dash if present.</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>#3943</td>
<td>102</td>
<td>E</td>
<td>A</td>
<td>In Fig 102-3 &quot;Frame Timing&quot; and &quot;EPoC Variables&quot; are not strictly functional blocks and should not have boxes around them. Likewise in Fig 102-4.</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>#3944</td>
<td>100</td>
<td>E</td>
<td>A</td>
<td>This title seems a bit odd for a PMD clause and does not match the para text.</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>#3945</td>
<td>0</td>
<td>E</td>
<td>A</td>
<td>Title and Headings in Table 100-1 (and 101-1 and 102-3) could be more accurate.</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>#3946</td>
<td>100</td>
<td>E</td>
<td>R</td>
<td>The ref. para 77.2.2.1 then points to 64.2.2.1. A reference to a reference makes no sense.</td>
<td>REJECT.</td>
</tr>
<tr>
<td>#3947</td>
<td>0</td>
<td>E</td>
<td>A</td>
<td>Much of this register is status; this should be reflected in it's name</td>
<td>ACCEPT.</td>
</tr>
</tbody>
</table>
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Final Response

Cl 100 SC 1002.8.5 P 96 L 8 # 3948
Remein, Duane Huawei Technologies
Comment Type E Comment Status A
"(of the OFDM channel containing the PHY Link)" is well known.
Suggested Remedy
Strike the phrase.
Response Response Status C
ACCEPT IN PRINCIPLE.
All OFDM power settings are made relative the the 6 MHz band containing the PHY Link in DS Channel 1, need to be clear that it is in the first OFDM channel.
Change ")of the OFDM channel containing the PHY Link)" to "contained in OFDM channel 1."

Cl 100 SC 1002.8.5 P 97 L 47 # 3949
Remein, Duane Huawei Technologies
Comment Type E Comment Status A
The lawyer who wrote this section added an extraneous OFDM I believe in:
"For the measurement OFDM channels adjacent to a contiguous block of channels, ..." The sentence refers to a measurement channel not an OFDM channel.
Suggested Remedy
strike the extraneous OFDM
Response Response Status C
ACCEPT IN PRINCIPLE.
See 4043

Cl 100 SC 1002.9.6.1 P 103 L 24 # 3950
Remein, Duane Huawei Technologies
Comment Type E Comment Status A
Mnemonic "RB" not defined in this context.
"MER per RB ..."
Suggested Remedy
replace with "resource block"
Response Response Status C
ACCEPT IN PRINCIPLE.
As per comment, also italicize "RBMER" in sentence.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Final Response

Remein, Duane Huawei Technologies

Comment Type ER Comment Status A EZ

There are 598 instances of "channel" in the draft. 319 are preceded by OFDM and 24 by OFDMA, the remaining 255 should be checked by the editors to see if the it is clear precisely which channel is being referred to.

SuggestedRemedy

Where necessary clarify with one of the following:
"OFDM" (ex Cl 45.2.7a.5.1 pg 62 In 10
"the channel indicated" -> "the OFDM channel indicated")
"OFDMA" (no ex found)
"baseline" (ex as in Cl 100.2.6 pg 88 In 28)
"gap" (ex as in Table 100-5 note pg 95 In 44)
"equivalent 6 MHz" (ex as in Table 100-3 Pg 93 In 5)

(The Editors are invited to add additional qualifying words as needed)
The end result is that nearly all 598 instance have some qualifier.

*** Change to Cl 00 before bring accepted by TF. ***

Response Response Status C

ACCEPT IN PRINCIPLE.
P802.3bn is consistent with the definition of "channel" in the 802.3 definitions, so extra qualification of "OFDM" or "OFMDA" only where it really needs to be done.

Remein, Duane Huawei Technologies

Comment Type ER Comment Status A

There are 598 instances of "channel" in the draft. 319 are preceded by OFDM and 24 by OFDMA, the remaining 255 should be checked by the editors to see if the it is clear precisely which channel is being referred to.

SuggestedRemedy

Where necessary clarify with one of the following:
"OFDM" (ex Cl 45.2.7a.5.1 pg 62 In 10
"the channel indicated" -> "the OFDM channel indicated")
"OFDMA" (no ex found)
"baseline" (ex as in Cl 100.2.6 pg 88 In 28)
"gap" (ex as in Table 100-5 note pg 95 In 44)
"equivalent 6 MHz" (ex as in Table 100-3 Pg 93 In 5)

(The Editors are invited to add additional qualifying words as needed)
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Response Response Status C

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P802.3bn is consistent with the definition of "channel" in the 802.3 definitions, so extra qualification of "OFDM" or "OFMDA" only where it really needs to be done.

Remein, Duane Huawei Technologies

Comment Type ER Comment Status A

There are 598 instances of "channel" in the draft. 319 are preceded by OFDM and 24 by OFDMA, the remaining 255 should be checked by the editors to see if the it is clear precisely which channel is being referred to.

SuggestedRemedy

Where necessary clarify with one of the following:
"OFDM" (ex Cl 45.2.7a.5.1 pg 62 In 10
"the channel indicated" -> "the OFDM channel indicated")
"OFDMA" (no ex found)
"baseline" (ex as in Cl 100.2.6 pg 88 In 28)
"gap" (ex as in Table 100-5 note pg 95 In 44)
"equivalent 6 MHz" (ex as in Table 100-3 Pg 93 In 5)

(The Editors are invited to add additional qualifying words as needed)
The end result is that nearly all 598 instance have some qualifier.

*** Change to Cl 00 before bring accepted by TF. ***

Response Response Status C

ACCEPT IN PRINCIPLE.
P802.3bn is consistent with the definition of "channel" in the 802.3 definitions, so extra qualification of "OFDM" or "OFMDA" only where it really needs to be done.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Comment ID: 3958

Cl 100 SC 100.2.9.5.1 P 101 L 37 # 3958

Remien, Duane
Huawei Technologies

Comment Type: ER
Comment Status: A

Formatting "The measurement bandwidth for" "measurement bandwidth" is not a variable near as I can tell (as opposed to measurementBW which is)
same for
pg 101 line 41-42
pg 102 line 13-14
pg 104 line 34, 36-37, 39, 48, 49-11 (Table header), 32 (note b), (6 x)
pg 105 line 13, 22
pg 106 line 7-10 (Table header)

Suggested Remedy
Change character style to default paragraph style.

Response
Response Status: C
ACCEPT IN PRINCIPLE.
Page 102, Line 11, change "measurementBW" to "Measurement Bandwidth". Add sentence after line 11 formula, "where <ital>Measurement Bandwidth<ital> value is defined in Table 100-8 and Table 100-9."
In formula on line 11, replace "10% modulated spectrum" with "(100% Grant Spectrum / 10)"
In other listed places change "measurement bandwidth" to "Measurement Bandwidth".
Page 101, line 38, add "(see Table 100-8 and Table 100-9)" to end of sentence.

Comment ID: 3959

Cl 100 SC 100.2.10.3 P 105 L 18 # 3959

Remien, Duane
Huawei Technologies

Comment Type: ER
Comment Status: A

This statement strikes me as odd "Table 100-8 lists the required spurious level in a measurement interval." I would expect that if I can by some miracle be able to make a transmitter without any spurious levels I am not allowed to do so. :-(

A similar issues exists at SCL 100.2.9.5.3 pg 104 line 41 "Table 100-8 lists the required adjacent channel spurious emission levels when there ..."

Suggested Remedy
Change the statement to read:
"Table 100-8 lists the allowed spurious emissions for Under-grant Hold Bandwidth conditions."

Response
Response Status: C
ACCEPT IN PRINCIPLE.
Change to unnumbered equations. (that is what they are...)

Comment ID: 3960

Cl 100 SC 100.2.12.3 P 114 L 39 # 3960

Remien, Duane
Huawei Technologies

Comment Type: ER
Comment Status: A

This is the second definition of RxMER, the first appears in 100.2.11. Unfortunately they are slightly different:
100.2.11 "For the purposes of this measurement, RxMER is defined as the ratio of the average power of the ideal BPSK constellation to the average error-vector power. The error vector is the difference between the equalized received probe value and the known correct probe value."
100.2.12.3 "RxMER here is defined as the ratio of the average power of the ideal QAM constellation to the average error-vector power."

Suggested Remedy
Change the definition in 100.2.11 from:
"For the purposes of this measurement, ..." to
"For the purposes of RxMER measurement at the CLT, ..."
Change the definition in 100.2.12.3 from:
"RxMER here is defined as ..." to
"For the purposes of RxMER measurement at the CNU, RxMER is defined as ..."

Response
Response Status: C
ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Comment ID: 3962**

**Cl: 100**  **SC: 100.3.3**  **P: 118**  **L: 23**  **# 3962**

Remein, Duane  Huawei Technologies

**Comment Type: ER**  **Comment Status: A**  **EZ**

We do not have line cards, only CNUs and CLTs. All else is implementation.

**Suggested Remedy:**
Strike "line card"

**Response:**
Accept.

**Comment ID: 3963**

**Cl: 45**  **SC: 45.2.1.131**  **P: 37**  **L: 47**  **# 3963**

Remein, Duane  Huawei Technologies

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

We should be explicit about values for link up ready.
"The CNU is ready to enter the Link-Up state"
Also "R/w"

**Suggested Remedy:**
Change to:
1 = the CNU is ready to enter the Link-Up state
0 = The CNU is not ready to enter the Link-Up state

Change "R/w" to "R/W"

**Response:**
Accept.

**Comment ID: 3964**

**Cl: 100**  **SC: 100.2.7.3**  **P: 90**  **L: 50**  **# 3964**

Remein, Duane  Huawei Technologies

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

While the bit definition allows for a SC0 center freq of 0 MHz the minimum value of 100 does not. Note also that this is a variable not a register.
"This definition equates to a subcarrier 0 center frequency of from 0 MHz to 3276.75 GHz. The minimum value for this register is 100."
Also 3276.75 GHz seems a bit high.

**Suggested Remedy:**
Change to read:
"The minimum value for this variable is 100. This definition equates to a subcarrier 0 center frequency of from 5 to 3276.75 MHz.

**Response:**
Accept in principle.
Line 50: "Change OFDM" to "OFDMA".
Otherwise, the bottom edge of upstream was changed from 5.0 MHz to 7.4 MHz (due to IDFT subcarrier use) in a prior comment round. Adjust the remedy to accommodate starting at 7.4 MHz.

**Comment ID: 3965**

**Cl: 45**  **SC: 45.2.1.135**  **P: 41**  **L: 49**  **# 3965**

Remein, Duane  Huawei Technologies

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

This level of detail is not needed as the ruling definition is in 100.2.7.3.

**Suggested Remedy:**
Strike:
"Subcarriers are numbered from 0 to 4095 with subcarrier 0 at the lowest frequency. This definition equates to a center frequency from 0 MHz to 3.27675 GHz in 50 kHz steps. The minimum value for this register is 100."

so the statement reads:
"Register 1.1908 indicates the center frequency of subcarrier 0 for the upstream OFDM channel. This register is a reflection of the variable US_FreqCh1 defined in 100.2.7.3."

In Table 45-98e strike "in steps of 50 kHz"

**Response:**
Accept.

.Comment ID: 3965 Page 83 of 123 Comment ID
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

<table>
<thead>
<tr>
<th>CI 101</th>
<th>SC 101.4.1.1.1</th>
<th>P 169</th>
<th>L 3</th>
<th># 3966</th>
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<td>Huawei Technologies</td>
<td>Comment Type</td>
<td>T</td>
<td>Comment Status</td>
</tr>
</tbody>
</table>

Comment: We haven't specified when DS/US_PrflCpy is cleared.

Suggested Remedy: Add to each definition:
"The PHY sets this variable to zero on or before indicating the copy process has completed."

Accept.

<table>
<thead>
<tr>
<th>CI 45</th>
<th>SC 45.2.1.152</th>
<th>P 50</th>
<th>L 48</th>
<th># 3968</th>
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<td>Huawei Technologies</td>
<td>Comment Type</td>
<td>T</td>
<td>Comment Status</td>
</tr>
</tbody>
</table>

Comment: This definition of FEC codeword counter does not match the variable it is intended to reflect.

FecCodeWordCount defined in 101.3.3.1.6
Here we define a non-rollover clear on read variable whereas in 101.3.3.1.6
FecCodeWordCount is described as rollover counter.
The same is true for 45.2.1.150 10GPASS-XR FEC codeword success and 45.2.1.151 10GPASS-XR FEC codeword fail.

Suggested Remedy: Change FEC codeword counter, FEC codeword counter success, and FEC codeword counter fail to normal counters (not clear on read, non-rollover) in clause 45.

Accept.

<table>
<thead>
<tr>
<th>CI 45</th>
<th>SC 45.2.1.149</th>
<th>P 48</th>
<th>L 49</th>
<th># 3957</th>
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<td>Huawei Technologies</td>
<td>Comment Type</td>
<td>T</td>
<td>Comment Status</td>
</tr>
</tbody>
</table>

Comment: The description for bits 1.1951.15:8 in Table 45-98ag leave much to be desired.

Suggested Remedy: Change table entry to read:
"indicate the power increase of the PHY Discovery Response if there is no acknowledgment"

Accept.

<table>
<thead>
<tr>
<th>CI 45</th>
<th>SC 45.2.1.163</th>
<th>P 56</th>
<th>L 10</th>
<th># 3969</th>
</tr>
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<tbody>
<tr>
<td>Remein, Duane</td>
<td>Huawei Technologies</td>
<td>Comment Type</td>
<td>T</td>
<td>Comment Status</td>
</tr>
</tbody>
</table>

The description for bits 1.1951.15:8 in Table 45-98ag leave much to be desired.

Suggested Remedy: Change table entry to read:
"indicate the power increase of the PHY Discovery Response if there is no acknowledgment"

Accept.
Cl 56 SC 56.1.3 P 71 L 13 # 3970
Remein, Duane Huawei Technologies

Comment Type T Comment Status A EZ
Is it really proper to refer to "One coaxial cable connected to a CCDN"? We do not refer to One single mode fiber connected to a PON for EPON.

Suggested Remedy
Change to "one CCDN"

Response  Response Status C
ACCEPT.

Cl 101 SC 101.3.2.5.8 P 156 L 22 # 3971
Remein, Duane Huawei Technologies

Comment Type T Comment Status A
"Burst_Time_Header()" in state AGGREGATE_BURST_TIME_HEADER is undefined. However BurstTimeHeader() is.

Suggested Remedy
Change to "BurstTimeHeader() in SD."

Response  Response Status C
ACCEPT.

Cl 45 SC 45.2.1.4 P 34 L 48 # 3972
Marris, Arthur Cadence Design Systems

Comment Type T Comment Status A
No description of "10GPASS-XR capable" bit

Suggested Remedy
802.3by is using 45.2.1.4.a so add the following:
Insert new subclause 45.2.1.4.b before 45.2.1.4.1 as follows:
45.2.1.4.b 10GPASS-XR capable (1.4.10)
When read as one, bit 1.4.11 indicates that the PMA/PMD is able to operate as 10GPASS-XR. When read as a zero, bit 1.4.10 indicates that the PMA/PMD is not able to operate as 10GPASS-XR.

Response  Response Status C
ACCEPT IN PRINCIPLE.
Add new editing instruction pg 34 line 46:
"Insert 45.2.1.4.b before 45.2.1.4.a (as inserted by IEEE Std 802.3by-201x) as follows:" 
Add subclause 45.2.1.4.b
"45.2.1.4.b 10GPASS-XR capable (1.4.10)
When read as one, bit 1.4.10 indicates that the PMA/PMD is able to operate as 10GPASS-XR. When read as a zero, bit 1.4.10 indicates that the PMA/PMD is not able to operate as 10GPASS-XR."

Editor to coordinate the 802.3by editor (Matt Brown) to see if we can "a" and they use "b" so as not to confust the Staff Editors.

Cl 01 SC 1.5 P 27 L 25 # 3973
Victor Hou Broadcom Corporation

Comment Type E Comment Status A EZ
Definition of abbreviation HFC is not correct.

Suggested Remedy
The definition should be "Hybrid Fiber Coax", not "Hybrid Fiber Coax Network."

Response  Response Status C
ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Draft 2.0**

**Final Response**

---

**Comment ID 3974**

**Cl 100 SC 100.2.8.2 P 93 L 10 # 3974**

Paul Nikolich  

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

**Comment**

Several rows of table 100-3 specify an “average MER”. It is not clear to me how to compute that average. Is it the sum of MERs in dBs of all the subcarriers divided by the total number of subcarriers? Or is it the 10 log (the sum of MERs of all the subcarriers divided by the total number of subcarriers)? Or is it something else? 100.2.8.2 CLT output electrical requirements, Table 100-3 CLT RF output requirements Line: 10 15, 20 (average MER rows)

**Suggested Remedy**

Specify how to compute the average MER

**Response**

Response Status C

ACCEPT IN PRINCIPLE.

Add footnote to average MER entries in table 100-3: “See 100.3.2 for average MER calculation method”

---

**Comment ID 3975**

**Cl 00 SC all P all L all # 3975**

Paul Nikolich  

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

Kudos to the Task Group for their perseverance in completing this draft and bringing it to WG ballot

**Suggested Remedy**

**Response**

Response Status C

REJECT.

No Change to the draft (Sorry for the Reject) but thanks for the Kudos. Much appreciated.

---

**Comment ID 3976**

**Cl 00 SC 0 P 13 L 1 # 3976**

Booth, Brad  

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

**Comment**

Table of Contents per the IEEE-SA style guide is only required to show up to heading #3.

**Suggested Remedy**

Change to only show 3 levels of headers.

**Response**

Response Status C

ACCEPT.

---

**Comment ID 3977**

**Cl 01 SC 1.4.144a P 26 L 20 # 3977**

Booth, Brad  

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

**Comment**

Definition does not follow typical format.

Also applies to 1.4.144b and c.

**Suggested Remedy**

Change to read:

1.4.144a coax cable distribution network (CCDN):...
1.4.144b coax line terminal (CLT):...
1.4.144c coax network unit (CNU):...

**Response**

Response Status C

ACCEPT.

---

**Comment ID 3978**

**Cl 01 SC 1.4.294a P 26 L 47 # 3978**

Booth, Brad  

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

**Comment**

Don't use the acronym in the definition.

Also applies to 1.4.345a.

**Suggested Remedy**

Change to read:

1.4.294a orthogonal frequency division multiplexing (OFDM) channel:...
1.4.345a quadrature amplitude modulation (QAM) symbol:...

**Response**

Response Status C

ACCEPT IN PRINCIPLE.

OFDM channel is used extensively in the draft (appears >250x). Thus it is probably a good thing to keep in the definitions list.

Change 1.4.294a to read:

1.4.294a OFDM channel: see 1.4.306a orthogonal frequency division multiplexing (OFDM) channel.

Add 1.4.306a

Insert the following definition after 1.4.306 "Organizationally Unique Identifier (OUI)" as follows:

1.4.306a orthogonal frequency division multiplexing (OFDM) channel: ... “using definition from current 1.4.294a”

Change 1.4.345a as suggested.
Overuse of the US and DS acronyms. While acronyms are easily understood by those working closely with the draft, the DS and US terms can create confusion (is US the USA?).

See Table 75B-1 for how US and DS were used.

**Suggested Remedy**
Change DS to be downstream and US to be upstream.

**Change in the registers and other tables in Clause 45. Review EPoC clauses to ensure the use of the terms are easily understood.**

**Response**
ACCEPT IN PRINCIPLE.

Most of the 585 instances of "DS" and 430 instances of "US" occur in variable names or register names. In such cases no changes will be made.

In cases where these acronyms obscure in subclause titles or para text these will be changed to upstream and downstream as requested.

**Comment ID** 3979

Figs 101-13 and 101-14 don't follow required format and are hard to read.

**Suggested Remedy**
Correct to use the proper font (Helvetica, Arial) in the figures. Align text blocks so that the words don't touch the lines.

**Response**
ACCEPT IN PRINCIPLE.

Most of the 585 instances of "DS" and 430 instances of "US" occur in variable names or register names. In such cases no changes will be made.

In cases where these acronyms obscure in subclause titles or para text these will be changed to upstream and downstream as requested.

**Comment ID** 3980

Figure 101-29 font size is inconsistent with previous figures.

**Suggested Remedy**
Correct the font size.

**Response**
ACCEPT.

Per IEEE Style guide fonts in graphic are to be either Times New Roman or Arial. Most SD in the current STD are in Arial. P802.3bn will use Arial (9 pt preferred) for SD.

**Comment ID** 3981

As this is an amendment to the 802.3, this draft standard will become part of the whole 802.3; therefore, using terms like "In EPoC, this term..."

**Suggested Remedy**
Change definition to read:

"The amplitude-phase representation of the bits of data that modulate a carrier signal or that modulate each of the OFDM subcarriers."

**Response**
ACCEPT IN PRINCIPLE.

(Also see cmt# 4026)
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Comment ID 3984
Booth, Brad
Microsoft

Comment Type: T
Comment Status: A

Figure 102-16 is inconsistent in the font style and hard to read. Transition from WAIT is broken.

Suggested Remedy
- Change to use the correct font. Fix the boxes to remove overhangs and thick lines. Change transition out of WAIT state from Str- to be StrtOfFm.

Response
- Response Status: C
- ACCEPT IN PRINCIPLE.
- Per IEEE Style guide fonts in graphic are to be either Times New Roman or Arial. Most SD in the current STD are in Arial. P802.3bn will use Arial (9 pt preferred) for SD.

Comment ID 3985
Szczepeanek, Andre
Inphi

Comment Type: E
Comment Status: A

Sentence
"Detection of the PHY Link is the first action a CNU must take to join an EPoC network." is duplicated

Suggested Remedy
- Remove duplicate

Response
- Response Status: C
- ACCEPT.

Comment ID 3986
Szczepeanek, Andre
Inphi

Comment Type: E
Comment Status: A

"OFDM channel n" would be better worded as
"OFDM downstream channel n" and would be consistent with the text for US_FREQ

Suggested Remedy
- Change to "OFDM downstream channel n"

Response
- Response Status: C
- ACCEPT.

Comment ID 3987
Amason, Dale
Freescale

Comment Type: E
Comment Status: A

Figure 56-4 entered twice.

Suggested Remedy
- Replace second instance of Figure 56-4 with Figure 56-4a

Response
- Response Status: C
- ACCEPT.

Comment ID 3988
Amason, Dale
Freescale

Comment Type: E
Comment Status: A

Missing underline for added text "Clause 101".

Suggested Remedy
- Add underline.

Response
- Response Status: C
- ACCEPT.

Comment ID 3989
Amason, Dale
Freescale

Comment Type: E
Comment Status: A

Unnecessary comma "Mapping of PCS, and PMA variables"

Suggested Remedy
- Remove comma

Response
- Response Status: C
- ACCEPT.

Comment ID 3990
Amason, Dale
Freescale

Comment Type: E
Comment Status: A

Poor grammar: "shall be meet"

Suggested Remedy
- Change to "shall meet"

Response
- Response Status: C
- ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Cl 101 SC Figure 101-8 P 154 L 27 # 3991**

Amason, Dale
Freescale

**Comment Type:** E  **Comment Status:** A  **Suggested Remedy**

Lone curly bracket { in "FIFO_FEC_TX[sizeFifo]"

Replace with [

**Response**

**Response Status:** C

**ACCEPT.**

---

**Cl 101 SC 101.3.2.5.1 P 144 L 1 # 3992**

Hidaka, Yasuo
Fujitsu Lab. of America

**Comment Type:** E  **Comment Status:** A  **Suggested Remedy**

LDCP in captions of table 101-4 and table 101-5 should be LDPC.

Change LDCP in captions of table 101-4 and table 101-5 with "DPC.

**Response**  **Response Status:** C

**ACCEPT.**

---

**Cl 101 SC 101.3.2.5.8 P 154 L 26 # 3993**

Slavick, Jeff
Avago Technologies

**Comment Type:** E  **Comment Status:** A  **Suggested Remedy**

FIFO_FEC_TX[sizeFifo] has a { instead of [

Make the { a [

**Response**  **Response Status:** C

**ACCEPT.**

---

**Cl 103 SC 103.3.36 P 323 L 14 # 3994**

Slavick, Jeff
Avago Technologies

**Comment Type:** TR  **Comment Status:** R  **Suggested Remedy**

in Figure 103-18 what happens in ACCEPT_REGISTER_REQUEST if both opcode_rx=REGISTER_REQ and insideDiscoveryWindow=FALSE occur at the same time?

Change the path to SIGNAL state to be insideDiscoveryWindow * opcode_rx=REGISTER_REQ

**Response**  **Response Status:** W

**REJECT.**  
This SD is an adaptation of Figure 77-20 with some minor changes such as:
laserOnTime => rfOnTime
laserOffTime => rfOffTime

Given that Fig 77-20 has been implemented numerous time and is know to function correctly it is inadvisable to change it at this time.

If the commenter believes there is an error in the two figures he is invited to submit a maintenance request against the standard.

---

**Cl 102 SC 102.4.1.8.7 P 276 L 10 # 3995**

Slavick, Jeff
Avago Technologies

**Comment Type:** TR  **Comment Status:** A  **Suggested Remedy**

There is an extra * on the exit from INIT and WIAT_FOR_SOF states in Figure 102-24 that could imply a missing condition for the exit to occur, or could be just be extraneous

Remove the * or add missing condition(s)

**Response**  **Response Status:** W

**ACCEPT IN PRINCIPLE.**

Exit condition s/b
PD_Enable * !PdCmplt * SoSF

Exit from INIT state also needs attention.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Cl 102 SC 102.4.1.8.7 P 276 L 19 # 3996
Slavick, Jeff
Avago Technologies

Comment Type: TR
Comment Status: A

In Figure 102-24 in the WAIT_FOR_BDISCWIN state the you do: PdRndDly -= which is missing a value to decrement the variable by

Suggested Remedy
Convert add the missing decrement value

Response
Response Status: W
ACCEPT IN PRINCIPLE.
s/b PdRndDly - -

Cl 100 SC 1.1 P 77 L 16 # 4005
Effenberger, Frank
Huawei

Comment Type: E
Comment Status: A EZ

The phrase "Trunk and branch" is used here; however, in clause 67.2.3, the term "Tree and branch" term is used. I believe that "tree and branch" is actually the widely used term, even though it is not so correct

Suggested Remedy
Make the terms uniform, one way or another.

Response
Response Status: C
ACCEPT.

Response
Response Status: C

Cl 100 SC 2.9.5.1 P 101 L 6 # 4006
Effenberger, Frank
Huawei

Comment Type: E
Comment Status: A EZ

"Spurs" is used without definition, specifically "discrete spurs".

Suggested Remedy
Define "Spur" as a shortening of "spurious emission".
Define "Discrete spur" as a "spurious emission that is contained within one subcarrier bandwidth" (Is that suitable?)

Response
Response Status: C
ACCEPT IN PRINCIPLE.
Add a footnote to "spurs" on Line 6 as:
"Discrete (narrowband) spurious emissions, such as a continuous wave (CW) sinusoid or other signal with significant power concentrated in small bandwidth."

Cl 56 SC P 68 L # 4004
Effenberger, Frank
Huawei

Comment Type: E
Comment Status: R

Fig 56-4a has a box labelled "Node" in the Coax network. This is misleading, as "Node" has a very specific meaning in the HFC context. The same term is used in Fig. 100-1, 101-1, and 103-2. Those should be changed as well.

Suggested Remedy
Replace "Node" with "splitter network".

Response
Response Status: C
ACCEPT.

Response
Response Status: C

Cl 100 SC 1.1 P 78 L 16 # 4007
Effenberger, Frank
Huawei

Comment Type: T
Comment Status: A EZ

The composition of the CCDN is explained to be cables, taps/couplers, and (optionally) amplifiers. Might it also be mentioned that optical analogs are also possible?

Suggested Remedy
Add the following phrase after amplifier, "and/or analog optical links"

Response
Response Status: C
ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID
Regarding transient spurious emissions, it says, "This requirement does not apply to CNU power-on and power-off transients." Which requirement exactly? And, is that really true? A compliant CNU could emit a gamma ray burst of interference when I turn it on or off?

**Suggested Remedy**

At a minimum, precise what requirement is being released for the power-on/off transients. And, validate if power cycles really are exempt, because they happen, and if these transients can cause trouble, then they should not be allowed.

**Response**

ACCEPT IN PRINCIPLE.

Line 42, change "This requirement does not apply to CNU power-on and power-off transients." to "The transient response requirement does not apply to CNR power-on and power-off transients."

---

"comprised of" is incorrect. comprising = composed of.

This usage is repeated several times in the draft.

**Suggested Remedy**

Change "comprised of" to "composed of" or "comprising" throughout the draft.

**Response**

ACCEPT.

Changed to Clause 00.

---

There is one service interface, with multiple primitives.

**Suggested Remedy**

Rephrase to clarify, or add appropriate definition.

**Response**

ACCEPT IN PRINCIPLE.

Change "These PMD sublayer service interfaces are" to "The service interface is".

---

What are "modulation symbols"? are these the QAM symbols defined in 1.4.345a?

**Suggested Remedy**

Rephrase to clarify, or add appropriate definition.

**Response**

ACCEPT IN PRINCIPLE.

Change "The PMD service interface supports the exchange of a continuous stream of OFDM/OFDMA modulation symbols between the PMA and PMD entities. The modulation symbols are encoded as I / Q value pairs. "

to:

"The PMD service interface supports the exchange of a continuous stream of OFDM/OFDMA time domain sampled waveform between the PMA and PMD entities. The samples are encoded as complex numbers, i.e., I / Q value pairs. "
Comment Type E Comment Status R

This subclause contains several similar paragraphs, the differences are very difficult to discern. It seems that converting it to a table may yield shorter text and make it easier to understand the differences between cases.

Suggested Remedy
Consider reformatting and adding a table.

Response Response Status C
REJECT.
The TF considered this proposal and prefers to keep the text as is.

Response

Comment Type T Comment Status A
It is not clear what "OFDM" stands for in the context of MDIO. Unlike most other MMD names, there is no sublayer called OFDM. Shouldn't the OFDM control be part of the PMA/PMD?

Suggested Remedy
Either merge these registers into the PMA/PMD, or provide a reference to where the "OFDM" sublayer/entity is defined, or add a description in 45.2.7a.

Response Response Status C
ACCEPT IN PRINCIPLE.
See cmt# 4064
### IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Comment ID**: 4028

**Cl**: 100  
**SC**: 100.2.1.2  
**P**: 86  
**L**: 28  
**Response Status**: C  
**Ran, Adee**  
**Intel**

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

MHZ is a measure of frequency. This seems to be a signaling rate, measured in Baud. "speed" is incorrect.

**Suggested Remedy**

Change "nominal speed of 204.8 MHz" to "nominal rate of 204.8 MBd".

Correct in other places as necessary.

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

Change to "nominal rate of 204.8 million samples per second (Msps)"

Also change to "Msps" in all uses.

---

**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 communication 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.

**Suggested Remedy**

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**: W  
**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 about this definition please submit a maintenance request.

Also please see related cmt# 3956, 4059

---

**Comment ID**: 4035

**Cl**: 00  
**SC**: 100.2.8.6  
**P**: 99  
**L**: 6  
**Response Status**: C  
**Andy Gardner**  
**linear**

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

There are multiple instances of "must" in the draft after the front-matter, the first instance being at line 6 page 99. The IEEE convention is to use "shall" when a specification is mandatory.

**Suggested Remedy**

Consider replacing "must" with "shall".

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

Changed to Clause 00 and the Chief Editor will deal with the other clauses. Update PICS as appropriate.
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>4036</td>
<td>45</td>
<td>59</td>
<td>5</td>
<td>E</td>
<td>A</td>
<td>Comprise means &quot;includes&quot;, so I think is not the right word here since the subcarriers are the signal which is different than the channel</td>
<td>ACCEPT.</td>
<td>C</td>
</tr>
<tr>
<td>4037</td>
<td>45</td>
<td>60</td>
<td>6</td>
<td>E</td>
<td>A</td>
<td>Misuse of &quot;comprise&quot;</td>
<td>ACCEPT.</td>
<td>C</td>
</tr>
<tr>
<td>4038</td>
<td>100</td>
<td>78</td>
<td>44</td>
<td>E</td>
<td>A</td>
<td>Several misalignments in this figure: the pilot insertion boxes are all a few pixels to the left of the IFFT boxes below. The pilot insertion 1 and 5 boxes don't align with the edges of the symbol mapper box above. The arrow to the right of the Subcarrier Configuration and bit loading box doesn't go all the way to the box. The boxes around &quot;SCRAMBLER&quot; and &quot;FCP GENERATION&quot; are slightly different heights</td>
<td>ACCEPT IN PRINCIPLE.</td>
<td>C</td>
</tr>
<tr>
<td>4039</td>
<td>100</td>
<td>79</td>
<td>29</td>
<td>E</td>
<td>A</td>
<td>Several misalignments in this figure: the pilot insertion boxes are all a few pixels to the left of the IFFT boxes below. The pilot insertion 1 and 5 boxes don't align with the edges of the symbol mapper box above. The arrow to the right of the Subcarrier Configuration and bit loading box doesn't go all the way to the box. The boxes around &quot;SCRAMBLER&quot; and &quot;FCP GENERATION&quot; are slightly different heights</td>
<td>ACCEPT IN PRINCIPLE.</td>
<td>C</td>
</tr>
<tr>
<td>4040</td>
<td>100</td>
<td>80</td>
<td>34</td>
<td>E</td>
<td>A</td>
<td>Several misalignments in Figure 100.3. There is a gap between the Pre-equalization and IDFT box and the box below. The arrow below the Staging and Pilot Insertion doesn't go all the way to the box. Several of the corners in the arrow lines either don't join or extend past the intersection point when they go around a 90 degree bend.</td>
<td>ACCEPT IN PRINCIPLE.</td>
<td>C</td>
</tr>
</tbody>
</table>
Comment Type: E  Comment Status: A  EZ

Similar alignment issues to previous figures: the De-interleaving 1-5 boxes don't line up with the FFT boxes below, and De-interleaving 1 and 5 boxes don't line up with the symbol mapper box above. The arrow to the right of the Subcarrier configuration and bit loading box doesn't go all the way to the box.

Suggested Remedy
Zoom in close and tidy up the figure by nudging the elements to line up.

Response  Response Status: C

ACCEPT IN PRINCIPLE.
We do nudge these up and Framemaker cheerfully misaligns at its whim. We will go back and re-nudge to see if it behaves this time.

Comment Type: E  Comment Status: A  EZ

Similar alignment problems as with previous figures. There is a gap between the 64B/66B decoder box and the FEC decoder box below. The arrow from the Pilot and Marker Pattern box doesn't touch the box. The tiny gap between the OFDM Frame Configuration and Bit Loading box and the Frame Timing box below should be made larger if it was intentional or eliminated if not.

Suggested Remedy
Zoom in close and tidy up the figure by nudging the elements to line up.

Response  Response Status: C

ACCEPT IN PRINCIPLE.
We do nudge these up and Framemaker cheerfully misaligns at its whim. We will go back and re-nudge to see if it behaves this time.

Comment Type: E  Comment Status: A  EZ, comprised

Misuse of "comprised"

Suggested Remedy
Replace "comprised" with "composed"

Response  Response Status: C

ACCEPT.

Comment Type: E  Comment Status: A

This time "comprise" is OK, but spurious "of"

Suggested Remedy
replace "burst may comprise of one or more" with "burst may comprise one or more" (since "comprise" mean "include" in this context)

Response  Response Status: C

ACCEPT.
**Comment ID** 4047

**Cl** 101  **SC** 101.4.2.6  **P** 175  **L** 48  # 4047

Trowbridge, Steve  
Alcatel-Lucent

**Comment Type** E  **Comment Status** A  
**EZ, comprised**

**SuggestedRemedy**  
Replace "comprised" with "composed"

**Response**  
Response Status C  
ACCEPT.

---

**Comment ID** 4048

**Cl** 101  **SC** 101.4.2.6.1  **P** 176  **L** 39  # 4048

Trowbridge, Steve  
Alcatel-Lucent

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

**SuggestedRemedy**  
At least one misalignment in Figure 101-18: the box around the "P" (preamble) box to the right of the PHY LINk box is offset slightly higher than the rest of the line

**Response**  
Response Status C  
ACCEPT.

---

**Comment ID** 4049

**Cl** 101  **SC** 101.4.2.7  **P** 180  **L** 15  # 4049

Trowbridge, Steve  
Alcatel-Lucent

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

**SuggestedRemedy**  
Some misalignment in Figure 101-19. The arrow down to the lower left XOR crosses slightly over the line above. If the arrows down from the Seed (0x4732BA) box were intended to touch the box, they don't.

**Response**  
Response Status C  
ACCEPT.

---

**Comment ID** 4050

**Cl** 101  **SC** 101.4.3.3.5  **P** 200  **L** 17  # 4050

Trowbridge, Steve  
Alcatel-Lucent

**Comment Type** E  **Comment Status** A  
**EZ, comprised**

**SuggestedRemedy**  
Misuse of "comprised"

**Response**  
Response Status C  
ACCEPT.

---

**Comment ID** 4051

**Cl** 102  **SC** 102.1.2  **P** 238  **L** 24  # 4051

Trowbridge, Steve  
Alcatel-Lucent

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

**SuggestedRemedy**  
Misalignments in Figure 102-4. The four "to PMA" instances are all slightly different levels from each other and the arrows down to them are slightly different lengths.

**Response**  
Response Status C  
ACCEPT.

---

**Comment ID** 4052

**Cl** 102  **SC** 102.3.5.7  **P** 267  **L** 6  # 4052

Trowbridge, Steve  
Alcatel-Lucent

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

**SuggestedRemedy**  
At least one misalignment in figure 102-18: the arrow looping back into the WAIT state at the top goes beyond the line of the box.

**Response**  
Response Status C  
ACCEPT.
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Cl</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>#</th>
<th>Final Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>4053</td>
<td>102</td>
<td>102.4.1.4</td>
<td>269</td>
<td>45</td>
<td>EZ, comprised</td>
<td>Misuse of &quot;comprised&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Replace &quot;comprised&quot; with &quot;composed&quot;</td>
</tr>
<tr>
<td>4054</td>
<td>103</td>
<td>103.1.2</td>
<td>299</td>
<td>44</td>
<td>EZ</td>
<td>At least one misalignment in Figure 103-2: the MDI box at the bottom is misaligned with the coax box below</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Zoom in close and nudge the elements of the figure to line up</td>
</tr>
<tr>
<td>4055</td>
<td>103</td>
<td>103.3.4.6</td>
<td>329</td>
<td>28</td>
<td>EZ</td>
<td>At least one misalignment in Figure 103-23: the arrow from &quot;BEGIN&quot; doesn't touch the &quot;WAIT&quot; box below</td>
</tr>
<tr>
<td></td>
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<td></td>
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<td>Zoom in close and nudge the elements of the figure to line up</td>
</tr>
<tr>
<td>4056</td>
<td>103</td>
<td>103.3.6.2</td>
<td>342</td>
<td>42</td>
<td>EZ</td>
<td>At least one misalignment in Figure 103-31: the line down from B0 extends past the horizontal line as the arrow turns to the right.</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Zoom in close and nudge the elements of the figure to line up. Same issue Figure 103-33 on page 344</td>
</tr>
<tr>
<td>4057</td>
<td>45</td>
<td>45.2.1.137</td>
<td>43</td>
<td>15</td>
<td>EZ</td>
<td>typo - &quot;it not being modifed&quot; should be &quot;is not being modified&quot; - 2 instances, lines 15 and 25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>replace &quot;it&quot; with &quot;is&quot; on lines 15 &amp; 25.</td>
</tr>
<tr>
<td>4058</td>
<td>45</td>
<td>45.2.1.153</td>
<td>51</td>
<td>21</td>
<td>EZ</td>
<td>spelling &quot;recieved&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>replace &quot;recieved&quot; with &quot;received&quot;</td>
</tr>
</tbody>
</table>
Response

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.

Suggested Remedy

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 definition, but inserting and using a new term: 'frequency channel' with the same definition as currently listed and adding to the definition: "This is identical to the definition 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

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 about this definition please submit a maintenance request.

Also please see cmnt# 4030 and 3956

Response

ACCEPT IN PRINCIPLE.

Pg 44 line 35 change

"Bits 1.1911.11:0 set the starting subcarrier of the downstream"

to

"Bits 1.1911.11:0 set the starting subcarrier number of the downstream"

Pg 45 line 9 change:

"Bits 1.1912.11:0 set the starting subcarrier of the upstream"

to

"Bits 1.1912.11:0 set the starting subcarrier number of the upstream"

Response

ACCEPT.

Note: P. Anslow has been ok with this however, happy to change...<g>
Comment ID: 4062

Comment Type: ER
Comment Status: A

Comment: Editing instruction "change" should be "insert"

Suggested Remedy:
Change editing instruction to "Insert four new columns to the right of the existing columns, and 2 new rows at the end of Table 56-3 (unchanged rows not shown)

Delete unchanged rows from the table.
Show the new rows without underline. (coordinate with IEEE staff whether new column headers should be underlined - that's above my pay grade...)

Response: ACCEPT.
As noted with exception of adding only one row at the end, following "10GBASE-PR-U4".
NOTE: the column headers should be cross references to the appropriate clauses.

Comment ID: 4063

Comment Type: TR
Comment Status: A

Comment: Description of register is unclear: "Register 1.1908 indicates the center frequency, in steps of 50 kHz, of subcarrier 0 for the upstream OFDM channel. Subcarriers are numbered from 0 to 4095 with subcarrier 0 at the lowest frequency. This definition equates to a center frequency from 0 MHz to 3.27675 GHz in 50 kHz steps. The minimum value for this register is 100."

Does this mean the value in the register is the frequency (in Hz) / 50 kHz? How can the minimum value be 100 (assumed decimal) if the register equates from a center frequency from 0 MHz to 3.27675 GHz? Minimum frequency should be 5 MHz then, if I am correct that this register = center frequency (Hz) / 50 000.

Suggested Remedy:
Insert after "in steps of 50 kHz", ", e.g., the value equals the center frequency (Hz) divided by 50 000."

Replace "center frequency from 0 MHz" with "center frequency from 5 MHz".

Editor to search and correct other references (e.g., 100.2.7.3 page 90, line 50) to the start frequency.

Response: ACCEPT IN PRINCIPLE.
Changed from Cl 45 to Cl 00
Change here and 2x in Cl 100 (Pg 90 lines 41 & 48)
"in steps of 50 kHz" to
"in units of 50 kHz"

Replace "center frequency from 0 MHz" with "center frequency from 5 MHz" here and Cl 100 Pg 90 line 51.

In Table 45–98c
Change
"OFDM channel" to
"downstream OFDM channel" (5x)

In Table 45–98e change:
"This specifies the center frequency of subcarrier 0 of the upstream OFDM channel in steps of 50 kHz."

to
"This specifies the center frequency of subcarrier 0 of the upstream OFDM channel"
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Cl 00 SC 45.2 P 31 L 31 # 4064
Zimmerman, George
CME Consulting, Inc.

Comment Type: TR  Comment Status: A  CI 45 Device Address

OFDM is defined as a modulation technique already. It is inappropriate for a device name - it makes no sense if you spell out the acronym as defined. Additionally, you can't tell if the OFDM device is a new sublayer, a type of PMA/PMD or a complete PHY with multiple sublayers. - it isn't in any layering diagram I was able to find. an OFDM framer shows up as a subpart of a 'PMA in Figure 100-3, but that doesn't seem to fit the bill for a 'device included in package' - that would be handled by the PMA.

Suggested Remedy
Replace "OFDM" with "OFDM PMA/PMD" (if PMA/PMD is, in fact appropriate, or if something else, e.g., PHY, then add that) on line 31, editor to search and make corresponding replacements (e.g., lines 11&12 page 32)

Additionally, show the device "OFDM PMA/PMD" (or PHY or whatever) in the layering diagrams of clauses 76, 100 and 101, as appropriate.

Response
ACCEPT IN PRINCIPLE.
Changed from Cl 45 to Cl 00

In Table 45–1 change
OFDM to
OFDM PMA/PMD

Change:
*45.2.7a OFDM registers" to
*45.2.7a OFDM PMA/PMD registers"

Pg 58 line 5 change:
"OFDM MMD" to
"OFDM PMA/PMD MMD"

In Table 45–211a change
"OFDM registers" to
"OFDM PMA/PMD registers"

In Fig 100-1, 101-1, and 103-2 change (2x)
"PMA (Clause 101)" to
"OFDM PMA (Clause 101)"
and
"XR-type PMD (Clause 100)" to
"OFDM PMD (Clause 100)"

In Fig 100-2, 3, 4 & 5
Change "PMA" to "OFDM PMA"
and Change "PMD" to "OFDM PMD"

Cl 45 SC 45.2.1.6 P 35 L 3 # 4065
Zimmerman, George
CME Consulting, Inc.

Comment Type: E  Comment Status: A  EZ

Editing instruction is "Change", changes are hard to find because they are not until the next page - recommend just having the changed entries, rather than the entire table, as other drafts are changing this.

Suggested Remedy
Just show the changed rows.

Response
Response Status: C
ACCEPT IN PRINCIPLE.
Remove 1st part of table (Bits 1.7.15:10, 1.7.9, .1.7.8 & 1.7.7:6)

Change editing instruction to read:
"Change Table 45–7 as follows (unchanged rows not shown):"

Cl 99 SC P 8 L 13 # 4066
Regev, Alon
Ixia

Comment Type: E  Comment Status: A  EZ
On lines 13 & 14, "IEEE P802.3xx Task Force name" should be replaced by "IEEE P802.3bn EPON Protocol over Coax Task Force"

Suggested Remedy
On lines 13 & 14, change
"IEEE P802.3xx Task Force name" to
"IEEE P802.3bn EPON Protocol over Coax Task Force"

Response
Response Status: C
ACCEPT.

Cl 99 SC P 8 L 4 # 4067
Regev, Alon
Ixia

Comment Type: E  Comment Status: A  EZ
"802.3xx" should be "802.3bn"

Suggested Remedy
change "802.3xx" to "802.3bn"

Response
Response Status: C
ACCEPT.
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<td>EPoC should not be hyphenated at &quot;EP-oC&quot;.</td>
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</table>
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Final Response

Comment ID 4074

Cl 101 SC 101.3.2.1.2 P 136 L 21
Dwelle, David, Linear Technology

Comment Type E Comment Status A

Missing space: "excluding the 64B/65B sync header"

SuggestedRemedy
Change to: "excluding the 64B/65B sync header"

Response Response Status C
ACCEPT.

Wrong clause, correct page and line number. This comment is against 101.3.2.1.2. Accept as suggest.

Response

Comment ID 4075

Cl 102 SC 102.1 P 235 L 6
Dwelle, David, Linear Technology

Comment Type E Comment Status A

Extra apostrophe: "between the CLT PHY and its subtended CNU"

SuggestedRemedy
Change to: "between the CLT PHY and its subtended CNU"

Response Response Status C
ACCEPT IN PRINCIPLE.

See Comments #4159 & 4162

Response

Comment ID 4076

Cl 56 SC 56.1.2.1 P 67 L 39
Rahman, Saifur, Comcast Cable

Comment Type E Comment Status A

Not sure if this is accurate: nominal bit rate of...up to 10 Gb/s in the upstream direction.

SuggestedRemedy
Align state bit rate stated in clause 100.1 with above by changing 10 Gb/s to 1.6 Gb/s.

Response Response Status C
ACCEPT.
See comment #3743

Response

Comment ID 4077

Cl 67 SC 67.2 P 73 L 43
Rahman, Saifur, Comcast Cable

Comment Type E Comment Status A

Following implies there are example(s) of EPoC topologies in the subclause but was unable to find figure for EPoC.

This subclause also shows some examples of different P2MP PON and EPoC topologies.

SuggestedRemedy
Add figure and reference or if figure exists reference to it.

Response Response Status C
ACCEPT IN PRINCIPLE.

No figure was supplied by the commenter. (We deleted this figure in prior comments rounds and removed text, but missed removing this sentence.) Delete the sentence: "This subclause also shows some examples of different P2MP PON and EPoC topologies."

Response

Comment ID 4078

Cl 100 SC 100.1.3 P 77 L 43
Rahman, Saifur, Comcast Cable

Comment Type E Comment Status A

Clause 103 is not mentioned in the summary description of the functional layers of EPoC as stated below

Clause 100 focuses on functions of the PMD sublayer, Clause 101 focuses on PCS and PMA, and Clause 102 focuses on PHY Link.

SuggestedRemedy
Add description that Clause 103 is a modified version of MPCP for EPoC

Response Response Status C
ACCEPT IN PRINCIPLE.
In subclause title for 100.1.3, change "within" to "supporting". Add separate paragraph following line 44:

"Clause 103 replicates functions of Clause 77 Multipoint MAC Control Protocol (MPCP) with updates necessary for EPoC operation."
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Cl 100 SC 100.2.6.1 P 90 L 43 # 4079

Response

Cl 100 SC 100.2.6.1 P 90 L 43 # 4079

Rahman, Saifur
Comcast Cable

Comment Type T Comment Status A

Formula for extended symbol duration does not include the rolloff time.

Suggested Remedy
Verify definition of extended symbol does not include roll off time.

Response

Cl 101 SC 101.3.2.5.4 P 148 L 35 # 4080

Remeim, Duane
Huawei Technologies

Comment Type E Comment Status A

Fragment:

- BQ is 220, 76, or 12 for FR = 16200, 5940, or 1120, respectively
- FR is 1800, 900, or 200 for FR = 16200, 5940, or 1120, respectively

Suggested Remedy
Make part of the previous “Where:”

Response

Cl 101 SC 101.3.2.5.4 P 148 L 39 # 4081

Remeim, Duane
Huawei Technologies

Comment Type E Comment Status A

Somewhat confusing:

“Al codeword encoding follows the same procedures as the downstream with the following differences:”

Suggested Remedy
To:

“Al codeword decoding follows the same procedures as the downstream with the following differences:”

Response

Cl 101 SC 101.3.3.1.1 P 157 L 51 # 4082

Remeim, Duane
Huawei Technologies

Comment Type E Comment Status A

Wording:

“The CLT receiving PCS process receives an upstream burst from a CNU from the PMA Client of a length of R bits.”

Suggested Remedy
To:

“The CLT receives an upstream burst with a length of R bits from a CNU via the PMA Client.”

Response


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<th>Comment ID</th>
<th>Page</th>
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<td>C</td>
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<td>Strike the two para's from line 17-24</td>
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<td>A</td>
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| 101 | 101.4.3.3.2 | 199 | 36 | 4090 | E | A | As a clarification add to 101.4.3.3.2 & 101.4.3.3.4 "No MAC data is transmitted during the burst marker." | ACCEPT IN PRINCIPLE. See 4129 |

| 101 | 101.4.3.4.5 | 203 | 26 | 4091 | E | A | Stray variables section | Remove | ACCEPT. Do last to keep numbering consistent with comments |
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Comment ID 4093**

*CL 101 SC 101.4.2.2 P 171 L 52 # 4093*

Remain, Duane  
Huawei Technologies

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

Table 101-7 does not relate to the CLT Master Clock  
"the 10.24 MHz CLT Master Clock (Table 101–7)"

**SuggestedRemedy**

Remove the ref to Table 101-7.

Response  
**Response Status C**

ACCEPT IN PRINCIPLE.

Change:

"The CLT shall lock the 204.8 MHz downstream OFDM Clock and downstream OFDM RF transmissions to the 10.24 MHz CLT Master Clock (Table 101–7)."

To

"The CLT shall lock the 204.8 MHz downstream OFDM Clock and downstream OFDM RF transmissions to the 10.24 MHz Downstream Master Clock frequency as specified in Table 100–3."

---

**Comment ID 4094**

*CL 101 SC 101.4.2.5 P 175 L 6 # 4094*

Remain, Duane  
Huawei Technologies

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

This sentence could use a ref to Fig 102-12  
"The Timestamp marks the first subcarrier of the first symbol after the Preamble."

**SuggestedRemedy**

Add ref. to end of sentence "(see Figure 102-12)"

Response  
**Response Status C**

ACCEPT.

---

**Comment ID 4095**

*CL 101 SC 101.4.2.8.1 P 180 L 36 # 4096*

Remain, Duane  
Huawei Technologies

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

Several links not correct and/or live  
In 36: 101.4.3.6.4 should be 101.4.2.7.  
In 37: 101.4.3.6.x should be ???.  
In 40: 101.4.2.1 should be 101.3.2.5.6

**SuggestedRemedy**

Remake links live with correct SCI number per comment

Response  
**Response Status C**

ACCEPT IN PRINCIPLE.  
Ref @ line 37 s/b to 101.4.2.8.7

---

**Comment ID 4097**

*CL 101 SC 101.4.2.8.3 P 183 L 36 # 4097*

Remain, Duane  
Huawei Technologies

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

The TLA LLR only appears twice in the draft once where it is defined and once where it is used 7 lines later. A quick google search indicates this should be "log-likelihood ratios" without caps and only one hyphen.

**SuggestedRemedy**

Remove the TLA definition and replace it in line 44 with "log-likelihood ratios".  
At line 36 change "Log-Likelihood-Ratios" to "log-likelihood ratios"

Response  
**Response Status C**

ACCEPT.

---

**Comment ID 4098**

*CL 101 SC 101.4.2.9.2 P 185 L 41 # 4098*

Remain, Duane  
Huawei Technologies

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

Verb tense "If NI were not divisible ... branches would not be filled."

**SuggestedRemedy**

Change to "If NI is not divisible ... branches are not filled."

Response  
**Response Status C**

ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Comment ID 4099

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

**FEC-OSize does not just include parity but also includes the CRC40:**
"The number of 72-bit vectors constituting the parity (overhead) portion of a FEC codeword."

**Suggested Remedy**
Change to:
"The number of 72-bit vectors constituting the overhead (parity and CRC40) portion of a FEC codeword."

**Response**  
**Response Status**: C  
ACCEPT.

---

Comment ID 4100

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

**FEC-OSize does not just include parity but also includes the CRC40:**
"The number of 72-bit vectors constituting the parity (overhead) portion of a FEC codeword."

**Suggested Remedy**
Change to:
"The number of 72-bit vectors constituting the overhead (parity and CRC40) portion of a FEC codeword."

**Response**  
**Response Status**: C  
ACCEPT.

---

Comment ID 4102

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

**BP & BQ are not for downstream only.**

**Suggested Remedy**
"downstream " from "payload portion of the downstream FEC codeword" so it reads:

**Response**  
**Response Status**: C  
ACCEPT.

---

Comment ID 4103

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

**A 65-bit block cannot have a sync header of 10 as there is only one sync bit in a 65-bit block.**

**Suggested Remedy**
"sync header 10 (binary)." to "sync header 0 (binary)."

**Response**  
**Response Status**: C  
ACCEPT.
Comment ID 4104

CI: 101  SC 101.3.2.5.6  P 150  L 35  # 4104

Remein, Duane  Huawei Technologies

Comment Type: T  Comment Status: A

"TRUE, but when is it set to false I wonder."  

SuggestedRemedy: add "This variable is reset to FALSE upon read." at end of description.

Response: ACCEPT.  
See Cmt # 4105

Comment ID 4105

CI: 101  SC 101.3.2.5.6  P 150  L 32  # 4105

Remein, Duane  Huawei Technologies

Comment Type: T  Comment Status: A

PMA_CLK is defined twice with two different meanings.

SuggestedRemedy: Change PMA_CLK to PMA_TCLK at pg 150 ln 32 and pg 157 ln 26 (2x),  
Change PMA_CLK to PMA_RCLK at pg 162 ln 16 and pg 163 ln 35 (2x)

Response: ACCEPT IN PRINCIPLE.  
Change definition at pg 150 ln 32 to read:  
"In the CLT this Boolean is to TRUE on every negative edge of a clock that is synchronized to  
the PMA_UNITDATA.request (see 101.4.1.2.1) data rate of DS_DataRate (see 100.2.6.1).  
In the CNU this Boolean is to TRUE on every negative edge of a clock that is synchronized to  
the PMA_UNITDATA.indication (see 101.4.1.3) data rate of US_DataRate (see 101.4.1.2.1).  
This variable is set to FALSE upon read."  

Change definition at 162 line 16 to read:  
"See 101.3.2.5.6."

Response: ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Comment ID: 4108

Comment Type: T
Comment Status: A

OFDM clock (1/204.8) is a bit too slow

Same/similar issue at:
Pg 99 in 37 (figure 100-6)
Pg 171 in 38 (Table 101-7, 2x)
Pg 159 in 23

Suggested Remedy:
Change to OFDM clock (1/204.8 MHz)

Response:
Response Status: C
ACCEPT.

Comment ID: 4109

Comment Type: T
Comment Status: A

Elsewhere in this section we refer to the output of the SR as Wk in Figure 101-26 it is W1. We should be consistent.

Suggested Remedy:
Change W1 to Wk in Fig 101-26 as in the text.

Response:
Response Status: C
ACCEPT.

Comment ID: 4110

Comment Type: T
Comment Status: A

There is no statemachine as implied in this statement:
"The state machine of Framing Timing implemented the RB Superframe structure timing as per 101.4.3.3.1."

Suggested Remedy:
Strike the sentence, the topic is well covered in subsequent SCIs.

Response:
Response Status: C
ACCEPT IN PRINCIPLE.
Change to:
"The framing timing state machine (see Figure 101-29) implements the RB Superframe structure per 101.4.3.3.6."

Check case "Frame Timing" s/b "frame timing" except first in sentence.

(check capitalization in 103.4 in subclause titles & text)

Comment ID: 4111

Comment Type: T
Comment Status: A

"through RBsize for each RB Frame" but RBsize is a boolean!

Suggested Remedy:
Change to read:
"through RBlen(RBsize) for each RB Frame"

Response:
Response Status: C
ACCEPT.

Comment ID: 4112

Comment Type: T
Comment Status: A

Previously we decided that only the US_ModTypeSC(n)/DS_ModTypeSC(n):
"based on the profile descriptor information"

Suggested Remedy:
strike "profile" to the statement reads:
"based on the descriptor information"

Response:
Response Status: C
ACCEPT.
This statement "Downstream channel acquisition time for the CNU is defined as the time required for a CNU with no previous network frequency plan knowledge to achieve downstream signal acquisition (frequency and time lock)," should be restricted to time when only a single CNU is joining the network.

Suggested Remedy
Change:
"Downstream channel acquisition time for the CNU is defined as the time required for a CNU with no previous network frequency plan knowledge to achieve downstream signal acquisition (frequency and time lock)."

Page 171, line 46, Add the following table footnote "b" to the "< 60 seconds" that reads "Nonetheless, it is expected that the CNU would be able to achieve downstream acquisition in less than 30 seconds."

Response
ACCEPT.

Why does this equation not include a factor for the windowing?

Suggested Remedy
Include a windowing factor (DSNrp)

Response
REJECT.

The windowing is eaten by the next CP.

This is an improper use of the term "encompassed spectrum" as encompassed spectrum is defined as:
"The encompassed spectrum is the difference between the center frequency of the highest frequency active subcarrier of the highest frequency OFDM channel and the lowest frequency active subcarrier of the lowest frequency OFDM channel, plus the subcarrier spacing (all expressed in MHz)."

Thus the two 1 MHz guard bands cannot be considered part of the encompassed spectrum.

Suggested Remedy
Change 24 MHz to 22 MHz so this statement agrees with Table 100-3

Response
ACCEPT.

This statement regarding exclusion band limits only applies to excluded SC within the encompassed spectrum.
"Exclusion bands are limited to 20% or less of encompassed spectrum (see Table 101-8)."

Suggested Remedy
Change to:
"Exclusion bands internal to the encompassed spectrum are limited to 20% or less of encompassed spectrum (see Table 101–8)."

Response
ACCEPT IN PRINCIPLE.

Delete the statement
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Response

#4117
Cl 45 SC 45.2.1.161.4 P 54 L 38 #4117
Remain, Duane Huawei Technologies

Comment Type T Comment Status A

Register bits 1.1948.4:0 can be better aligned with the definition of DS_ModAbility.

Suggested Remedy

In Table 45-98ae combine 1.1948.4 thru 1.1948.0 into a single entry
1.1948.4:0 | DS modulation ability | Indicates the PHYs ability to support optional downstream modulation types | RO

Combine SCI 45.2.1.161.4 thru 45.2.1.161.8 into a single sub clause to read:
45.2.1.161.4 DS modulation ability (1.1948.4:0)
Bits 1.1948.4:0 indicate the ability of the PHY to support optional downstream modulation formats 16384-QAM, 8192-QAM, 32-QAM, 16-QAM and 8-QAM. This bit is a reflection of the variable DS_ModAbility defined in 101.4.2.4.5.

Response Response Status C

ACCEPT.

#4118
Cl 45 SC 45.2.1.161.1 P 53 L 38 #4118
Remain, Duane Huawei Technologies

Comment Type T Comment Status A

Register bits 1.1948.9:8 can be better aligned with the definition of US_ModAbility.

Suggested Remedy

In Table 45-98ae combine 1.1948.9 and 1.1948.8 into a single entry
1.1948.9:8 | US modulation ability | Indicates the PHYs ability to support optional upstream modulation types | RO

Combine SCI 45.2.1.161.1 and 45.2.1.161.2 into a single sub clause to read:
45.2.1.161.1 US modulation ability (1.1948.9:8)
Bits 1.1948.9:8 indicate the ability of the PHY to support optional upstream modulation formats 4096-QAM and 2048-QAM. This bit is a reflection of the variable US_ModAbility defined in 101.4.3.4.4.

Response Response Status C

ACCEPT.

#4119
Cl 101 SC 101.4.2.6.4 P 179 L 32 #4119
Remain, Duane Huawei Technologies

Comment Type T Comment Status R

Clarify which value of NCP is being referred to:
"decrementing the value of NPC by one"

Suggested Remedy

Change to:
"decrementing the initial value of NPC by one"

Response Response Status C

REJECT.

 Perhaps this step will require reiteration. Therefore leave as is.
The following counter references should use named counters:
- line 36: "setting an bit counter to 1"
- line 41: "the FCP bit counter is incremented"
- line 46: "the bit counter is reset"

Note at pg 183 line 49 is a statement "The Symbol Mapper resets the bit counter, FCPbitCnt, at the start of each downstream frame ..." which could be interpreted as resetting to zero, this should be clarified.

Note also that if each of these refers to the same counter there is a conflict between pg 180 ln 36 and pg 184 ln 24.

**SuggestedRemedy**

Pg 180 Line 36 change:
- "setting an bit counter to 1" to 
- "setting FCP bit counter (FCPbitCnt) to 1"

Pg 180 Line 41 change:
- "the FCP bit counter is incremented" to 
- "the FCPbitCnt is incremented"

Pg 184 line 49 change:
- "resets the bit counter, FCPbitCnt, at the start ..." to 
- "resets the bit counter, FCPbitCnt, to zero at the start ..."

**Response**

ACCEPT IN PRINCIPLE.

Pg 180 Line 36 change:
- "setting an bit counter to 1" to 
- "setting FCP bit counter (FCPbitCnt) to 1"

Pg 180 Line 41 change:
- "the FCP bit counter is incremented" to 
- "the FCPbitCnt is incremented"

Pg 184 line 49 change:
- "resets the bit counter, FCPbitCnt, at the start ..." to 
- "resets the bit counter, FCPbitCnt, to zero at the start ..."

**Response**

ACCEPT.

I believe there are one too many g2's in Figure 101-23.

**SuggestedRemedy**

Change the rightmost to g1

**Response**

ACCEPT.

IF the LDPC endode process is occurring in the CNU the FP bits here may not be 14400-60 as stated:
- "a payload length of FP - BP bits (14400 - 60 = 14340 bits)."
- "output codeword with a length of (FP - BP) + FR bits; i.e., (14400 - 60) + 1800 = 16140 bits."

**SuggestedRemedy**

Remove all specific numbers to the two statements read:
- "a payload length of FP - BP bits."
- "output codeword with a length of (FP - BP) + FR bits."

**Response**

ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Comment Type TR Comment Status A

This seems like an odd place for a requirement on SC indexing. Also this requirement is not reflected in PICS.

Suggested Remedy
Strike the para in 101.4.2.11

Add to 1st para of 101.4.2.4
The CLT ensures that the downstream encompassed spectrum of a 192 MHz OFDM channel does not exceed 190 MHz (3800 active subcarriers, see Table 100-3. These 3800 maximum active subcarriers occupy the range 148 <= k <= 3947 per Table 101-8, where k is the spectral index of the subcarrier in Equation (101-23).

Add to 1st para of 101.4.3.4
The CLT ensures that the upstream encompassed spectrum of a 192 MHz OFDM channel does not exceed 190 MHz (3800 active subcarriers, see Table 100-11. These 3800 maximum active subcarriers occupy the range 148 <= k <= 3947 per Table 101-13, where k is the spectral index of the subcarrier in Equation (101-23).

Add to Tables 101-8 & 101-13 (not required in PICS)
Minimum active subcarrier index | 148 | |
Maximum active subcarrier index | 3947 | |

Response ACCEPT IN PRINCIPLE.
Add to PICS
"G7 | IDFT subcarrier index range | 101.4.2.11 | 148 <= k <= 3947 | Yes | No |
□ <= less than or equal to

Comment Type TR Comment Status A

The statement indicate that Table 101-12 is required but there is no normative statement:
"Table 101–12 enumerates multiple OFDM channel operational requirements"

Suggested Remedy
Change the statement to read:
"The 10G-PASS-PX PHY shall comply with the OFDM channel operational requirements in Table 101–12"

Add PICS statement after OT1 Downstream Synchronization:
OC2 | DS OFDM Channels | 101.4.2.13 | Conform to requirements of Table 101-12 | CLT-M | Yes[] No[]
Renumber PICS as needed.

Response ACCEPT.

Comment Type TR Comment Status A

Incomplete sentence:
"OFDMA clock timing error relative to the CLT master clock as measured at the CLT shall be within ± 10 ns in each burst measured within any 35 second measurement period."

Note that PICS statement OT9 correlates to this statement.

Suggested Remedy
I believe this should be a requirement. Change the statement to read:
"OFDMA ... measured at the CLT shall be within ..."

Response ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Comment Type: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
SORT ORDER: Comment ID

Comment ID 4127

Cl 101 SC 101.4.3.3.5 P 200 L 32
Remain, Duane
Huawei Technologies

Comment Type: TR  Comment Status: A

It does not appear that RB_Frame_start is used anywhere. It is defined here, set/reset in Figi 101-29 but not used in any decision.

Suggested Remedy
Remove the unused variable.

Response  Response Status: C
ACCEPT.
Impacts 101.4.3.3.5 & Fig 101-29 (3x)

Comment ID 4128

Cl 101 SC 101.4.3.5.2 P 206 L 15
Remain, Duane
Huawei Technologies

Comment Type: TR  Comment Status: A

Missing Fig ref "See Figure 101.x.x.x."
This process "FILL_PROCESS" does not appear to be used anywhere in the draft
The same appears to be true for "Stage_RB_Frame" at pg 207 ln 51

Suggested Remedy
Remove both definitions

Response  Response Status: C
ACCEPT.

Comment ID 4129

Cl 101 SC 101.4.3.5.2 P 206 L 20
Remain, Duane
Huawei Technologies

Comment Type: TR  Comment Status: A

Figure 101–31 appears to begin and end a burst with Map_Start_Marker and Map_End_Marker, resp. However these functions don't make any mention of the required Type 2 Pilot that is to be added before and after the burst markers (see 101.4.3.3.2 & 101.4.3.3.4 pg 1299)

Updated burst markers no longer require Type 2 pilots before/after surst.

Suggested Remedy
remove 101.4.3.3.2 and 101.4.3.3.4

Response  Response Status: C
ACCEPT.

Comment ID 4130

Cl 101 SC 101.4.2.6.4 P 178 L 19
Remain, Duane
Huawei Technologies

Comment Type: TR  Comment Status: A

This requirement is somewhat questionable. If we indeed require that the 8 steps starting at line 38 are required they will need additional clarification. For what example what is the definition of "Known regions of interference" in Step 1, "avoiding subcarrier locations impacted by interferences like CSO/CTB" in step 5 and "perturbation of continuous pilot locations using a suitable algorithm" in Step 7. This is really a limitation of the performance of the CLT and should be open to implementation differentiation.
Also the statement at line 22 is redundant with the previous para and we never clearly state the NPC is the number of continuous pilots.

Suggested Remedy
Change at line 19-22 from:
"The CLT shall place continuous pilots (excluding the eight continuous pilots around the PHY Link) per the 8 Steps below after calculating a value for NPC using Equation (101–8). The CLT obtains the value of NPC using the following formula:"
to:
"The CLT places continuous pilots (excluding the eight continuous pilots around the PHY Link) per the 8 Steps below after calculating an initial value for the number of Continuous pilots (NPC) using Equation (101–8)."

Change the statement at line 23 from:
"The number of continuous pilots is between 16 and 128. This range includes the eight continuous pilots around the PHY Link channel."
to:
"The number of continuous pilots shall be between 16 and 128. This range includes the eight continuous pilots around the PHY Link channel."

Update PICS entry PI3 from:
"Continuous Pilot placement | | Meets the Equation (101–8) and the eight steps given in 101.4.2.6.4"
to:
"Number of Continuous Pilots | | Between 16 and 128 including the 8 defined for the PHY Link"

Response  Response Status: C
ACCEPT IN PRINCIPLE.
Pg 178 line 44
Remove "Known regions of interference"

In DS_ModTypeSC(n) defined pg 174 line 38
Change:
"0 0 0 1 = BPSK (Used for continuous pilots only)" to
"0 0 0 1 = reserved (used by PHY for continuous pilots only, if set via MDIO to this value the PHY will treat as null)"

Add pg 178 line 19
"This calculation occurs as the first step of activating a DS profile (See 102.????)"

At the end of to:
"The CLT shall place continuous pilots (excluding the eight continuous pilots around the PHY Link) per the 8 Steps below after calculating a value for NPC using Equation (101–8).

Pg 174 line 39
Remove "but used for Wideband Probing"

Comment Type E Comment Status A

Mnemonic introduced without full meaning:
"The operation of EPoC MPCP, as ..."

SuggestedRemedy
Change to
In 29 "The operation of EPoC Multipoint Control Protocol (MPCP), as ..."

Response Response Status C
ACCEPT.

Comment Type E Comment Status A

"The 10GPASS-XR encodes"
Also pg 142 line 2 "PCS operating on CCDN"

SuggestedRemedy
change to
"The 10GPASS-XR PHY encodes" &
"The 10GPASS-XR PHY decodes" &
"PCS operating on a CCDN"

Response Response Status C
ACCEPT.

Comment Type E Comment Status A

Wording:
"... removes PHY_OSize vectors per every PHY_DSize vectors to the compensation of FEC overhead and PMD derating process."

Format changes per comment.

Response Response Status C
ACCEPT.

Comment Type E Comment Status A

Wording
"Every codeword in the burst has a length of determined by the number B of 65-bit blocks encoded:"

SuggestedRemedy

Format changes per comment.

Response Response Status C
ACCEPT IN PRINCIPLE.

See comment #3813
<table>
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<th>Proposed Remedy</th>
<th>Response</th>
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<td>&quot;less than or equal that shown in when&quot;</td>
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<tr>
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<td>116</td>
<td>E</td>
<td>A</td>
<td>P802.3xx, three times on this page. Several other instances of 802.3xx should be changed too.</td>
<td>ACCEPT.</td>
<td>EZ</td>
<td>Mellanox</td>
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<tr>
<td>4156</td>
<td>116</td>
<td>E</td>
<td>A</td>
<td>&quot;is comprised of&quot; is considered poor English and has been replaced with &quot;is composed of&quot; in the frontmatter. I would think the same point applies here. Also, does a topology contain or comprise these components, or is it an abstraction of their arrangement?</td>
<td>ACCEPT.</td>
<td>EZ</td>
<td>Mellanox</td>
<td></td>
<td></td>
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<tr>
<td>4157</td>
<td>116</td>
<td>E</td>
<td>A</td>
<td>201x 6 or more instances.</td>
<td>ACCEPT.</td>
<td>EZ</td>
<td>Mellanox</td>
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<tr>
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<td>116</td>
<td>E</td>
<td>A</td>
<td>Some headers say &quot;IEEE Std 802.3-2012&quot; while others say &quot;IEEE Std 802.3-201x&quot;</td>
<td>ACCEPT.</td>
<td>EZ</td>
<td>Mellanox</td>
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<td>116</td>
<td>E</td>
<td>A</td>
<td>its'</td>
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Comment ID: 4159 Page 116 of 123
TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID
This clause is unusually long (over 100 pages) and, very unusually, defines multiple brand-new sublayers in one clause. The subclauses may get nested too deep.

SuggestedRemedy
Consider if it should be broken into two clauses.

Response
REJECT.
Clause heading levels are aligned with the 802.3 template and only go to level 5 (as prescribed). The clause topics are consistent with previous clauses (e.g., Cl 65 & 76). Clause 55 has a comparable length (124 pg).
Adding another clause at this point would disrupt numerous other projects and is not recommended.

What to you mean by "subtend"? You haven't defined it, and here's what M-W online says:
1 a : to be opposite to and extend from one side to the other of <a hypotenuse subtends a right angle>
b : to fix the angular extent of with respect to a fixed point or object taken as the vertex <a central angle subtended by an arc> <the angle subtended at the eye by an object of given width and a fixed distance away>
c : to determine the measure of by marking off the endpoints of <a chord subtends an arc>
2 a : to underlie so as to include
b : to occupy an adjacent and usually lower position to and often so as to embrace or enclose <a bract that subtends a flower>

SuggestedRemedy
Use a more normal word. Link partner? connected? subordinate?
Also in two other places in the draft.

101.4.1.2 PMA Service Interface and 101.4.1.3 PMA_UNITDATA.indication should be at the same level in the hierarchy.

SuggestedRemedy
Fix.

101.4.1.2 PMA Service Interface up one level to 101.4.2.
Promote 101.4.1.2.1 PMA_UNITDATA.request and all it's subtended clauses one level
Subtend 101.4.1.3 PMA_UNITDATA.indication from new 101.4.2 making it 101.4.2.2

Renumber accordingly
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Draft 2.0**

<table>
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<td>4164</td>
<td>Dawe, Piers, Mellanox</td>
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**Comment Type:** ER  **Comment Status:** A

"The effect of receipt of this primitive by the client is unspecified by the PMA sublayer": standards that don't specify the client do this, 802.3 doesn't have to annoy the reader in this way.

**Suggested Remedy:**
You know what the client is, 101.4.1.2 says it's the PCS. Replace the offending sentence with a reference to the appropriate place in the PCS subclause.

**Response**
ACCEPT IN PRINCIPLE.

Change to:
"The effect of receipt of this primitive by the client is specified in 101.3.3."

<table>
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<th>CI</th>
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<th>L</th>
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<td>111</td>
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<td>Dawe, Piers, Mellanox</td>
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**Comment Type:** TR  **Comment Status:** A

If the FLR for 1500-byte frames is 1e-6, it could be higher or lower for larger or smaller frames depending on the relative size of the frame and the FEC block. On the one hand: Ethernet's maximum frame size was changed from 1500 bytes to 2000 bytes some years ago. On the other: a single lost FEC frame could take out several frames (more of an issue in the downstream direction, I think), so the number of lost frames per hour may be quite poor. This is why other projects specify minimum-length frames for the FLR calculation.

**Suggested Remedy:**
Ensure that satisfactory performance is obtained with short frames and long frames, not just 1500-byte frames.

**Response**
ACCEPT IN PRINCIPLE.

There is adequate margin in Table 100-13 and Table 100-15 to guarantee performance for all Ethernet frame sizes from 64 to 2000 bytes.

Minimum length frames were considered in the studies as summarized in:
http://www.ieee802.org/3/bn/public/jul13/prodan_3bn_01b_0713.pdf presented in July 2013. The section on AWGN performance is relative to the two tables. MTTPA with minimum size packets is detailed in http://www.ieee802.org/3/bn/public/sep13/prodan_3bn_02a_0913.pdf. The September 2013 presentation calculates 26 minimum size 64 byte Ethernet frames per long size codeword. The frame loss ratio is therefore 26 times the FEC word error ratio (WER). The minimum CNR for all constellation orders in the above tables have from 3 to 6 dB of margin from the required 10-6 WER. As seen in the July 2013 presentation, this much margin provides many orders of magnitude lower WER well beyond 26 times 10-6.

A similar situation applies to a maximum 2000 byte Ethernet frame spanning multiple short size codewords. A 2000 byte frame plus 8 byte header occupies 251 65-bit line encoded blocks (with 64 bits of payload per block). The short codewords contain 800 payload bits plus 40 CRC bits that can carry 12 65-bit line encoded blocks each. So 21 short codewords can contain the 221 line encoded blocks of the 2000 byte frame. In this case, the 3 to 6 dB margin again provides many orders of magnitude lower WER well beyond 21 times 10-6.

The cable industry to date has typically worked with 1500 byte packets in its performance specifications and we used what they expect. For 2000 byte versus 1500 byte packets, there will be no issues as just explained. Text in the two areas will be modified as follows:

Page 111, Line 17, Change "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" 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 both 64-byte and 2000-byte Ethernet frames."

Page 113, Line 42, Change "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-"
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 both 64-byte and 2000-byte Ethernet frames.

This extends the operation of Ethernet Passive Optical Networks (EPON) protocols, such as MultiPoint Control Protocol (MPCP),...

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.

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

Response
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

Comment Type TR
Comment Status A

Dawe, Piers
Mellanox

Is this the same as the Cl.76 10GEPON RS? It should be.

Suggested Remedy
Don't create yet another RS type, re-use the 10GEPON RS.

Response
Accept in principle.

Add:
"This subclause defines the Physical Media Attachment (PMA) for 10GPASS-XR, supporting operation over the point-to-multipoint coaxial medium architecture. The 10GPASS-XR PMA is specified to support the operation of up to 10 Gb/s in the downstream direction and up to 1.6 Gb/s in the upstream direction, where the upstream and downstream data rates are configured independently.

Figure 101–1 shows the relationship between the 10GPASS-XR PMA sublayer and the ISO/IEC OSI reference model. Figure 100–2 illustrates the CLT transmitter functional block diagram, including the PMA, while Figure 100–3 illustrates the CNU transmitter functional block diagram. Figure 100–4 and Figure 100–5 illustrate the functional block diagram of the receive path in the CLT and CNU, respectively in the 10GPASS-XR PMA."
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

“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 contain the FEC: what does the PMD have to do to satisfy this condition?

Suggested Remedy

Define PMD spec.

Response

Response Status: W

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.”

Comment Type: E
Comment Status: A

Now that the IEEE P802.3bn balloting group has been established, please complete the list of officers and members of the IEEE 802.3 working group.

Suggested Remedy

Please include the list of officers and members of the IEEE 802.3 working group.

Response

Response Status: C

ACCEPT.

Editor changed Clause from "FM" to 99

Comment Type: T
Comment Status: A

Not sure why a dash has been added between ‘10GBASE’ and ‘RS’, this text relates to 10 Gb/s Reconciliation Sublayer and not a PHY. In addition this is not marked as a change, yet this is a change from the published standard, IEEE Std 802.3-2012, and current revision draft IEEE P802.3 (IEEE 802.3bx) draft D3.2.

More importantly however, the addition of the 10GPASS-XR PHY by IEEE P802.3bn means that not all 10 Gb/s PHYs will be ‘10GBASE’ PHYs.

Suggested Remedy

Due to the addition of the 10GPASS-XR PHY by IEEE P802.3bn, and since this is the only instance I can find of the use of the term ‘10GBASE RS’, suggest the text ‘10GBASE-RS’ be changed to read ‘10 Gb/s Reconciliation Sublayer’.

Response

Response Status: C

ACCEPT.
IEEE P802.3 (IEEE 802.3bx) draft D3.2 subclause 1.4 defines 'Point-to-Multipoint network (P2MP)' in subclause 1.4.331 as 'A passive optical network providing transport of Ethernet frames' so by this definition EPoC can't be a 'Point-to-Multipoint network' as it is not optical. IEEE P802.3bn draft D2.0 adds a definition for coax cable distribution network (CCDN) which is used here, however while IEEE P802.3 (IEEE 802.3bx) draft D3.2 subclause 1.5 'Abbreviations' defines 'ODN' as 'optical distribution network' there is no definition of the term in subclause 1.4. ODN is used in the existing EPON clauses, and additional uses are added in IEEE P802.3bn (e.g. subclause 56.1.2.1, page 67, line 50).

Suggest that 'Point-to-Multipoint network (P2MP)’ should just be used in reference to a topology, and since 'point to point' has no definition, only an abbreviation (see IEEE P802.3 (IEEE 802.3bx) subclause 1.5), the same should be true for 'point to point'. There should then be two complementary definitions for the two IEEE 802.3 P2MP media, one for an 'optical distribution network (ODN)' and one for a 'coax cable distribution network (CCDN)'. An EPON is then implemented over a P2MP optical distribution network (ODN), an EPoC network over a P2MP coax cable distribution network (CCDN).

Finally the definition in subclause 1.4.144a for 'coax cable distribution network' seems a bit circular as it starts with 'coaxial distribution network' and then seems to imply a point to point connection by only mentioning 'the MDI at the CNU and the MDI at the CLT'.

Suggested Remedy

Suggest that:

1. The definition in subclause 1.4.144a 'coax cable distribution network' be updated to read 'coax cable distribution network (CCDN): A Radio Frequency (RF) distribution plant comprising of either amplified or passive coaxial media.';
2. A new definition be added in subclause 1.4 that reads 'optical distribution network (ODN): A optical distribution plant comprising of fibre optical cabling and a passive optical splitter or cascade of splitters.';
3. Existing subclause 1.4.331 be deleted by IEEE P802.3bn.
4. In subclause 56.1 (page 67, line 12) change ‘... in which a point-to-multipoint (P2MP) network topology is implemented with passive optical splitters, along with ...’ to read ‘... in which a point-to-multipoint (P2MP) is implemented over an optical distribution network (ODN), along with ...’ and that (page 67, line 16) ‘... in which a P2MP network topology is implemented ...’ be changed to read ‘... in which a P2MP network is implemented ...'.

Response

ACCEPT.

Reserved registers overlap registers defined in row above.
Table 45-3

Suggested Remedy

Change 1.1952 to 1.1958.

Response

ACCEPT.

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 multiple port types it will define.

Suggested Remedy

I see three options:

1. Change the draft to accommodate 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 simply change one line in the cell.

Response

ACCEPT IN PRINCIPLE.

Set SCI to 45.2.1.6, Moved "Table 45-7" from SCI to Comment
The current D2.0 draft does not include methodology to adequately support time sync functions to levels required for current Mobile BackHaul applications. The current time transport method used for EPON is included in 802.1as Clause 13 using the MPCP RTT (round trip) ranging delay, which does not require DS/US PHY time delay symmetry. PHY time delays for EPoC are expected to be much higher than for EPON (and thus even higher CLT & CNU PHY TX/RX time delay asymmetry). Thus, the downstream delay from the CLT TX MAC MPCP counter to the CNU RX MAC MPCP counter will not be exactly 1/2 of the MAC-level MPCP RTT ranging delay, which will result in an inaccurate transmission of a future time at a future MPCP frame to CNUs with time sync functionality.

Although 802.3-2012 Clause 90 includes optional registers for silicon manufacturers to specify PHY min and max TX and RX time delays, it will likely result in large min/max ranges that result in highly inaccurate time transfer from the CLT to the CNU using the methodology specified in 802.1as Clause 13.

Suggested Remedy

It is proposed to

1. Remove the Editor's Note right under the 101.5 clause title - "TimeSync capability"

2. Add the following additional PHY delay asymmetry registers to Clause 101.5.1:

   - DiffDelay_CLT - Nominal difference in time delay between the XGMII interface to the MDI interface path, and the MDI interface to the XGMII interface path for the CLT PHY in units of 1/204.8 MHz. Note that this is a signed variable (+/-).
   - DiffDelay_Tol_CLT - The tolerance (max error) of the DiffDelay_CLT variable in units of 1/204.8 MHz
   - DiffDelay_CNU - Nominal difference in time delay between the XGMII interface to the MDI interface path, and the MDI interface to the XGMII interface path for the CNU PHY in units of 1/204.8 MHz. Note that this is a signed variable (+/-).
   - DiffDelay_Tol_CNU - The tolerance (max error) of the DiffDelay_CNU variable in units of 1/204.8 MHz

3. Authorize the editor to make any necessary additions to Clause 45 documenting access to the above new registers

4. Create a new sub-clause 101.5.2 with:

   - Title - EPoC Extensions to IEEE 802.1as, Clause 13 methodology for EPoC time transport
   - Content - included in: powell_3bn_01_0915.docx

Accept in principle. See remein_3bn_24_0915.

Editor given license to include an ability register for Timestamp support.