IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

Comment Type: TR  Comment Status: A  Review

"is passed to the scrambler." - likely, "the Scrambler".
Also, where is the said Scrambler described? There is reference to it 101.3.2.5.6 as well as in 101.3.2.5.3, but there is no definition of what type of Scrambler is used.

SuggestedRemedy
Insert subclause in 101.3.2 covering the operation of Scrambler for the transmit path. There is a descrambler in the receive path (101.3.3.2 Descrambler - kind of empty), but there is no sign of Scrambler right now.

Response  Response Status: C
ACCEPT IN PRINCIPLE.
Move the scrambler to the PMA.

"The output codeword is passed to the scrambler" to
"The output codeword is passed to the PMA"
Comment Type: T  Comment Status: A

Quite convoluted statement "B can be from 1 to BQ blocks maximum, where BQ is 220, 76, and 12 and FR is 1800, 900, and 280 for 16200, 5940, 1120 LDPC codewords sizes respectively (see Table 101-4)."

Suggested Remedy
Suggest to simplify to read:
where:
a) B ranges from 1 to BQ blocks,
b) BQ is equal to 220 for LDPC (x, y), 76 for LDPC (x, y), and 12 for LDPC (x, y), and
b) FR is equal to 1800 for LDPC (x, y), 900 for LDPC (x, y), and 280 for LDPC (x, y)
Replace (x, y) with proper code designations. Reference to Table 101-4 is then not needed.

Response  Response Status: C
ACCEPT IN PRINCIPLE.
Given the evils of specifying something in two different places change (using appropriate symbols) to read:
where:
1 <= B <= BQ
BQ and FR are set per Table 101-5 based on FC.

Comment Type: E  Comment Status: A

Lists need to be numbered / lettered only when we plan to reference individual items within the said lists. Here, it is not the case.

Suggested Remedy
Convert lists in lines 20-33 and 43-51 to bulleted lists instead.

Response  Response Status: C
ACCEPT IN PRINCIPLE.
The list in question needs to be in this order and therefore a numbered list is preferred. Lines 43-51 will be converted to bullets.

Comment Type: T  Comment Status: A

"VALUE: see Table 101–5" - said Table contains multiple values. How do I select the right value?

Suggested Remedy
Add a selector (FEC code type) to allow to pick the right value from Table 101-5. Otherwise, one has to assume which code is used in state diagram

Response  Response Status: C
ACCEPT IN PRINCIPLE.
In section 101.3.2.5.10
Insert "DS " in front of FEC at line 26 & 31.

Note that text for US has yet to be submitted.

Comment Type: T  Comment Status: A

"The CNU PCS shall implement the FEC encode and Data Detector process, comprising the input process as shown in Figure 101–8 and the output process as shown in Figure 101–9. EDITORS NOTE (to be removed prior to publication): a transfer to PMA process is needed for the CNU" - this is incorrect. CNU cannot use Figure 101-9, which assumes no Data Detector and PHY enable/disable signal.

Suggested Remedy
The editorial note should be expanded to indicate that also "FEC encode and Data Detector output process" for CNU is missing right now, not just "transfer to PMA process"

Response  Response Status: C
ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

**Comment ID 2730**

**Cl 45 SC 45.2.1.110**

Comment Type: E  Comment Status: A

The draft still has plenty of empty lines

**SuggestedRemedy**

Exercise the draft and remove unnecessary empty lines

**Response**

Response Status: C

ACCEPT.

**Comment ID 2731**

**Cl 45 SC 45.2.1.112**

Comment Type: T  Comment Status: A

"The assignment of bits in the US OFDMA pilot pattern registers are shown in Table 45-78x. " - it is actually shown in "Table 45–78f"

**SuggestedRemedy**

Per comment

**Response**

Response Status: C

ACCEPT.

**Comment ID 2732**

**Cl 45 SC 45.2.1.120**

Comment Type: E  Comment Status: A

missing "." at the end of "The assignment of bits in the PHY timing offset bit registers is shown in Table 45–79n"

**SuggestedRemedy**

Per comment. Same in 45.2.1.121

**Response**

Response Status: C

ACCEPT.

**Comment ID 2733**

**Cl 45 SC 45.2.1.123**

Comment Type: TR  Comment Status: A

"that conforms to the UQ34.3 format" - normative reference for the said format is missing.

**SuggestedRemedy**

My searches come up empty - please add normative reference for the said format.

**Response**

Response Status: C

ACCEPT IN PRINCIPLE.

See response to 3137

**Comment ID 2734**

**Cl 45 SC 45.2.7a.2**

Comment Type: E  Comment Status: A

Table 45–191c needs to have the first column extended to avoid breaking register numbers across lines

**SuggestedRemedy**

Per comment

**Response**

Response Status: C

ACCEPT.

**Comment ID 2735**

**Cl 100 SC 100**

Comment Type: ER  Comment Status: A

There are many cross-references in Clause 100 are either dead (hyperlink is there, but it is empty) or there are no hyperlinks at all. These are cross-references internal to Clause 100 and external (leading to other Clauses in this draft).

**SuggestedRemedy**

Please fix all cross-references in Clause 100 to make them clickable and work between Clauses.

**Response**

Response Status: C

ACCEPT.

This does need to be done before WG ballot. We'll have to catch up with this as we can. This should actually be a "00".
Comment Type: T  Comment Status: A  Review
"PMD service interface and the MDI All" - seems that the end of the sentence got truncated
Suggested Remedy
Please either add what was supposed to be at the end or remove "All"
Response  Response Status: C
ACCEPT IN PRINCIPLE.
Suggest removing "All"

Comment Type: E  Comment Status: A  Review
as defined by TBD (see [ref]).
Need to mark ref in color for better visibility. Also, remove double "."
Suggested Remedy
Per comment
Response  Response Status: C
ACCEPT IN PRINCIPLE.
This is remedied in another comment that was submitted late that replaces this text. If accepted, this change does not need to take place.
See comment 3185

Comment Type: T  Comment Status: A  Review
PMD_UNITDATA.request and PMD_UNITDATA.indication are complementary messages and there should be little doubt as to what kind of data .indication provides to PHY - 1 bit at a time.
Suggested Remedy
Change TBD in this section to "1 bit"
Response  Response Status: C
ACCEPT IN PRINCIPLE.
This is remedied in another comment that was submitted late that replaces this text. If accepted, this change does not need to take place.
See comment # 3185

Comment Type: E  Comment Status: A  Review
"Modulation format for PHY Link is specified in 102.2.1.2 and 102.3.1.2" should be "Modulation format for PHY Link is specified in => <102.2.1.2 and 102.3.1.2" - there is a missing space.
Suggested Remedy
Per comment
Response  Response Status: C
ACCEPT.

Comment Type: T  Comment Status: A  Review
"variable DS_DataRate (see 45.x.x.x.)"
a) it is not a variable, it is a register if it is in Clause 45
b) insert the reference correctly
c) since when we started using italics for names of variables?
Similar issue in 100.2.6.2 for US_DataRate
Suggested Remedy
Please address three issues per comment
Response  Response Status: C
ACCEPT IN PRINCIPLE.
See other comment responses for variables in italics. Will adjust as decided in comment resolution. This is really an E comment as it is remedying referential notation.
Comment

There are several numbered equations, but they are not referenced anywhere in the text. It seems that they could be easily replaced with a pseudo-code without any reference, and it would avoid the complexity of showing multiple equations.

Suggested Remedy

Replace equations with pseudo-code in a single block. Define all variables if they are needed for calculation purposes. The same applies to 100.2.6.2

Response

ACCEPT IN PRINCIPLE.

On line 14 change equation to properly indicate summation across all "a, b & c". And modify text on line 17-19 if needed.

Comment

"defined in Table 100-XXX" - should it be 100-4 here as well?

Suggested Remedy

Either change that to 100-4 if that is the correct table, or mark as TBD.

Response

ACCEPT IN PRINCIPLE.

The upstream electrical was added for D1.2 and this reference was not updated. Should be "Table 100-10".

Comment

"Equipment conforming to this standard shall clearly mark downstream frequency ranges." - probably, "Equipment conforming to this standard shall clearly mark supported downstream frequency ranges."

Suggested Remedy

Per comment. Same in 100.2.7.2

Response

ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

Cl 100 SC 100.2.8.2 P 81 L 24 # 2746
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status A Review
"CLT power is configured by power per 6 MHz channel and number of occupied 6 MHz channels for each OFDM channel" - this statement reads funny when you read it without knowing what the author really meant.

SuggestedRemedy
Suggest to reword as follows: "CLT transmit power level is configured independently for each 6 MHz channel in the function of the number of 6 MHz channels occupied in each OFDM channel". There are two important changes here:

a) power level is configured >>independently<< for each 6MHz channel,

b) power output configuration is in the function of number of 6MHz channels per OFDM channel

Response Response Status C
ACCEPT IN PRINCIPLE.

Change:
"For the purposes of meeting spurious emissions requirements, the CLT transmit power for each OFDM channel shall be configured as follows"

Replace the first two bullets (ln 24-28) with:
"Configure the OFDM channel power."

Cl 100 SC 100.2.8.2 P 81 L 26 # 2747
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status A Review
"For each OFDM channel, the total power is Power per 6 MHz channel + 10log10(Number of occupied 6 MHz channels) for that OFDM channel." - this seems like a perfect place where equation should be created, and placed within the text and then referenced.

SuggestedRemedy
Insert equation that describes total power (100-X) and then reword the text to read: "For each OFDM channel, the total power is given by Equation (100-X)."

Response Response Status C
ACCEPT IN PRINCIPLE.

See resolution to comment 2746

Cl 100 SC 100.2.8.2 P 81 L 35 # 2749
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status A
“For each OFDM channel, the total power is Power per 6 MHz channel + 10log10(Number of occupied 6 MHz channels) for that OFDM channel.” - this seems like a perfect place where equation should be created, and placed within the text and then referenced.

SuggestedRemedy
Insert equation that describes total power (100-X) and then reword the text to read: "For each OFDM channel, the total power is given by Equation (100-X)."

Response Response Status C
ACCEPT.

Approved Responses
Comment Type: E
Comment Status: A
Review
Formatting of notes to table is not correct - please see 802.3-2012, Table 75-5 for an example of formatting notes to items in the table.

Suggested Remedy
Per comment. This applies to all tables in Clause 100.

Response
Response Status: C

Accept In Principle. Change as follows:
Normative footnotes (alpha ref per style manual):
1, 2, 4, 5, 7(merged), 8, 10

Merge notes 7 & 11 to:
"When the estimated channel impulse response used by the test receiver is limited to half of length of smallest transmit cyclic prefix then there is a 2 dB relief for above requirements (e.g., MER > 48 dB becomes MER > 46 dB)"

Remove Note 3, 6, 9

---

Comment Type: T
Comment Status: A
Review
MER is not defined in the whole draft, but used heavily (38 hits in the whole draft)

Suggested Remedy
Add definition of what it is and consider adding definition to Clause 1 if it is handy in a more global fashion.

Response
Response Status: C

Accept In Principle. In first appearance replace "MER with Modulation Error Ratio (MER)"

Copy definition of Modulation Error Ratio from DOCSIS PHY v3.1 I04

---

Comment Type: TR
Comment Status: A
Review
A lot of descriptive text from Table 100-2 should be really part of test setup description. Examples include: "528 MHz total occupied bandwidth, 6 MHz gap (Internal Excluded subcarriers) 88 equivalent 6 MHz channels", "528 MHz total occupied bandwidth, 88 equivalent 6 MHz channels", "single OFDM channel only, 24 MHz total occupied bandwidth" - these are specific for the measurement conditions for the given parameter and not for the parameter itself.

Suggested Remedy
Move these details into the measurement section for the given parameter and not cram them into table that is supposed to be listing just the values. This goes in line with the Editors' Note on page 83, line 27.

Similar note on Table 100-3, 100-4

Response
Response Status: C

Accept In Principle. The "1.5 dB" is removed in comment 3183

In line 11 change
"528 MHz total occupied bandwidth, 6 MHz gap (Internal Excluded subcarriers) 88 equivalent 6 MHz channels"
to
"192 MHz total occupied bandwidth, 6 MHz gap (Internal Excluded subcarriers)"

In line 19 delete "528 MHz total occupied bandwidth, 88 equivalent 6 MHz channels" (keep footnotes)
Multiple issues with Table 100-4:

a) Most of the parameters are really whole definitions crammed into the table - details of the definitions should be inserted into the section on their measurement conditions and not table indexed to list just their numeric values.

b) Notes to parameters in tables have wrong format - see 802.3-2012, Table 75-5 for formatting reference.

c) Note 1 should be described as an informative text in the section describing the measurement itself - also, 0.5 dBc seems to be the tolerance here and it should not be hidden in a note to a table.

d) Relaxation parameters are not typically listed as informative notes to parameters - these need to be part of mandatory parameters, likely part of the measurement conditions for individual parameters.

e) Neq’ is not defined anywhere. Neq is.

**Suggested Remedy**

Address individual comments.

**Response**

ACCEPT IN PRINCIPLE.

a) Reject: New table and sections not provided. As per Style guide Section 14: "Tables provide a clear and concise way of presenting large amounts of data in a small space." This goes beyond numeric values.

b) Alpha: Follow 2012 Style guide (alpha = normative, numeric = informative)

For Table 100–4 all notes are normative.

c) Reject - the TF believe this is normative.

D) Reject - table footnotes are normative

e) Reject - Neq’ is defined on page 85, line 49. Agree that this is not clearly defined and needs to be part of cleanup as per Editor's note page 80, line 29.

"When commanded to the same power level, dBc should be interpreted as the average OFDM channel power, averaged over the active OFDM channels, to mitigate the variation in OFDM channel power across the active OFDM channels (see Table 100-4), which is allowed with all OFDM channels commanded to the same power." - is this intended to be an optional requirement?

**Suggested Remedy**

Change to read: "When commanded to the same power level, dBc denotes the average OFDM channel power, averaged over the active OFDM channels, to mitigate the variation in OFDM channel power across the active OFDM channels (see Table 100-4), which is allowed with all OFDM channels commanded to the same power.". The sentence is still complex to interpret, given the number of subordinate sentences. Is there any way to simplify it, separating into two sentences?

**Response**

ACCEPT IN PRINCIPLE.

Change to read: "When the active OFDM channels are commanded to the same power level, the average active OFDM channel power becomes the 0 dBc reference."

"In measurements with 603 MHz <= center frequency <= 999 MHz" - typically, I would expect to see a statement like this: "in measurements for center frequency from 603 MHz to 999 MHz, inclusive."

**Suggested Remedy**

Consider the proposed change. Similar change in line 40, same page.

**Response**

ACCEPT.
**Comment ID 2757**

**Cl 100 SC 100.2.8.5 | P 85 | L 50 | # 2757**

Hajduczenia, Marek  
Bright House Network

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

*The full set of Neq' OFDM channels is referred to throughout this specification as the modulated OFDM channels or the active OFDM channels.* - is this the first time where we use this definition? I see the first use of term "active OFDM channel" at the top of 100.2.8.5

**Suggested Remedy**

Consider moving the said definition of "active OFDM channel" to the beginning of 100.2.8.5. Also, remove "modulated OFDM channel" - it is not used in the draft right now at all. No need to add new terms that are not used in the draft.

**Response**

**Response Status C**

ACCEPT IN PRINCIPLE.

Agree, this would be per the general cleanup needed for 100.2.8 as per leading editor’s note.

---

**Comment ID 2758**

**Cl 100 SC 100.2.8.5 | P 85 | L 51 | # 2758**

Hajduczenia, Marek  
Bright House Network

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

Term "sub-block" is introduced in 100.2.8.5 and used exclusively in this subclause and without definition.

**Suggested Remedy**

This term is introduced in this subclause without definition. Could we use a simpler term "sub-set" that does not require definition?

**Response**

**Response Status C**

ACCEPT IN PRINCIPLE.

Replace sub-block with block.

---

**Comment ID 2759**

**Cl 100 SC 100.2.9.1 | P 88 | L 23 | # 2759**

Hajduczenia, Marek  
Bright House Network

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

*The parameter NFFT refers to the length* - this parameter is shown as N>>FFT<< (subscript) in Figure 100-6. Are these the same?

**Suggested Remedy**

Please align the name of the parameter between the text and the figure. The same applies to "NCP"

**Response**

**Response Status C**

ACCEPT IN PRINCIPLE.

Subscribe the "FFT" in NFFT and subscript "CP" in NCP. Refer to resolution in comment 2773.

---

**Comment ID 2760**

**Cl 101 SC 101.3.2 | P 115 | L 16 | # 2760**

Hajduczenia, Marek  
Bright House Network

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

"the PCS transmit function operates in a burst fashion" - likely, "bursty fashion" or "supports burst mode operation", as stated in 10G-EPON PCS.

**Suggested Remedy**

Pick either of the options and implement per comment.

**Response**

**Response Status C**

ACCEPT IN PRINCIPLE.

Change to "the PCS transmit function operates in burst mode" (as in Cl 76.3.2)

---

**Comment ID 2761**

**Cl 101 SC 101.3.2.4 | P 121 | L 52 | # 2761**

Hajduczenia, Marek  
Bright House Network

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

Please add Annex 101A and model content after Annex 76A in 802.3-2012, leaving all data as TBD.

**Suggested Remedy**

Per comment.

**Response**

**Response Status C**

ACCEPT IN PRINCIPLE.

Delete line 52-54. If a contribution for text and figures for an Annex showing an LDPC example is submitted it will be considered.

---

**Comment ID 2762**

**Cl 101 SC 101.3.2.4 | P 122 | L 1 | # 2762**

Hajduczenia, Marek  
Bright House Network

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

Extend the side of column 1 to avoid breaking data across lines. There is enough space to do so.

**Suggested Remedy**

Per comment.

**Response**

**Response Status C**

ACCEPT.
**IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments**

### Approved Responses

<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
<th>P</th>
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<th>Comment Status</th>
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<td>1.5</td>
<td>24</td>
<td>51</td>
<td>2763</td>
<td>E</td>
<td>A</td>
<td>Comment</td>
<td>Is there any specific reason why all abbreviations start with a capital letter? Compare with 802.3-2012</td>
<td>I believe only expansion of EPoC should start with capital &quot;EPON&quot; - the rest should start with lower caps.</td>
<td>ACCEPT.</td>
<td>C</td>
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</table>
| 01 | 1.4.160a | 24 | 29 | 2764 | ER | A | Comment | This is confusing: editorial instruction says "Insert the following definition after 1.4.161."
but the actual assigned number says "1.4.160a". Either fix the number or fix the editorial instruction. | Per comment. Also, insert the editorial note to update the list of definitions once 802.3-2015 moves to Sponsor Ballot - draft D2.0 is now in WG ballot and 802.3bn will be published as amendment to 802.3-2015 and not 802.3-2012 :) | ACCEPT IN PRINCIPLE. | C | 2764 |
| 45 | 45.2.1 | 30 | 3 | 2765 | E | A | Comment | I believe 802.3bj was published in June 2014 | Change publication date for 802.3bj globally, and make sure it is now part of the frontmatter with the proper scope statement. | ACCEPT IN PRINCIPLE. On pg 27 line 4 add Editors note reading: "EDITORS NOTE (to be removed prior to publication): Paragraph and register numbering will need to be reviewed and updated after release of 802.3 2015."
Change editing instruction pg 30 ln 3 to read:
"Change the two identified reserved rows in Table 45-3 and insert new rows as follows."
Add:
"EDITORS NOTE (to be removed prior to publication): align Table 45-3 with 802.3 2015 after ballotted." | Change editing instruction pg 30 ln 3 to read:
"Change the identified reserved row in Table 45-6 and insert a new row as follows."
Add:
"EDITORS NOTE (to be removed prior to publication): align Table 45-6 with 802.3 2015 after ballotted." | ACCEPT IN PRINCIPLE. | C | 2765 |
| | | | | | | | | | | | 2765 |

*Comment ID: 2765*
<table>
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<td>45.2.1.109</td>
<td>38</td>
<td>20</td>
<td>Title of 45.2.1.109.1 reads: &quot;DS OFDM freq ch1&quot; but the register name is &quot;DS OFDM freq ch 1&quot; in Table 45–78c - note the extra space between &quot;ch&quot; and &quot;digit&quot;</td>
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<td>Align the subclause heading names with the names of registers</td>
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<td>The text of the NOTE does not have a proper style. See 802.3-2012, section 1, page 56, for proper style.</td>
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<td>&quot;Table 101–6 presents a 5 × 45 base matrix of the low-density parity-check matrix H for LDPC (16200, 14400) code listed in Table 101–5 for downstream and upstream. The lifting factor of the matrix is L=360.&quot; - if possible, break the line manually before the name of the FEC code - avoid code name breaking across lines for improved readability.</td>
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<td>&quot;This resulting FP bits of data is then passed&quot; ... given that we speak of plural bits, the statement should read &quot;This resulting FP bits of data &gt;&gt;are&lt;&lt; then passed&quot;</td>
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<td>Per comment. The same issue on page 128, line 1.</td>
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<td>00</td>
<td>101.3.2.5.2</td>
<td>125</td>
<td>28</td>
<td>&quot;see section101.3.2.5.2&quot; - we do not use word &quot;section&quot; anywhere</td>
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<td>strike the word &quot;section&quot;. Scrub the whole draft for instances of section and subsection - there are at least 25 hits to be replaced.</td>
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**Note:** The comments and responses are from the IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments.
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<td>Cl 100 SC 100.2.9.5.1 Comment</td>
<td>C</td>
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</table>

**Comment 2772**

**Comment Type:** TR

- **SC 101.3.2.5.5:** Subclause 101.3.2.5.5 contains plenty of details on the CNU burst structure, yet it is not clear how the sizes of individual burst markers play with FIFO. Recall that FIFO operates on whole 66-bit codewords, but the size of burst markers is not a multiple of 66-bit symbols, requiring proper calculations in Data Detection in CNU to make sure that there is enough space to insert burst markers. The text does not account for that right now.

**Suggested Remedy:**
- Text needs to be updated to account for disparity between burst market size and the codeword size within Data Detector. State diagram is needed urgently to describe the said process in more detail and show calculations.

**Response:**
- ACCEPT IN PRINCIPLE.
- Add
- EDITORS NOTE (to be removed prior to publication): Text needs to be updated to match accumulated changes.

**Comment 2773**

**Comment Type:** T

- **SC 100.2.9.1:** "pointed to by the dashed arrow of Figure 100-6" - there are three dashed arrows in Figure 100-6 - which one do you mean? Any of these? Any specific one?

**Suggested Remedy:**
- Either show just one dashed arrow in Figure 100-6 or reference which of the dashed arrows you mean. The same in line 27 on the same page.

**Response:**
- ACCEPT IN PRINCIPLE.
- As shown in laubach_3bn_12_0115.pdf
- Refer to resolution in comment 3145.

**Comment 2774**

**Comment Type:** T

- **SC 100.2.9.4:** "The CLT SHOULD ensure the following" - is this intended to be an optional requirement?

**Suggested Remedy:**
- Change this statement to read: "The CLT observes the following limits" if the OLT really has a way to enforce these limits on the CNU. It seems more like something CNU would have to comply with.

**Response:**
- ACCEPT IN PRINCIPLE:
- Change
- The CLT SHOULD ensure the following to:
- The CLT ensures the following

**Comment 2775**

**Comment Type:** T

- **SC 100.2.9.5.1:** "SpurFloor is related to the ratio of the number of subcarriers" - it is not clear what SpurFloor is until a few lines below.

**Suggested Remedy:**
- Change to "The parameter SpurFloor is related to the ratio of the number of subcarriers" similar comment for line 29, and line 33, same page.

**Response:**
- ACCEPT.
Comment Type: E  Comment Status: A

**Comment:**
DOCSIS 3.1 references? "Section 7.4.13.5"

**Suggested Remedy:**
Mark these as TBD and insert Editor's Note with the source reference from DOCSIS.

**Response:**
ACCEPT IN PRINCIPLE.
This editor forgot to clean these up in the text before consideration by the TF for D1.2.
Suggested remedies:
Line 46: remove "as described in Section 7.4.13.5,"
Line 52: change "Section 7.4.13.3" to "see 100.2.9.4."

---

**Review**

Table 101-1 contains redundant information: register name and register number. Since there is a lot of information and table is crowded, I suggest you drop second column and leave just register number. Rather than register name, it would be more helpful to provide active cross-reference link to specific table to allow reader to jump directly where it is defined.

**Suggested Remedy:**
Per comment

**Response**
ACCEPT.

---

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

**Comment:**
"These are passive or amplified multipoint coaxial cable distribution networks (CCDN) that connect multiple DTEs using a single shared coaxial link. The architecture is asymmetric, based on a tree and branch topology utilizing coaxial taps and splitters." - it is not clear whether details of CCDN (passive / amplified) really belong to Clause 101 - they should be moved to Clause 100 Introduction, where CCDN has any meaning. From PCS perspective, CCDN does not matter at all.

**Suggested Remedy:**
Per comment

**Response**
REJECT.

-----

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

**Comment:**
"PLS_DATA.indication and PLS_-DATA_VALID.indication primitives." - primitive name is broken across lines. Either force line break manually or exclude "_" from list of characters that are allowed to break across lines.

**Suggested Remedy:**
Per comment

**Response**
ACCEPT IN PRINCIPLE.
Check for auto hyphen locations and, where "_" breaks a line, set the word to non-hyphenating (Esc n s).
<table>
<thead>
<tr>
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<tr>
<td>2781</td>
<td>T</td>
<td>A</td>
<td>There is nothing in Tables 101-2 and 101-3 that looks any different from XGMII.</td>
<td>Remove this subclause altogether, unless there is a very good reason to keep it in the draft and extensions to XGMII signalling are planned.</td>
<td>C</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>2782</td>
<td>T</td>
<td>A</td>
<td>There is nothing in 101.2.4.2 and 101.2.4.3 that looks any different from 10G-EPON definitions.</td>
<td>Leave both headings in, but point to 10G-EPON PCS definitions, rather than copy stuff over without any changes.</td>
<td>C</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>2783</td>
<td>T</td>
<td>A</td>
<td>&quot;Figure 100–1 shows the relationship &quot; ... likely Figure 101-1?</td>
<td>Fix the name of state &quot;WAIT FOR CALL&quot; to &quot;WAIT_FOR_CALL&quot;. Remove &quot;rxCount&quot;</td>
<td>C</td>
<td>ACCEPT.</td>
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**Comment ID 2784**

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<tr>
<td>2784</td>
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<td>A</td>
<td>This statement is not really necessary: &quot;The EPoC PCS extends the 10GBASE-PR PCS described in Clause 76 to support operation over the point-to-multipoint coaxial medium architecture.&quot; - EPoC PCS will be substantially different from 10G-EPON and we do not extend EPON PCS, but define new PCS that extends 10GBASE-X PCS</td>
<td>Strike this statement altogether. It does not mean anything anyway.</td>
<td>C</td>
<td>ACCEPT.</td>
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<td>2785</td>
<td>T</td>
<td>A</td>
<td>A few issues with Figure 101–12: a) names of states should use the following convention: WORD1_WORD2_WORD3 b) rxCount is not used for anything</td>
<td>Fix the name of state &quot;WAIT FOR CALL&quot; to &quot;WAIT_FOR_CALL&quot;. Remove &quot;rxCount&quot;</td>
<td>C</td>
<td>ACCEPT IN PRINCIPLE. Correct state title per comment. The counter rxCount increments the bit array for rx_code_in, for each received bit of the received burst. It cannot be removed.</td>
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<td>Revise to read: &quot;This primitive defines the transfer of data (in the form of data bits) from the PMA client to the PMA and notifies the PMA on the start and the end of the data burst.&quot;</td>
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<td>a) continually or continuously? I believe the latter is correct</td>
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<td>b) In the downstream direction, is there really any need to mark burst start and end? If there is really no need, burstStart and burstEnd should also have one more value of &quot;NA&quot; used in downstream, where burst marking is really not needed.</td>
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### IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

#### Draft 1.2

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#### Comment Type: T, Comment Status: A

**2794**

**Cl 101**  **SC 101.4.2.1.3**  **P 145**  **L 34**  **# 2794**

Hajduczenia, Marek

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

"Upon receipt of this primitive, the PMA Symbol Mapper transfers the data bit into the downstream OFDM frame." - not true. In the upstream direction, the same primitive is used and it is then "upstream" OFDM frame.

**Suggested Remedy**

Strike the word "downstream"

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

**ACCEPT**.

**2795**

**Cl 101**  **SC 101.4.2.1.3**  **P 145**  **L 41**  **# 2795**

Hajduczenia, Marek

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

"In the CNU, both burstStart and burstEnd booleans are used by the upstream Symbol Mapper for placing start and end burst markers, respectively, into the appropriate resource elements. See 101.4.4.8." - in the context, these are parameters, and not booleans.

**Suggested Remedy**

revise to read as follows: "In the CNU, the values of burstStart and burstEnd ->parameters<< are used by the upstream Symbol Mapper ->to infer placement of << start and end burst markers, respectively, into the appropriate resource elements. See 101.4.4.8."

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

**ACCEPT IN PRINCIPLE**.

Change booleans to parameters

**2796**

**Cl 101**  **SC 101.4.3.1**  **P 146**  **L 27**  **# 2796**

Hajduczenia, Marek

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

"The PMA supports five channels where each channel is a 190 MHz OFDM channel (3800 subcarriers)" - why do we need to complicate statements without any need?

**Suggested Remedy**

Revise to read: "The PMA supports five 190 MHz wide OFDM channels where each OFDM channel contains up to 3800 subcarriers"

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

**ACCEPT IN PRINCIPLE**.

"The PMA supports five 190 MHz wide OFDM channels; each containing 3800 subcarriers"

**2797**

**Cl 101**  **SC 101.4.3.1**  **P 146**  **L 28**  **# 2797**

Hajduczenia, Marek

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

"Each OFDM channel is comprised of the following processing functions" - I am confused how an RF spectrum can be composed of processing functions ...

**Suggested Remedy**

Revise to read: "Each OFDM channel is associated with the following processing functions"

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

**ACCEPT**.

**2798**

**Cl 101**  **SC 101.4.3.1**  **P 146**  **L 24**  **# 2798**

Hajduczenia, Marek

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

"OFDM channel 1 is always enabled." - this seems like a hard requirement, while the following sentence seems like an optional requirement.

**Suggested Remedy**

Change "OFDM channel 1 is always enabled. OFDM channels 2, 3, 4, and 5 are optionally configured for operation as per operator deployment requirements." to read "OFDM channel 1 shall be always enabled. OFDM channels 2, 3, 4, and 5 should be enabled when configured for operation."

It is not really relevant who or what configures these channels

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

**ACCEPT IN PRINCIPLE**.

"OFDM channel 1 shall always be enabled. Optional OFDM channels 2, 3, 4, and 5 are enabled when configured for operation."

**2799**

**Cl 101**  **SC 101.4.3.1**  **P 146**  **L 36**  **# 2799**

Hajduczenia, Marek

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

"of the cable network" - likely, CCDN?

**Suggested Remedy**

Change per comment

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

**ACCEPT IN PRINCIPLE**.

"of the coaxial cable distribution network"
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

Draft 1.2

Cl 101 SC 101.4.3.1 P 146 L 41 # 2800
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status A

"The Symbol Mapper multiplexes PCS data over all active subcarriers" - multiplexes seems like a very bad word here.

SuggestedRemedy
Revise to read: "The Symbol Mapper maps PCS data into active subcarriers" - alternatively, "spreads" or "distributes" would be also fine, but "maps" seems to be the most appropriate given the name of the functional block itself.

Response Response Status C

ACCEPT IN PRINCIPLE.

Distributes

Cl 101 SC 101.4.3.2 P 147 L 21 # 2801
Hajduczenia, Marek Bright House Network

Comment Type E Comment Status A

fDS should be changed to f>>DS<<, where "DS" is in subscript

SuggestedRemedy
Per comment

Response Response Status C

ACCEPT IN PRINCIPLE.

Remove the following from the table - they have no numeric values. These should become requirements in the text itself:

Carrier Frequency Acquisition
Sampling rate
OFDM RF Transmission Synchronization

Response Response Status C

ACCEPT IN PRINCIPLE.

Change per remein_3bn_21_0115.pdf

Also apply changes in comment 2803
### Comment ID 2803

**Hajduczenia, Marek**  
**Bright House Network**

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

In addition to meeting the clock jitter requirements given above, the CLT is required to meet the phase noise specifications defined in Figure 100–1. In the event of a conflict between the clock jitter and the phase noise requirement, the CLT shall meet the more stringent requirement.

The first statement is a repetition of a requirement already existing in Clause 100 next to Table 100–1. Remove the first statement.

The second statement is not testable. Under what conditions would this be really required? If such conflicts are known to exist, they need to be spelled out and proper requirements need to be listed.

**Suggested Remedy**

Per comment

**Response**

ACCEPT IN PRINCIPLE.

In Table 101–9 Jitter spec 5th bullet change *"100 kHz to (fDS /2)"* to *"100 kHz to (fDS /3)"*

Strike *"The CLT uses a value of fDS that is an integral multiple or divisor of the downstream symbol clock"*

change ref to Table 100-3 not Fig 100-1.

### Comment ID 2804

**Hajduczenia, Marek**  
**Bright House Network**

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

"Each subcarrier in an OFDM channel is configured using the DS_ModTypeSC(n) variables" - I believe these are registers in Clause 45.

**Suggested Remedy**

Change to read "Each subcarrier in an OFDM channel is configured using DS_ModTypeSC(n) registers" - Insert also cross reference to Clause 45 where these are defined. Make sure these are not called "variables" but registers. There are plenty of locations where such terminology is still used and needs to be aligned accordingly.

**Response**

Response Status C

REJECT.

A prior comment from the Working Group Secretary specifically requested including a mapping table to Cl 45 (see Table 101-1) and instead of referring to registers refer instead to variable names. This avoids the implication that Cl 45, which is optional, is instead required.

### Comment ID 2805

**Hajduczenia, Marek**  
**Bright House Network**

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

In Table 101–10, what is "SC"? It seems that no unit is more appropriate here

**Suggested Remedy**

Remove "SC" from unit for "Minimum number of active subcarriers in a contiguous group"

**Response**

Response Status C

ACCEPT.

### Comment ID 2806

**Hajduczenia, Marek**  
**Bright House Network**

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

In Table 101–10, what is "SC"? It seems that no unit is more appropriate here

**Suggested Remedy**

Remove "SC" from unit for "Minimum number of active subcarriers in a contiguous group"

**Response**

Response Status C

ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

Cl 101 SC 101.4.3.3 P 148 L 28 # 2807
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status A

"This may include subcarriers intended" ... what is "this" referring to in this case?

Suggested Remedy

Please replace "this" with a full subject to avoid interpretation problems.

Response

ACCEPT IN PRINCIPLE.

This 22 MHz band

Cl 101 SC 101.4.3.3 P 148 L 27 # 2808
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status R

"There is at least one contiguous 22 MHz or greater band of subcarriers with an assigned bit loading in any single 192 MHz OFDM channel. " - this seems like a hard requirement for EPoC PHY Is there a normative requirement anywhere?

Suggested Remedy

If there is no normative language for this minimum requirement in Clause 100, it should be added there.

Response

REJECT.

See Table 101-2 Encompassed spectrum 22 to 190 MHz for requirement

Cl 101 SC 101.4.3.3 P 148 L 32 # 2809
Hajduczenia, Marek Bright House Network

Comment Type E Comment Status A

"1Excluded subcarriers" - "1" does not seem to be needed :)

Suggested Remedy

Remove "1"

Response

ACCEPT.

Correct it should be excluded ;)

Cl 101 SC 101.4.3.3 P 148 L 34 # 2810
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status A

"EPoC devices shall not transmit energy" - you probably mean "EPoC PHY"

Suggested Remedy

Change to "EPoC PHY shall not transmit energy"

Response

ACCEPT IN PRINCIPLE.

An EPoC PHY shall not transmit energy

Cl 101 SC 101.4.3.3 P 148 L 34 # 2811
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status R

EPoC devices shall not transmit energy into a subcarrier that has been excluded from the OFDM channel (i.e, excluded subcarriers have zero amplitude). Typically there is a band edge Exclusion Band at both the top and bottom of the OFDM channel and there may be up to 14 exclusion bands internal to a single 192 MHz OFDM channel. Exclusion bands are limited to 20% or less of encompassed spectrum (see Table 101–10).

All of these rules call for an illustration of a spectrum with a typical allocation of the channel, exclusion bands, pilots, etc. to demonstrate what it is we are talking about.

Suggested Remedy

Insert a new figure showing example of a typical spectrum allocation, with exclusion band, pilots, nulled subcarriers, etc.

Response

REJECT.

Should the commentor submit a figure it will be considered.

Cl 101 SC 101.4.3.4 P 148 L 43 # 2812
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status A

"The downstream OFDM frame pattern" - what is a "frame pattern"? it is used in just two locations in the whole draft and not defined anywhere.

Suggested Remedy

Remove the word "pattern" in this context, since it is meaningless.

Response

ACCEPT.
**Comment ID 2813**

**Comment Type E**

*Ref 102.2* should be "see 102.2"

**Suggested Remedy**

Per comment

**Response**

**Response Status C**

ACCEPT.

**Comment ID 2814**

**Comment Type T**

Figure 101-16 does not show the coverage of "128 symbols" - are these all symbols shown in the figure, or just a subgroup of these symbols?

**Suggested Remedy**

In either case, add vertical dashed line to present the start and the end of the OFDM frame.

It is also not clear whether the timestamp reference is at the start of the OFDM frame or its end, or somewhere in the middle.

**Response**

**Response Status C**

ACCEPT IN PRINCIPLE.

Add vertical dashed lines indicating boundaries of frame n & n+1 going from beginning of preamble to beginning of preamble.

Move 128 Symbol dimension arrow to align with front of preamble.

**Comment ID 2815**

**Comment Type T**

"Downstream pilots are subcarriers modulated by the CLT with a defined modulation pattern that is known to all the CNUs in the system to allow interoperability. " - this is a very complex way to express a simple concept - CNUs know in advance the modulation pattern for downstream pilots.

**Suggested Remedy**

Reword to read "Downstream pilots are comprised of subcarriers modulated with a predefined pattern known to all CNUs. "

**Response**

**Response Status C**

ACCEPT.

**Comment ID 2816**

**Comment Type T**

"This information is conveyed via" - what is "this information"?

**Suggested Remedy**

Suggest to reword "Information about the modulation pattern for downstream pilots is transferred to CNUs via"

**Response**

**Response Status C**

ACCEPT IN PRINCIPLE.

I believe the intent of the sentence is to point to the block diagram. Statements regarding communication of pilot location are included later in this section.

Change

This information is conveyed via the Pilot Map function (see Figure 100–2) to

The pilot information is inserted via the Pilot insertion function (see Figure 100–2)

**Comment ID 2817**

**Comment Type T**

Consistency in capitalization of functional block names: "Pilot insertion follows time and frequency interleaving, before IDFT processing" should be likely "The Pilot insertion process follows the Time and Frequency Interleaving process and precedes the IDFT Processing"

**Suggested Remedy**

Per comment. Make sure that the names of individual functional blocks are consistent with the names used in Figures 100-2 through 6

**Response**

**Response Status C**

ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

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Hajduczenia, Marek
Bright House Network

Comment ID: 2818

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Either make the figure or the text normative, but not both.

SuggestedRemedy
Change the text "The scattered pilot pattern shall be synchronized to the PHY Link as shown in Figure 101–17" to read "The scattered pilot pattern is synchronized to the PHY Link as shown in Figure 101–17" - the textual description is sufficient to guarantee IOP.

Response
Accept In Principle.

The scattered pilot pattern shall be synchronized to the PHY Link as illustrated in Figure 101–17.

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Hajduczenia, Marek
Bright House Network

Comment ID: 2819

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A normative normative requirement does not exist :) The whole list in lines 2 - 10 is already normative.

SuggestedRemedy
Change "Scattered pilots placed in excluded subcarriers shall not be transmitted." to "Scattered pilots placed in excluded subcarriers are not transmitted."
Also, not sure whether this statement should not really be part of bullet 2)
Similarly, no need for "shall" statement in bullet 4.
The additional description on page 151, lines 1-20 is not really needed and should be removed.
Alternatively, if mathematical deciration is preferred, the text on page 151 should be made as mandatory (after cleanup and clarification) and the summary text on page 150 be removed.

Response
Accept In Principle.
Reword text page 150 so it is not normative.
The remainder of the scattered pilot pattern is placed so that in each symbol scattered pilots occur every 128 subcarriers. From symbol to symbol, scattered pilots are shifted by one subcarrier position in the direction of increasing frequency. This may result in scattered pilots placed in the exclusion bands or in the PHY Link band, such scattered pilots are not transmitted.

Reword text page 151 so it is normative.
From: "Mathematically, the scattered pilot pattern is defined as follows"
to: "Mathematically, the scattered pilot pattern shall be defined as follows"

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Hajduczenia, Marek
Bright House Network

Comment ID: 2820

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Scattered pilots have a nice figure showing how they are spread across different subcarriers. Is there any plan to add a similar figure for continuous pilots?

SuggestedRemedy
Insert a new figure, similar to Figure 101–17, showing placement of continuous pilots.
Overlapling between scattered and continuous pilots should be also demonstrated.

Response
Accept In Principle.
Add reference to Figure 102-8 in 1)
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

Draft 1.2

Response #2821

Cl 101 SC 101.4.3.5.3 P 151 L 42

Hajduczenia, Marek
Bright House Network

Comment Type T Comment Status A

"Table 101–11 provides the values of d1, d2, d3, and d4. " - there is no mandatory requirement for continuous pilots placed around PHY Link to follow the placement described in Table 101-11.

SuggestedRemedy

Add a "shall" statement making the placement of continuous pilots around PHY Link follow Table 101-11.

Response

Accept in principle.

Change:
Four pairs of predefined continuous pilots are placed symmetrically around the PHY Link as shown in Figure 102–8.

To:
Four pairs of predefined continuous pilots shall be placed symmetrically around the PHY Link as shown in Figure 102–8 at the distances indicated in Table 101–11.

Response

Accept in principle.

Comment #2822

Cl 101 SC 101.4.3.5.4 P 152 L 10

Hajduczenia, Marek
Bright House Network

Comment Type T Comment Status A

"The CLT shall define a set of continuous pilots distributed as uniformly as possible " - now we have to define the precision for "as uniformly as possible"

SuggestedRemedy

Change "as uniformly as possible" to "uniformly" and add informative text describing the allowed tolerances for the uniformity or how the placement of individual pilots is transferred to CNU.

Response

Accept in principle.

Change "as uniformly as possible" to "as uniformly as possible (see below)"

Note that the rest of this section provides a good description of "as uniformly as possible"
Comment Type T Comment Status A

"The CLT shall adhere to the rules given below for the definition of this set of continuous pilot locations conveyed to the CNU via PHY Link messaging. It is noted that these rules do not apply to the eight predefined continuous pilots." - very complex way of saying the CLT places continuous pilots in specific locations.

Suggested Remedy
Change to the following statement: "The CLT shall place continuous pilots following Equation 101-4, excluding eight continuous pilots placed around PHY Link channel per 101.4.3.5.4."

Remove the statements: "The CLT places the continuous pilots generated using these rules in every OFDM symbol, in addition to the eight predefined continuous pilots. The CLT obtains the value of N using the following formula:" - they do not add anything to the specification.

Response
ACCEPT IN PRINCIPLE.

The proposal seems overly restrictive (unless we eliminate Steps 5, 6, & 7 later in this section).

Reword as:
"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 NCP using Equation 101-4."

Remove the statements: "The CLT places the continuous pilots generated ..." per comment.

Comment Type T Comment Status A

"The value of M in Equation (101-4) is kept as a parameter that can be adjusted by the CLT. Nevertheless, the CLT ensures that M is in the range given by the following equation:

120 ≥ M ≥ 48 (101-5)

The typical value proposed for M is 48."

This is not intended to be a scientific paper - we just need to stick to the facts here.

Suggested Remedy
Revise to read:
"The value of parameter M in Equation (101-4) ranges from 48 to 120, inclusive. CLT has no way to ensure that the operator does not configure the said parameter to a different value.

Response
ACCEPT IN PRINCIPLE.
See remain_3bn_16_0115 and related comment 3077.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

Response #2827

Cl 101 SC 101.4.3.5.4 P 152 L 38 # 2827
Hajduczenia, Marek Bright House Network

Comment Type T
Comment Status A
A lot of unnecessary fluff in the text: In equation 101–4 Fmax refers to frequency in Hz of the highest frequency active subcarrier and Fmin refers to frequency in Hz of the lowest frequency active subcarrier of the OFDM channel. It is observed that the number of continuous pilots is linearly proportional to the frequency range of the OFDM channel. It may also be observed that the minimum number of continuous pilots defined cannot be less than 8, and the maximum number of continuous pilots defined cannot exceed 120. Therefore, the total number of continuous pilots, including the predefined ones, will be in the range 16 to 128, both inclusive.

Which seems to be more appropriate to a scientific paper than a standard.

Suggested Remedy
Revise to read:

"The parameter Fmax in Equation (101–4) describes the frequency (in Hz) of the highest (in frequency) active subcarrier and the parameter Fmin describes the frequency (in Hz) of the lowest (in frequency) active subcarrier of the OFDM channel. The number of continuous pilots ranges from 16 to 126, inclusive, including eight continuous pilots placed around the PHY Link channel."

Response
ACCEPT IN PRINCIPLE.
Per comment but last sentence to read
The number of continuous pilots is between 16 and 128. This range includes the eight continuous pilots placed around the PHY Link channel.

Response Status C

Hajduczenia, Marek Bright House Network

Comment #2828

Cl 101 SC 101.3.3.1.1 P 134 L 4 # 2828
Hajduczenia, Marek Bright House Network

Comment Type E
Comment Status A
"Note that this is overview is presented in an abstract manner and does not imply any particular implementation." - if this is intended to be a NOTE, it is in a wrong style format.

Suggested Remedy
Change the style to correct style of a NOTE, or apply T, Text style.

Response
ACCEPT IN PRINCIPLE.
Remove the note; this is always the case for 802.3 standards.

Response Status C

Hajduczenia, Marek Bright House Network

Comment #2830

Cl 101 SC 101.3.3.1.1 P 134 L 39 # 2830
Hajduczenia, Marek Bright House Network

Comment Type TR
Comment Status A
The process of decoding FEC codewords in the 10GPASS-XR CNU receiver is illustrated in Figure 101–11 - where is the figure to illustrate bit flow in 10GBASE-XR CLT receiver to be referenced in 101.3.3.1.1?

Suggested Remedy
Insert reference in 101.3.3.1.1 to a figure showing FEC decoding process in CLT receiver. Such a figure is also needed.

Response
ACCEPT IN PRINCIPLE.
Add Editors note
EDITORS NOTE (to be removed prior to publication): A figure and reference to same is needed showing FEC decoding process in CLT receiver.

Response Status C

Hajduczenia, Marek Bright House Network
**Comment**

*The FEC decoder in the CNU shall provide a user-configurable option (variable CRC40ErrCtrl)* - there are references to variables peppered in the text, but it never says where they are defined.

**Suggested Remedy**

Please insert references to location where specific variables / parameters are defined, unless it is the very same subclause and the reader does not have to jump a few pages to find this location.

**Response**

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<td>&quot;The FEC decoder in the CNU shall provide a user-configurable option (variable CRC40ErrCtrl)&quot; - there are references to variables peppered in the text, but it never says where they are defined.</td>
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**Comment Type**

**E**

**Comment Status**

**A**

**Comment**

"If CRC40ErrCtrl is enabled" - the variable cannot be "enabled" or "disabled"

**Suggested Remedy**

Change to "If CRC40ErrCtrl is set to enable". Similarly, for disable. Changes limited to 101.3.3.1.3

**Response**

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**Comment Type**

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**Comment Status**

**A**

**Comment**

"of dataInSize bit" - sometimes names of variables / parameters are italicized and sometimes they are not, without any consistency.

**Suggested Remedy**

I like the idea of marking names of variables / parameters with italics, but (a) it needs to be confirmed with the style manual (I could not find statement preventign the use of italics for variables), (b) confirmed with 802.3 Chief Editor, and once it is confirmed we can use this style, apply it consistently in the whole draft and not just selected locations.

**Response**

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<td>&quot;of dataInSize bit&quot; - sometimes names of variables / parameters are italicized and sometimes they are not, without any consistency.</td>
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Changes to Cl 00 as this would impact the entire draft. IEEE style guide 15.3 says: "All variables are italic. (e.g., \( x, y, n \))."
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<td>The names of variables / parameters are very inconsistent right now, especially in terms of their capitalization.</td>
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<td>It would be much simpler to read and figure out what is the name of a variable and what is regular text if the names of all variables / parameters in the draft observed the following naming convention: word1Word2Word3 ..., where the word1 is always written in lower caps, Word2 and the wording Words have first letter capitalized.</td>
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<td>Please apply consistently in the whole draft! The same applies to names of functions, messages, constants, etc. unless they are defined already elsewhere in the standard and we just reference them verbatim.</td>
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<td>Changed to Clause 00 as the requested change is against the entire draft. This seems like a lot of unnecessary “make-work” for the editors which risks the risk of introducing errors into the text of the draft. Also there is no precedent for adopting such a convention.</td>
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<td></td>
<td><strong>Suggested Remedy</strong></td>
<td></td>
<td></td>
<td></td>
<td>Insert at least editorial note to indicate that the CNU PMA process and CLT FEC decoding process state diagrams are missing and needed to be added.</td>
</tr>
<tr>
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<td><strong>Response:</strong></td>
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<td>ACCEPT.</td>
</tr>
<tr>
<td>Cl</td>
<td>SC</td>
<td>P</td>
<td>L</td>
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<td>Comment Type</td>
<td>Comment Status</td>
<td>Response Status</td>
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<td>Suggested Remedy</td>
<td>Response</td>
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<td>103</td>
<td>103.2.2.3</td>
<td>249</td>
<td>4</td>
<td>2840</td>
<td>T</td>
<td>A</td>
<td>C</td>
<td>Zhang, Jin Marvell Semiconductor</td>
<td>The variable PhyOutDataSize and PhyInDataSize are unclear how to determine their values. It also seems that these two variables are not necessary in equation (103-1). The beta parameter can just be defined with XGMII_rate and PCS_rate.</td>
<td>Remove these two variables.</td>
</tr>
<tr>
<td>101</td>
<td>101.3.2.1.5</td>
<td>118</td>
<td>1</td>
<td>2841</td>
<td>T</td>
<td>A</td>
<td>C</td>
<td>Zhang, Jin Marvell Semiconductor</td>
<td>The two separate processes of idle deletion need to be consolidated into a single process. The idle deletion output data rate has to match the PMD rate exactly in the long run.</td>
<td>Consolidate the idle deletion process as attached file zhang_3bn_04_0115.pdf, (also available in .vsd format). Basically, the idea is to use accResidue to track the residual difference between the PMD rate and the idle deletion output rate. If accResidue exceeds 1, an extra idle block needs to be deleted.</td>
</tr>
<tr>
<td>103</td>
<td>103.2.2.7</td>
<td>255</td>
<td>1</td>
<td>2843</td>
<td>T</td>
<td>A</td>
<td>Review</td>
<td>Zhang, Jin Marvell Semiconductor</td>
<td>Fig. 103-12, the diagram of CLT control multiplexer needs to be updated to take into account the PMD derating overhead.</td>
<td>Use the modified CLT control multiplexer diagram as attached in zhang_3bn_01_0115.pdf, also available in .vsd format.</td>
</tr>
<tr>
<td>103</td>
<td>103.2.2.4</td>
<td>250</td>
<td>11</td>
<td>2844</td>
<td>T</td>
<td>A</td>
<td>Review</td>
<td>Zhang, Jin Marvell Semiconductor</td>
<td>The definition of PMD_Overhead function needs to be updated in accordance with the diagram of CLT control multiplexer</td>
<td>Please see the attached text zhang_3bn_02_0115.pdf, also available in .docx format.</td>
</tr>
</tbody>
</table>
FEC_CODEWORD_SIZE value should be determined. In accordance with the PMD_Overhead function, a fractional number constant FEC_CODEWORD_SIZE_FRAC should be added.

**SuggestedRemedy**

The value of FEC_CODEWORD_SIZE is 1987 bytes.

The definition of FEC_CODEWORD_SIZE_FRAC is:

FEC_CODEWORD_SIZE_FRAC

**TYPE:** FRACTION

This constant represents the exact size of FEC codeword in fraction of octets, because the parity bit is not multiple of 65 bits

Value: (1760+2944/13)

---

The description of fecOffset needs to be modified in accordance with the CLT Control multiplexer diagram.

**SuggestedRemedy**

fecOffset

**TYPE:** 32 bit unsigned

A variable that advances by 1 after every octet time. After reaching the value of FEC_CODEWORD_SIZE, this variable is on hold for a period of time for PMD derating and then reset to zero. The diagram of fecOffset can be seen at Figure 103-x. (Please see attached file zhang_3bn_03_0115.pdf for diagram, also available in vsd format).

**Response**

Octet_CLK

**TYPE:** Boolean

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.

Derating_timer:

This timer is used to suspend the advancing of fecOffset in order to derate the MAC frame transmission to be able to match the PMD rate.

Initial_derating_delay

**TYPE:** 24 bit unsigned

This variable is used to set the time-out interval for derating_timer defined in 103.2.2.5. The initial_derating_delay value is represented in units of octets.

---

The value should be 227. (ceiling(2944/13)

**Response**

ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

**Comment ID** 3015

**Type:** TR/technical required

**Comment Status:** A

**Comment:** 
FEC_PAYLOAD_SIZE needs to be determined

**Suggested Remedy:**
The value should be 1760.

**Response:**

**Response Status:** C

**Response:**

**Acceptance:**

---

**Comment ID** 3016

**Type:** E/editorial required

**Comment Status:** A

**Comment:**
When updating FrameMaker book get error: Use Condition Indicators setting is inconsistent

**Suggested Remedy:**
import conditional text settings from 8023xx-200 template.

**Response:**

**Response Status:** C

**Response:**

**Acceptance:**

---

**Comment ID** 3017

**Type:** E/editorial required

**Comment Status:** A

**Comment:**
Editors notes here and on line 10 seem to have served their purpose.

**Suggested Remedy:**
remove.

**Response:**

**Response Status:** C

**Response:**

**Acceptance:**

---

**Comment ID** 3018

**Type:** T/technical required

**Comment Status:** A

**Comment:**
Figure 101–10—CLT transfer to PMA process From where; PMD or PCS? Similar issue on Fig 101-12 CLT transfer from PMA process

**Suggested Remedy:**
change title to Downstream CLT transfer to PMA process and Upstream CLT transfer from PMA process

**Response:**

**Response Status:** C

**Response:**

**Acceptance:**

---

**Comment ID** 3020

**Type:** E/editorial required

**Comment Status:** A

**Comment:**
Should we set variables to true (7x), True (4x) or TRUE (50x)

**Suggested Remedy:**
Use TRUE & FALSE consistently.

**Response:**

**Response Status:** C

**Response:**

**Acceptance:**
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

Cl 101 SC 101.4.3.5.4 P 152 L 35 # 3021
Remein, Duane Huawei Technologies

Comment Type E Comment Status A

EDITORS NOTE (to be removed prior to publication): in the above equation the term Ncp conflicted with an identical term used in the cyclic prefix definition. The Editor substituted the term Npc.

This has served it's purpose

SuggestedRemedy

Remove

Response Response Status C

ACCEPT.

Cl 101 SC 101.4.3.5.4 P 153 L 43 # 3022
Remein, Duane Huawei Technologies

Comment Type E Comment Status A

EDITORS NOTE (to be removed prior to publication): we need a definition of "band edge". The following is suggested: "(the boundary between an excluded subcarrier and a non-excluded subcarrier)"

SuggestedRemedy

Remove note - a definition exists (see 101.4.4.3.2)

Response Response Status C

ACCEPT.

Cl 101 SC 101.4.3.6.1 P 154 L 345 # 3023
Remein, Duane Huawei Technologies

Comment Type E Comment Status A

Update reference (see Section 101.4.3.6.x)

SuggestedRemedy

to: (see Section 101.4.3.6.5)

Response Response Status C

ACCEPT.

Cl 101 SC 101.4.3.6.1 P 154 L 36 # 3024
Remein, Duane Huawei Technologies

Comment Type E Comment Status A

Wording:
"Per OFDM symbol, converts bits per subcarrier to an array of QAM constellation points using a two-dimensional array with an I and Q "bin" value per subcarrier. The bin array is then passed to the Interleaver per completed OFDM symbol."

SuggestedRemedy

to:
"Converts tx_unit bits to an array of QAM constellation points using a two-dimensional array with an I and Q "bin" value for each subcarrier and passes these values to the Interleaver."

Response Response Status C

ACCEPT.

Cl 101 SC 101.4.3.6.3 P 156 L 8 # 3025
Remein, Duane Huawei Technologies

Comment Type E Comment Status A

References typically do not include titles and page number

SuggestedRemedy

remove title and page number.

Response Response Status C

ACCEPT.

Cl 101 SC 101.4.3.6.2 P 155 L 46 # 3026
Remein, Duane Huawei Technologies

Comment Type E Comment Status A

NI wrong format

SuggestedRemedy

italics with I subscripted.

Response Response Status C

ACCEPT.

Comment ID 3026  Page 31 of 66
Response #3027

**Comment ID:** 3027  
**Page:** 32  
**Comment Status:** A  
**Response Status:** C

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

Rather than refer to the section we should refer to the equation here.

**Change**

Where, \( N_I \) is the number of data subcarriers and scattered pilots in an OFDM symbol. See section 101.4.3.6.2.

**Suggested Remedy**

To

Where, \( N_I \) (see equation 101-10) is the number of data subcarriers and scattered pilots in an OFDM symbol.

**Response**

**Response Status:** C

**ACCEPT.**

Response #3028

**Comment ID:** 3028  
**Page:** 3  
**Comment Status:** A  
**Response Status:** C

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

We iterate the definition of ceiling and floor functions each time they are used. This is unnecessary.

**Suggested Remedy**

In each clause using ceiling or floor function include the definitions (see pg 80 line 44 for ceiling and pg 90 line 26 for floor) in the conventions section for that clause.

There are 19 instances of ceiling and 14 instances of floor functions.

**Response**

**Response Status:** C

**ACCEPT IN PRINCIPLE.**

With the exception of Eq 100-12

Response #3029

**Comment ID:** 3029  
**Page:** 27  
**Comment Status:** A  
**Response Status:** C

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

"m = L" should be in italics

**Suggested Remedy**

per comment

**Response**

**Response Status:** C

**ACCEPT.**

Response #3030

**Comment ID:** 3030  
**Page:** 34  
**Comment Status:** A  
**Response Status:** C

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

"Wording can be better than "follows the following process""

**Suggested Remedy**

performs the following

**Response**

**Response Status:** C

**ACCEPT.**

Response #3031

**Comment ID:** 3031  
**Page:** 32  
**Comment Status:** A  
**Response Status:** C

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

"note the some"

**Suggested Remedy**

"note that some"

**Response**

**Response Status:** C

**ACCEPT.**

Response #3032

**Comment ID:** 3032  
**Page:** 50  
**Comment Status:** A  
**Response Status:** C

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

In the following statement it is not clear what "this signal" is:

"This signal is described according to the following IDFT equation:"

**Suggested Remedy**

Combine with previous para and reword as follows

"These OFDM/OFDMA signals are described in IDFT equation 101-18.

**Response**

**Response Status:** C

**ACCEPT.**
<table>
<thead>
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<th>Cl 101 SC 101.4.3.10</th>
<th>P 165 L 37</th>
<th>#5033</th>
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<td>Comment Status</td>
</tr>
<tr>
<td>Comment Type</td>
<td>E</td>
<td>Comment Status</td>
</tr>
<tr>
<td>(see Table Ref)s/b 100-13</td>
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<td></td>
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<tr>
<td>Suggested Remedy</td>
<td>per comment</td>
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<th>P 171 L 8</th>
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</tr>
<tr>
<td>Table 101–11 ref s/b Table 101–16</td>
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<td>per comment</td>
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<tr>
<td>Comment Type</td>
<td>E</td>
<td>Comment Status</td>
</tr>
<tr>
<td>&quot;modulated per the 10GPASS-XR US profile descriptor control (see 45.2.7a.2)&quot; should be per US_ModTypeSC(n)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suggested Remedy</td>
<td>to read:</td>
<td></td>
</tr>
<tr>
<td>modulated per the US_ModTypeSC(n) variable where n is the subcarrier index.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response</td>
<td>Response Status</td>
<td>C</td>
</tr>
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<tr>
<td>Comment Type</td>
<td>E</td>
<td>Comment Status</td>
</tr>
<tr>
<td>Wording &quot;The Low Density Pilot resource element is modulated using either BPSK or 4 bits lower than normal, or which ever is higher&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suggested Remedy</td>
<td>to:</td>
<td></td>
</tr>
<tr>
<td>&quot;The Low Density Pilot resource element is modulated using the higher modulation order of either BPSK or 4 bits lower than the bit loading specified in the ModTypeSC(n) variable for that subcarrier.&quot;</td>
<td></td>
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<tr>
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<td>Response Status</td>
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<tr>
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<th>P 175 L 35</th>
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<td>Comment Type</td>
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<td>Comment Status</td>
</tr>
<tr>
<td>Editor's Note (to be removed prior to publication): the TF has agreed that only one upstream profile is allowed to be in use at a time by all CNUs. Text to support this position is requested from the TF. See 101.4.4.4</td>
<td></td>
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<tr>
<td>Suggested Remedy</td>
<td>strike note.</td>
<td></td>
</tr>
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<td>Response</td>
<td>Response Status</td>
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<td>ACCEPT.</td>
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<td>E</td>
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</tr>
<tr>
<td>This statement is no longer valid &quot;DP is either data or pilot element.&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suggested Remedy</td>
<td>strike</td>
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<td>101.4.4.13</td>
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<td>187</td>
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**Comment ID:** 3044 | **Page:** 34 of 66 | **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 | **Z:** withdrawn

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<th>Response</th>
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<td>E</td>
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<td>E</td>
<td>(u_i) should be (ui) with (i) subscripted</td>
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<td></td>
</tr>
<tr>
<td>3046</td>
<td>E</td>
<td>A</td>
<td>E</td>
<td>are then be time interleaved</td>
<td>ACCEPT.</td>
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</tr>
<tr>
<td>3047</td>
<td>E</td>
<td>A</td>
<td>E</td>
<td>duplicate types</td>
<td>remove the latter.</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3048</td>
<td>E</td>
<td>A</td>
<td>E</td>
<td>Originally we were intending to send PHY Discovery response in the PHY Link so &quot;normal data transfers&quot; made sense. This is not longer the case. &quot;For normal data transfers the upstream PHY Link shall use a (384,288) binary punctured LDPC code described in 102.1.4.2.1.&quot;</td>
<td>To: “The upstream PHY Link shall use a (384,288) binary punctured LDPC code described in 102.1.4.2.1.”</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3049</td>
<td>E</td>
<td>A</td>
<td>E</td>
<td>RndDly(r) - this function is not used here.</td>
<td>Move to 102.4.1.7.4 Functions</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3050</td>
<td>E</td>
<td>A</td>
<td>E</td>
<td>We no longer have a PHY Discovery Instruction</td>
<td>remove phrase</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>Comment ID</td>
<td>Page</td>
<td>Reference</td>
<td>Type</td>
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</table>
| 3051       | 5051 | SC 102.4.2.3 | P 222 | L 7 | # 3051 | E | A | We should be consistent in our reference to this: "EPoC Probe Control"
| 3052       | 5052 | SC 102.4.2.6 | P 226 | L 6 | # 3052 | E | A | Misplaced variable name PrbID.
| 3053       | 5053 | SC 102.4.3 | P 227 | L 46 | # 3053 | E | A | EDITORS NOTE has served it's purpose. Ref to Table 102-12 in error
| 3054       | 5054 | SC 1.4 | P 24 | L 12 | # 3054 | E | A | Incorrect para style for text: Change the definition of 1.2.127 as shown below:

**Suggested Remedies**

- **Add "Header"**
- **remove.**
- **remove note**
- **add live ref to Table 102-13**
- **Change style to Editing Instruction**

**Response**

- ACCEPT.
- ACCEPT.
- ACCEPT.
- ACCEPT.

**Comment ID** 3057  Page 36 of 66

**SORT ORDER**: Comment ID
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<td>45.2.1.115</td>
<td>42</td>
<td>11</td>
<td>E</td>
<td>A</td>
<td>Huawei Technologies</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IEEE style guide precludes sub-section with only one section. Combine Sections 45.2.1.115 and 45.2.1.115.1</td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td><strong>SuggestedRemedy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remove section 45.2.1.115.1 and change section to read 45.2.1.115 PHY Discovery control register (Registers 1.1913 and 1.1914) The PHY Discovery process is used to bring up new CNUs on the EPoC coax cable distribution network. Registers 1.1913 and 1.1914 indicate when the next PHY Discovery window is opened relative to the downstream timestamp with bit 1.1913.0 being the LSB and bit 1.1914.15 bring the MSB. Setting the PHY Discovery start parameter to zero disables the PHY Discovery window. The PHY Discovery process is fully described in 102.4. The assignment of bits in the PHY Discovery control register is shown in Table 45-78j.</td>
<td></td>
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<td><strong>ACCEPT.</strong></td>
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<tr>
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<td>A</td>
<td>Huawei Technologies</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The CNU_ID assigned flag is used ... should refer to the register number not the name.</td>
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<td>The Allowed CNU_ID bits ... should refer to the register number not the name.</td>
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<td>Change to: The value of bits 1.1915:14 through 1.1915:0 are used to</td>
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</tbody>
</table>
IEEE style guide precludes sub-section with only one section. Combine Sections 45.2.1.119 and 45.2.1.119.1

Suggested Remedy
Remove section 45.2.1.119.1 and change section to read
45.2.1.119 DS PHY Link frame counter bit definitions (Register 1.1921)
Register 1.1921.15 through 1.1921.0 represent the DS PHY Link frame count. This counter is incremented at the beginning of the PHY Link frame and, on terminal count, rolls over to zero. The assignment of bits in the DS PHY Link frame counter bit definition is shown in Table 45–78m.

Accept.

Comment ID 3064

IEEE style guide precludes sub-section with only one section. Combine Sections 45.2.1.120 and 45.2.1.120.1

Suggested Remedy
Remove section 45.2.1.120.1 and change section to read
45.2.1.120 PHY timing offset (Registers 1.1922 and 1.1923)
Registers 1.1923 through 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, bit 1.1923.14 is the MSB and bit 1.1923.15 is the sign bit. A negative value causes the timing of the CNU transmissions to be delayed. The PHY timing offset registers are used to align the CNU to the upstream OFDM timing. For more information on the use of these registers see 102.4. The assignment of bits in the PHY timing offset bit registers is shown in Table 45–78n.

Accept.

Comment ID 3065

IEEE style guide precludes sub-section with only one section. Combine Sections 45.2.1.115 and 45.2.1.115.1

Suggested Remedy
Remove section 45.2.1.115.1 and change section to read
45.2.1.115 PHY power offset (Register 1.1924)
Register bits 1.1924:7 through 1.1924:0 represent a signed 8-bit value in units of 1/4 dB. The PHY power offset is used to set the CNU upstream transmitter power by specifying 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. For more information on the use of this register see 102.4. The assignment of bits in the PHY power offset bit definition is shown in Table 45–78o.

Accept.

Comment ID 3066

IEEE style guide precludes sub-section with only one section. Combine Sections 45.2.7a.1, 45.2.7a.2, and 45.2.7a.3

Suggested Remedy
Remove footnotes regarding "Continuous pilot" to BPSK has served it’s purpose. Also on Pg 50 line 46

Removed footnotes.

Accept.
Cl 45  SC 45.2.7a.1  P 49  L 31  # 3068
Remein, Duane  Huawei Technologies

Comment Type  E  Comment Status  A
Editors note has served it's purpose.

SuggestedRemedy
Remove

Response  Response Status  C
ACCEPT.

Cl 100  SC 100.2.8.2  P 82  L 44  # 3069
Remein, Duane  Huawei Technologies

Comment Type  E  Comment Status  A
Output Impedance 75 ohms

SuggestedRemedy
Move ohms to units col.

Response  Response Status  C
ACCEPT.

Cl 100  SC 100.2.9.5.1  P 90  L 10  # 3070
Remein, Duane  Huawei Technologies

Comment Type  E  Comment Status  A
Do we have two Table 100-7’s?
"in Table 100-6, Table 100-7, and Table 100-8”

SuggestedRemedy
Perhaps this should be “in Table 100-6, Table 100-7, and Table 100-8”.

Response  Response Status  C
ACCEPT.

Cl 100  SC 100.3.1  P 101  L 45  # 3071
Remein, Duane  Huawei Technologies

Comment Type  T  Comment Status  A
Review
What does it mean to mute? This is the only place this term is used in the draft.
Also this reads like a requirement not a test as I would expect in a section on parameter definitions & measurement methods.

SuggestedRemedy
Change the title of 100.3.1 to “CLT RF output port muting for test purposes”
Add an editors note that we need to add a definition of what muting means, and add a provisionable variable and Cl 45 register control bit to place the RF port in the muted test state.
(OR AIP and do all this stuff).

Response  Response Status  C
ACCEPT IN PRINCIPLE.
Replace the first para with an added variable
CLT_TxMute
TYPE: boolean
When this variable is set to TRUE the CLT shall set the RF output port ≥ 73 dBC below the operationally configured aggregate power of the RF modulated signal, in every 6 MHz channel from 54 MHz to 1218 MHz. When set to FALSE the CLT is in it's normal operating state.

Add CLT Tx Mute to Cl 45 1.1901
Add to variable mapping table

Cl 100  SC 100.1  P 70  L 5  # 3072
Remein, Duane  Huawei Technologies

Comment Type  T  Comment Status  A
Review
Need table for variable mapping to Cl 45 registers.

SuggestedRemedy
Add section 100.1.5 per remein_3bn_14_0115.pdf (available in framemaker).

Response  Response Status  C
ACCEPT.
<table>
<thead>
<tr>
<th>Cl</th>
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<th>P</th>
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<td></td>
<td>Should not include a ref to Cl 45 in a normative statement nor refer to CL 45 registers as variables. &quot;the CLT shall update the value of the variable DS_DataRate (see 45.x.x.x.).&quot; Same issue in ln 33</td>
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<td><strong>SuggestedRemedy</strong> remove cl 45 ref.</td>
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<td>Figure 101-XX illustrates the details of the 10GPASS-XR CNU burst structure. In particular, this figure shows the details of the necessary burst elements and the FEC protected portions of the burst transmission, explicitly showing each FEC codeword (FEC CW). Editor's Note (to be removed prior to publication): Figure is currently missing</td>
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<td><strong>SuggestedRemedy</strong> see remein_3bn_15_0115.pdf for figure. Update reference and remove Ed Note.</td>
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<td>PMA_CLK is set on neg edge of the pma cloak but when is it reset?</td>
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<td></td>
<td><strong>SuggestedRemedy</strong> Add: This variable is reset to FALSE upon read. Also change &quot;This Boolean is true on every negative edge&quot; to &quot;This Boolean is set to TRUE on every negative edge&quot;</td>
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<td>The value of M in Equation (101–4) is kept as a parameter that can be adjusted by the CLT. We need to add this as a formal variable and include in Cl 45.</td>
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<td><strong>SuggestedRemedy</strong> Replace &quot;M&quot; with CntPltSF Add section 101.4.3.5.5 Variables with definition of CntPltSF Add mapping of variable to Table 101-1 Add mdio variable to register 1.1900.9:3 All changes summarized in remein_3bn_16.pdf</td>
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<td>ACCEPT IN PRINCIPLE. Correct file name is remein_3bn_16_0115.pdf In Definition of CntPltSF (pg 77 in 9 change 6-bit to 7-bit)</td>
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<td>The CLT shall follow Step 1 through Step 6 and Step 8 Should be 1-8</td>
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<td><strong>SuggestedRemedy</strong> Change to read :The CLT shall follow Step 1 through Step 8:</td>
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</table>

**Note:** The table entries include comments and responses related to the IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments.
Comment Type  T  Comment Status  A

How can you time interleave a single symbol?
“The CLT first applies a time interleaver to an OFDM symbol worth of NI (see Equation (101–10)) subcarriers for the single IDFT to get a new set of NI subcarriers. The CLT then subjects these NI subcarriers to frequency interleaving.”

SuggestedRemedy
Change to:
The CLT first applies a time interleaver to all NI subcarriers (see Equation (101–10)) in a group of DS_TmIntrlv OFDM symbols. The CLT then subjects these reordered NI x DS_TmIntrlv subcarriers to frequency interleaving.

Add DS_TmIntrlv to table 101-1
DS time interleaving | DS OFDM control | 1.1907.10:7 | DS_TmIntrlv | 7 | 10:7

Add definition for DS_TmIntrlv
DS_TmIntrlv
TYPE: Integer
This variable determines the number of symbols in the downstream time interleaver. The value of TmIntrlv is between 1 and 32 inclusive.

Response  ACCEPT.

Response Status  C

Comment ID 3086
Page 42 of 66
1/14/2015  9:28:05 PM
The following statement should only refer to frequency interleaving:
"The CLT shall frequency interleave the OFDM symbols after the OFDM symbols have been time interleaved. The CLT shall not interleave continuous pilots, excluded subcarriers, or the subcarriers of the PHY Link."

Suggested Remedy
Change to read:
"The CLT shall perform frequency interleaving after time interleaving; subcarriers containing continuous pilots, excluded subcarriers, or PHY Link data are not frequency interleaved."

Response
ACCEPT.

The following statement is inconsistent:
"Although ND and NS are not the same for every symbol, the value of NI is a constant for all OFDM symbols in a given system configuration."

Suggested Remedy
Change to read:
"Although ND and NS are not the same for every symbol, the value of NI is a constant for all OFDM symbols in the downstream frame for a given system configuration."

Note that "are" in "NS are" should not be italics.

Response
ACCEPT IN PRINCIPLE.

Restructure the first 11 rows of these to table per remein_3bn_18_0115.pdf (avail in framemaker). Summary of changes:
Table 100-2
Row 1 - mod wording
Row 2 - add Signal Type
Row 5 - add Occupied spectrum
Row 6 - add Active spectrum (was row 7 Max Num of data SC per FFT)
Row 7 - wording (was OFDM Symbol rate FFT Duration)
Row 10 - added Sampling rate
Row 11 - was row 9
Table 100-10
Row 1 - wording
Row 3 - was Max OFDMA channel BW
Row 4 - add Encompassed spectrum
Row 5 - was Min occupied spectrum
Row 6 - added Active spectrum (was part of FFT size)
Row 7 - was Subcarrier Channel spacing
Row 9 - was FFT Size, 3800 Maximum active SC
Row 10 - was 204 instead of 204.8

Response
ACCEPT.

Table 101–12 is not reference and is included in Tables 100-2 & 100-10 (or at least should be, see separate comment on these)

Suggested Remedy
remove table and subsequent ed note, and note In 24-26.

Response
ACCEPT.
<table>
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<th>Comment ID</th>
<th>Comment Type</th>
<th>Page</th>
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<td>It would be better to introduce DSNrp using wording similar to what was used for DSNcp</td>
</tr>
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<td>Change:</td>
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<td>&quot;The variable DSNrp represents the samples at the start of this N-point IDFT are copied and appended to the end of the IDFT output to give a sequence of length (N+DSNcp+DSNrp):&quot;</td>
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<td>&quot;The variable DSNrp represents the provisioned duration, in OFDM clocks, of the DS windowing parameter (see Table 101-14) for the CLT. The DSNrp samples at the start of the N-point IDFT are copied and appended to the end of the IDFT output to give a sequence of length (N+DSNcp+DSNrp):&quot;</td>
</tr>
<tr>
<td>3092</td>
<td>T</td>
<td>166</td>
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<td>C</td>
<td>The variable DSNrp options are selected from the DS windowing parameter for the CLT (see 45.2.1.108.1).</td>
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<td>No need to ref Cl 45 (we have mapping tables for that). The Req. is stated on pg 167 In 20</td>
</tr>
<tr>
<td>3093</td>
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<td>167</td>
<td>4</td>
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<td>&quot;There is at least one contiguous TBD MHz or greater band of subcarriers with an assigned bit loading in any single 192 MHz OFDM channel.&quot;</td>
</tr>
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<td>The TBD is 10 MHz and rather than referring to these as &quot;assigned bit loading&quot; we should use &quot;Active subcarriers&quot;</td>
</tr>
<tr>
<td>3094</td>
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<td>14</td>
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<td>C</td>
<td>There are at least one contiguous 10 MHz or greater band of active subcarriers in any single 192 MHz OFDM channel.&quot;</td>
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<td></td>
<td>The TBD is 10 MHz and rather than referring to these as &quot;assigned bit loading&quot; we should use &quot;Active subcarriers&quot;</td>
</tr>
</tbody>
</table>

**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  Z/withdrawn  
**Sort Order:** Comment ID
Comment Type  T  Comment Status  A  
Per Table 101-10 this TBD s/b 190 MHz

SuggestedRemedy  
Change row to read: Maximum OFDMA channel encompassed spectrum | 190 MHz

Response  Response Status  C  
ACCEPT.

Comment Type  T  Comment Status  A  
"Note that the complex numbers for the update coefficients values are in the form of I+j×Q where I and Q are both using 16-bit fractional two’s complement notation -s1.14 (sign bit, integer bit, and 14 fractional bits). See 45.x.x.x."
Number format is Q2.14 not s2.14

SuggestedRemedy  
Combine with previous para and reword to:
"The variables EQ_CoefR(k) and EQ_CoefI(k) are updates to the real and imaginary (respectively) coefficient values in the form of I+j×Q where I and Q are both using 16-bit fractional two’s complement notation (Q2.14 format)."

Response  Response Status  C  
ACCEPT IN PRINCIPLE. Shearing format, fractional values -s1.14.

Comment Type  T  Comment Status  A  
"The variables EQ_CoefR(k) and EQ_CoefI(k) are updates to the real and imaginary (respectively) coefficient values in the form of I+j×Q where I and Q are both using 16-bit fractional two’s complement notation (Q2.14 format)."

Response  Response Status  C  
ACCEPT IN PRINCIPLE. 
Should be "frame loss ratio" to meet wording in objective.

Comment Type  T  Comment Status  A  
Number format should be Q2.14 not UQ2.14
Also ref in preceding para at line 29 should be 101.4.4.11 not 101.4.5

SuggestedRemedy  
Change to UQ2.14 update ref.

Response  Response Status  C  
ACCEPT.

Comment Type  T  Comment Status  A  
In Figure 102–20 "US Frame" should be US Superframe

SuggestedRemedy  
Reviewer

Response  Response Status  C  
ACCEPT.

Comment Type  T  Comment Status  A  
Misplaced footnote for table 100-11. Same issues with note to Table 100-12.
Is the Min set point not with respect to 6.4 MHz also?

SuggestedRemedy  
Footnotes should be part of the table.
In Table 100-11 add Footnote Ref 1 to Min set point.

Response  Response Status  C  
ACCEPT.

Comment Type  T  Comment Status  A  
"PER (packet error ratio)" with "packet error ratio" Can make 10-6 not breaking by using ESC n s to designate the "word" as non-breaking changing "-6" to superscript may also work.

SuggestedRemedy  
Replace "PER (packet error ratio)" with "packet error ratio"

Response  Response Status  C  
ACCEPT IN PRINCIPLE.
Cl 102 SC 102.1.3  P 190  L 35 # 3105
Remain, Duane  Huawei Technologies
Comment Type  T  Comment Status  A
Comment
Should we mention Probing as a "signaling type" here?
The upstream PHY Link Message Engine also has the one additional PHY to PHY
signaling types; PHY Discovery Response.
SuggestedRemedy
To:
The upstream PHY Link Message Engine also has the two additional PHY to PHY
signaling types; PHY Discovery Response and Probing.
Response Response Status  C
REJECT.
See comment 3157

Cl 102 SC 102.1.3  P 190  L 41 # 3106
Remain, Duane  Huawei Technologies
Comment Type  T  Comment Status  A
Comment
Does this bit transmission order also apply to PHY Discovery and Probing signaling types?
"Once a PHY Link message block has been created the stream of bytes is converted into a
stream of bits, MSB first, as illustrated in Figure 102–5."
SuggestedRemedy
To:
I don't know.
Response Response Status  C
ACCEPT IN PRINCIPLE.
Add to Pg 217 line 20 "Bit mapping in the PHY Discovery Response is as shown for the
PHY Link in Figure 102-5."

Cl 102 SC 102.1.1  P 188  L 5  # 3103
Remain, Duane  Huawei Technologies
Comment Type  T  Comment Status  A
Comment
the "Fixed number of symbols" in Figure 102–2 is known.
SuggestedRemedy
Change to 256 symbols
Add a 6 symbol block to front of frame labeled Probe Period.
Response Response Status  C
ACCEPT.

Cl 102 SC 102.1.3  P 190  L  9  # 3102
Remain, Duane  Huawei Technologies
Comment Type  T  Comment Status  A
Comment
This was changed recently; "In a multi OFDM channel PHY each OFDM channel has a
PHY Link."
SuggestedRemedy
"In a multi OFDM channel PHY only OFDM channel one has a PHY Link."
Response Response Status  C
ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

Cl  102 SC 102.2.1.1 P 196 L 36 # 5107
Remain, Duane Huawei Technologies

Comment Type T Comment Status A Review

What about scattered pilots?
"No additional continuous pilots are allowed within ..."

SuggestedRemedy
change to
"No additional pilot tones are allowed within ..."

Response Response Status C
ACCEPT IN PRINCIPLE.
Change
"No additional continuous pilots are allowed within this 6 MHz band (see 101.4.3.5)"
to
"No additional continuous pilots are allowed within this 6 MHz band (see 101.4.3.5). However, scattered pilots are allowed in this spectrum in subcarrier that normally carry MAC data."

Cl  102 SC 102.2.2 P 199 L 28 # 5108
Remain, Duane Huawei Technologies

Comment Type T Comment Status A

This statement regarding the preamble should be normative.
The downstream Preamble is a fixed pattern of 64 bits that fill the first eight symbols of the PHY Link frame.

SuggestedRemedy
Change to:
The downstream Preamble shall be a fixed pattern of 64 bits as illustrated in Table 102–4, modulated using binary phase-shift keying (BPSK), that fill the first eight symbols of the PHY Link frame.

Add to end of para
Detection of the PHY Link is the first action a CNU must take to join an EPoC network.
Reword next para from:
"The CLT shall modulate the subcarriers in the DS PHY Link preamble (the first eight symbols in the PHY Link frame) using binary phase-shift keying (BPSK), as shown in Table 102–4 and map each of the binary bits shown to a BPSK constellation point in the complex plane using the following transformation:"
to:
"The CLT maps each of the binary bits shown in Table 102–4 to a BPSK constellation point in the complex plane using the following transformation:"

Response Response Status C
ACCEPT.
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment Type</th>
<th>Comment Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>3111</td>
<td>T</td>
<td>A</td>
</tr>
<tr>
<td>3112</td>
<td>T</td>
<td>A</td>
</tr>
<tr>
<td>3113</td>
<td>T</td>
<td>A</td>
</tr>
<tr>
<td>3114</td>
<td>T</td>
<td>A</td>
</tr>
<tr>
<td>3115</td>
<td>T</td>
<td>A</td>
</tr>
</tbody>
</table>

Cl 102 SC 102.2.6.3
P 207 L 35
Remain, Duane
Huawei Technologies

Comment Type: T
Comment Status: A

We should be clear which FEC codeword we are referring to.

“This variable represents the beginning of the first FEC codeword in the current downstream PHY link frame as described in 102.2.3.5”

Suggested Remedy

Change
first FEC codeword
to
first MAC data FEC codeword

Response

Response Status: C
ACCEPT.

Cl 102 SC 102.2.6.7
P 210 L 1
Remain, Duane
Huawei Technologies

Comment Type: T
Comment Status: A

Update to Figure 102-16

Suggested Remedy

See text and figure from remein_3bn_19_0515.pdf for section 102.2.6

Response

Response Status: C
ACCEPT.

Cl 102 SC 102.3.1.2
P 211 L 14
Remain, Duane
Huawei Technologies

Comment Type: T
Comment Status: A

We should have a normative statement on what modulation types are allowable for the US PHY Link.

“The US PHY Link may use any of the modulation formats listed under PHY Link CNU Tx/CLT Rx in Figure 100–1.”

Suggested Remedy

change may to shall

Response

Response Status: C
ACCEPT.

Cl 102 SC 102.3.5.7
P 215 L 1
Remain, Duane
Huawei Technologies

Comment Type: T
Comment Status: A

Review

Update for SD Figure 102–18

Suggested Remedy

See text and figure from remein_3bn_19_0115.pdf section 102.3.5

Response

Response Status: C
ACCEPT.

Cl 102 SC 102.4
P 215 L 40
Remain, Duane
Huawei Technologies

Comment Type: T
Comment Status: A

While we describe PHY Discovery we have no description of wideband probing.

Suggested Remedy

Add:
While an EPoC network is in operation, periodic verification of the CNUs OFDMA timing is needed to ensure orthogonally. This is accomplished using wideband probing. Wideband probing is also used during the PHY Discovery process to fine tune the timing of CNUs joining the network.

Response

Response Status: C
ACCEPT IN PRINCIPLE.
Orthogonally s/b orthogonality

Cl 102 SC 102.4.1.1
P 215 L 46
Remain, Duane
Huawei Technologies

Comment Type: T
Comment Status: A

We removed Fine Ranging in name only, we now use Wideband Probing for this purpose.

The PHY Discovery process is composed of: PHY Link acquisition, PHY Discovery window opening, PHY Discovery response, and CNU_ID Allocation.

Suggested Remedy

Add:

The PHY Discovery process is composed of: PHY Link acquisition, PHY Discovery window opening, PHY Discovery response, CNU_ID Allocation, and Wideband Probing.

Response

Response Status: C
ACCEPT.
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Page 49 of 66</th>
</tr>
</thead>
</table>

1. **Comment ID 3117**

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

**Comment**: The following statement is not quite true. PHY Disc response is contained in 128 SC's.

*The PHY Discovery Response shall include a spectrum of 128 contiguous subcarriers ...“*

**Suggested Remedy**:  
"The PHY Discovery Response shall be contained in a spectrum of 128 contiguous subcarriers ...

**Response**: ACCEPT.

2. **Comment ID 3118**

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

**Comment**: For consistency we should refer to these opportunities as windows

*“Each CNU selects a random number of Discovery response opportunities it waits before transmitting the PHY Discovery Response.”*

**Suggested Remedy**:  
Each CNU selects a random number of PHY Discovery windows it waits before transmitting the PHY Discovery Response.

**Response**: ACCEPT.

3. **Comment ID 3119**

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

**Comment**: Fig 102-15  
32b should be 64b  
MAC1 should just be MAC

**Suggested Remedy**:  
Per comment

**Response**: ACCEPT.

4. **Comment ID 3120**

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

**Comment**: When adding the SD we included a CRC with the PHY Discovery Response.

*"only data included is the CNU MAC address"*

**Suggested Remedy**:  
"only data included is the CNU MAC address protected by a CRC(32)."

**Response**: ACCEPT.

5. **Comment ID 3121**

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

**Comment**: Figure 102–21 NCP & NRP should be US_Rcp & US_Nrp resp.

**Suggested Remedy**:  
Update figure  
Reword:

*“This duplication is accomplished by duplicating the time domain samples at the output of the iFFT in the upstream data path for these signals, and adding cyclic prefix and windowing as illustrated in Figure 102–21.”*

**Response**: ACCEPT IN PRINCIPLE.

*Note another comment changed US_TmIntrlv to US_Rbsize*
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Page</th>
<th>Type</th>
<th>Comment Status</th>
<th>Response Status</th>
<th>Comment</th>
<th>Suggested Remedy</th>
<th>Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>3122</td>
<td>219</td>
<td>T</td>
<td>A</td>
<td>C</td>
<td>3122</td>
<td>Variable names for MAC address are incorrect. Also the way we've specified read instructions they don't include data so the MAC address cannot be included in a read.</td>
<td>Change variable names to NewCNU_MAC0 through NewCNU_MAC2 Change Read to Write</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3123</td>
<td>221</td>
<td>T</td>
<td>A</td>
<td>C</td>
<td>3123</td>
<td>This SD needs to be aligned to the EPCH added in the last round.</td>
<td>See updated text and figure in remein_3bn_19_0115.pdf section 102.4.1.7 Can we get rid of the TBD?</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3124</td>
<td>221</td>
<td>T</td>
<td>A</td>
<td>C</td>
<td>3124</td>
<td>EDITORS NOTE (to be removed prior to publication): should we include an item in the above list for fine ranging (or whatever we decide to call it now that we don’t have fine ranging)?</td>
<td>3) Upstream fine tuning. During CNU bring up the CLT can use wideband probing to fine tune the new CNU to the upstream OFDMA frame and superframe. Remove the note.</td>
<td>ACCEPT IN PRINCIPLE.</td>
</tr>
<tr>
<td>3125</td>
<td>222</td>
<td>T</td>
<td>A</td>
<td>C</td>
<td>3125</td>
<td>This is confusing: “When this CNU_ID is contained in this set of variables the CNU is allowed to transmit …”</td>
<td>When the value of the CNU_ID of the CNU is contained in this set of variables the CNU is allowed to transmit …</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3126</td>
<td>223</td>
<td>T</td>
<td>A</td>
<td>C</td>
<td>3126</td>
<td>In these examples it would be better to include the proper variable names for symbol ID. “1) Allocate a specific probing symbol to a single CNU.” “1) Allocate the same probing symbol at any given time to more than one CNU.”</td>
<td>Change to: “1) Allocate a specific probing symbol to a single CNU using StrtSym and SymNum.” (in 2x) “1) Allocate the same probing symbol at any given time to more than one CNU using StrtSym and SymNum.”</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>3127</td>
<td>225</td>
<td>T</td>
<td>A</td>
<td>C</td>
<td>3127</td>
<td>This this is confusing: “When this CNU_ID is contained in this set of variables the CNU is allowed to transmit …”</td>
<td>“When the value of the CNU_ID of the CNU is contained in this set of variables the CNU is allowed to transmit …”</td>
<td>ACCEPT.</td>
</tr>
</tbody>
</table>

**Comment ID:** 3127  
**Page:** 50 of 66  
**TYPE:** TR/technical required  
**COMMENT STATUS:** D/dispatched A/accepted R/rejected  
**RESPONSE STATUS:** O/open W/written C/closed Z/withdrawn  
**SORT ORDER:** Comment ID
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

**Comment 3128**

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

A reasonable restriction on StrtSym & SymNum is that their sum be \( \leq 6 \)

**Suggested Remedy:**

Add the following to the description of both variables:

“The sum of StrtSym and SymNum is less than or equal to six.”

**Response:**

ACCEPT.

**Comment 3129**

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

In Fig 102-28 exit statement for WAIT FOR PROBE SYM “PrbID” should be “ActPrbID”

**Suggested Remedy:**

per comment

**Response:**

ACCEPT.

**Comment 3130**

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

Figure 100-3 includes a “PROBE GENERATOR” block but this would more properly be in the PHY Link block.

See related comment against Figure 102-4

**Suggested Remedy:**

Remove block from Fig 100-3

**Response:**

ACCEPT.
Comment Type T  Comment Status A  Review

New CNU Range units need to be defined. We have two obvious options:

TQ (16 ns or 1047.576 us max)
or

OFDM clock (1/204.8MHz or 319 us max)

Also should refer to register bits not name.

SuggestedRemedy

use OFDM Clock.
Change from

The New CNU Range bits are an integer that indicates the range of the CNU

(corresponding to Allowed CNU_ID (see 102.4) in units of TBD).

to

Register bits 1.1916.15 through 1.1916.0 form an integer indicating range of the CNU

(corresponding to Allowed CNU_ID (see 102.4) in units of OFDM clock (1/204.8 MHz).

Remove "(in TBD)" from table 45-78I

Response  Response Status C

ACCEPT.

Response  Response Status C

ACCEPT.

Comment Type T  Comment Status A  Review

EDITORS NOTE (to be removed prior to publication): we need a way to copy the active

profile copy to the inactive profile. This would affect these registers.

SuggestedRemedy

Remove note and add text to the draft per remain_3bn_13_0115.pdf

Response  Response Status C

ACCEPT.
No longer need 4 bits to specify US time interleaver.

**Suggested Remedy**

In Table 45-78d
change 1.1907.15:11 to 1.1907.15:8
change 1.1907.10:7 to 1.1907.7

Change
Register bits 1.1907.10 through 1.1907.7 indicate the integer number of time interleaved OFDM symbols in the upstream direction. The number is either 8 or 16; where bit 1.1907.7 is the LSB and bit 1.1907.11 is the MSB. All other values are reserved.

To
Register bit 1.1907.7 indicates the number of time interleaved OFDM symbols in the upstream direction. When this bit is set to a zero 8 symbols are time interleaved. When this bit is set to a one 16 symbols are interleaved.

In Table 101-1
Change 1.1907.10:7 to 1.1907.7 and in the same row 10:7 to 7

**Response**

ACCEPT IN PRINCIPLE.

This is now the US RB Size (which is only 8 or 16).

In Table 45-78d
change 1.1907.15:11 to 1.1907.15:8
change 1.1907.10:7 to 1.1907.7

Change
Register bits 1.1907.10 through 1.1907.7 indicate the integer number of time interleaved OFDM symbols in the upstream direction. The number is either 8 or 16; where bit 1.1907.7 is the LSB and bit 1.1907.11 is the MSB. All other values are reserved.

To
Register bit 1.1907.7 indicates the number of time interleaved OFDM symbols in a Resource Block in the upstream direction. When this bit is set to a zero there are 8 symbols per Resource Block. When this bit is set to a one there are 16 symbols per Resource Block.

In Table 101-1
Change 1.1907.10:7 to 1.1907.7 and in the same row 10:7 to 7

Change names to RB Size (CI 45) and RBsize (elsewhere)
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

Comment ID: 3139

Cl 100 SC 100.2.8.1 P 80 L 52 # 8139
Remein, Duane Huawei Technologies

Comment Type T Comment Status A
Duplicate text (see 1st sentence in same para):
"The encompassed spectrum is also equal to the center frequency of the highest frequency modulated subcarrier minus the center frequency of the lowest frequency modulated subcarrier in an OFDM channel, plus the subcarrier spacing."

SuggestedRemedy
Strike last sentence.
Move para to just after the NOTE on pg 80 ln 44 (better text flow).
Response Response Status C
ACCEPT IN PRINCIPLE.
See response in Comment 2745

Comment ID: 3140

Cl 100 SC 100.2.8.1 P 81 L 1 # 8140
Remein, Duane Huawei Technologies

Comment Type T Comment Status A
This note has been here long enough.
EDITORS NOTE (to be removed prior to publication): 802.3 prefers spectrum, and where bandwidth means data capacity. Do we need to change bandwidth to spectrum? Note that in cable industry bandwidth = RF spectrum.

SuggestedRemedy
Strike the note.
Change all (20) instances of occupied bandwidth to occupied spectrum
Change all (2) instances of Occupiedbandwidth to Occupiedspectrum
Response Response Status C
ACCEPT.

Comment ID: 3141

Cl 100 SC 100.2.9.1 P 88 L 22 # 8143
Remein, Duane Huawei Technologies

Comment Type T Comment Status A
To which of the three dashed arrows does this refer to?
pointed to by the dashed arrow of Figure 100-6
At line 28 we refer to a dotted arrow which does not exist

SuggestedRemedy
change to "as illustrated in Figure 100-6"
Response Response Status C
ACCEPT.
Cl 100 SC 100.2.9.1 P 88 L 18 # 3144
Remain, Duane Huawei Technologies

Comment Type T Comment Status A Review
This ref can be provided and we should probably refer to the proper variable name.

SuggestedRemedy
Change to:
32 8-symbol Resource Blocks, or 16 16-symbol Resource Blocks, as configured by US_TmIntrlv (see 101.4.4.3).

Response Response Status C
ACCEPT IN PRINCIPLE.
Change to CL 0
Change "US_TmIntrlv" to US_RBsize.
In Cl 45 make appropriate change to register 1.1907.10:7

Cl 100 SC 100.2.9.1 P 88 L 23 # 3145
Remain, Duane Huawei Technologies

Comment Type T Comment Status D
NFFT should be subscripted (or not)

SuggestedRemedy
Make the text match the figure.

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

Suggest: subscript in line 23.

Cl 100 SC 100.2.9.1 P 88 L 35 # 3146
Remain, Duane Huawei Technologies

Comment Type T Comment Status A Review
Dimension arrow for NFFT missing

SuggestedRemedy
Add dimension arrow

Response Response Status C
ACCEPT IN PRINCIPLE.
See comment 2773

Cl 100 SC 100.2.9.2 P 88 L 51 # 3147
Remain, Duane Huawei Technologies

Comment Type T Comment Status A Review
What is meant by "fully Granted"?

SuggestedRemedy
Change from:
The channel power is defined as the average power when the channel is fully granted.
to:
The channel power is defined as the average power that would be measured if an entire OFDMA symbol were granted to a single CNU.

Response Response Status C
ACCEPT IN PRINCIPLE.
Change from:
The channel power is defined as the average power when the channel is fully granted.
to:
The channel power is defined as the average power when all active subcarriers in an OFDMA symbol are granted to the CNU.

Cl 100 SC 100.2.9.4 P 89 L 31 # 3148
Remain, Duane Huawei Technologies

Comment Type T Comment Status A
The CNU only has one "mode": In OFDMA mode the CNU

SuggestedRemedy
Strike the phrase.

Response Response Status C
ACCEPT IN PRINCIPLE.
Remedy not completely clear. Suggest changing sentence read "The CNU determines its target transmit normalized channel power P1.6t, as follows:"

Cl 100 SC 100.2.9.1 P 88 L 18 # 3144
Remain, Duane Huawei Technologies

Comment Type T Comment Status A Review

SuggestedRemedy

Response Response Status C
ACCEPT IN PRINCIPLE.
See comment 2773

Comment ID 3148 Page 55 of 66
1/14/2015 9:28:05 PM
This sentence starting with "Spurious emissions requirements for transmission ..." and ending on line 20 with "specified in Table 100-7 for Table 100-7" is rather clumsy.

Reword as follow to avoid the split across Eq 100-20
The spurious emissions requirements over the entire upstream spectrum given in Table 100-7 for transmission of NS_Max / 10 or fewer subcarriers may be relaxed by 2 dB in an amount of spectrum equal to:

ACCEPT IN PRINCIPLE.
Per comment also change "Table 100-7 for Table 100-8".

Equations 100-26 & 100-26 include units (in an obviously different font). The equation shouldn't include these.

Remove "(dB)" from both equations in 3 places)
At line 23 change
"MER per RB is computed as follows:"
to
"MER per RB (RBMER, in dB) is computed as follows:"  {MER in RBMER is subscripted}
In line 31 change
"MER per burst is computed as follows:"
to
"MER per burst (BURSTMER, in dB) is computed as follows:"  {MER in BURSTMER is subscripted}
Change font in both equations as some portions (10log10 and 1/) look to be in a different font.

ACCEPT.

Comment Type: T  Comment Status: A  Review

The CNU shall control spurious emissions prior to and during ramp-up, during and following ramp-down, and before and after a burst.

Sounds like all the time to me.

Change to:
The CNU shall control spurious emissions at all times.

ACCEPT.

The CNU shall control spurious emissions at all times.

REJECT.
This comment was WITHDRAWN by the commenter.

Make sure this is ok with the experts.

Normative statements should not be left up to the test tech.
"A sufficient number of OFDMA symbols shall be included in the time average so that ..."

Change to:
"A sufficient number of OFDMA symbols should be included in the time average so that ..."

ACCEPT.

ACCEPT.
CI 100 SC 100.2.9.5.1 P 91 L 8 # 3153
Remain, Duane Huawei Technologies

Comment Type T Comment Status A
definition of "granted burst"
"For the purpose of spurious emissions definitions, a granted burst refers to a burst of resource blocks to be transmitted at the same time from the same CNU;" So successively transmitted OFDM symbols are not part of the same burst? Note that the term is only used twice in the draft here and in 100.2.9.5.1 MER Requirements.

SuggestedRemedy
Remove "granted" from definition in both cases

Response Response Status C
ACCEPT IN PRINCIPLE.
Not sure how removing the word "granted" remedies the question in the comment.

CI 100 SC 100.2.9.6.2 P 96 L 6 # 3154
Remain, Duane Huawei Technologies

Comment Type T Comment Status A
I believe the "following MER limits" are those in Table 100-9. Should ref the table.

SuggestedRemedy
Change to "MER limits in Table 100-9"

Response Response Status C
ACCEPT.

CI 100 SC 100.2.10.1 P 97 L 45 # 3155
Remain, Duane Huawei Technologies

Comment Type T Comment Status A
Misguided requirement: "shall operate with an average input signal level, including ingress and noise to the upstream demodulator, up to 31 dBmV."
So then at 31.1 dBmV and higher the CNU must not operate?

SuggestedRemedy
Change "up to 31 dBmV" To "of 31 dBmV or better"

Response Response Status C
ACCEPT IN PRINCIPLE.
Change to "… up to 31 dBmV. Operation above this level is not specified."

CI 102 SC 102.1.2 P 189 L 3 # 3157
Remain, Duane Huawei Technologies

Comment Type T Comment Status A
Review
Figures 102-3 and 102–4 needs a clearer representation of Probe and PHY Discovery receiver/generator

SuggestedRemedy
Replace with figures in remain_3bn_19_0515.pdf section 102.4.2.6

Response Response Status C
ACCEPT IN PRINCIPLE.
Add editors note at top of Cl 102 that Probe processing needs to be pulled out of the PHY Link.

CI 102 SC 102.4.1.6 P 219 L 19 # 3158
Remain, Duane Huawei Technologies

Comment Type T Comment Status A
Duplicate requirements. TEXT: To allocate the CNU_ID the CLT shall use the CNU_ID Allocation message … AND: These parameters shall be transmitted to the CNU via the CNU_ID Allocation instruction

SuggestedRemedy
Change the second requirement to: These parameters are transmitted to the CNU via the CNU_ID Allocation instruction.

Response Response Status C
ACCEPT.
### Cl 103 SC 103.3.5 Gate
#### Comment Type: T  Comment Status: A
I believe this phrase was added to accommodate TDD and should be removed: “and the DA field differs from the local address of the CLT”

**Suggested Remedy:**
remove the phrase

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

**ACCEPT.**

### Cl 103 SC 103.3.3
#### Comment Type: T  Comment Status: A
PIC OM3 points to this section but there is no shall in the section. Cl 77 excludes the shall while cl 64 includes it. TEXT: Each CNU waits a random amount of time before transmitting the REGISTER_REQ MPCPDU that is shorter than the length of the discovery window.

**Suggested Remedy:**
Change to: Each CNU shall wait a random amount of time before transmitting the REGISTER_REQ MPCPDU that is shorter than the length of the discovery window.

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

**ACCEPT.**

### Cl 103 SC 103.3.6.2
#### Comment Type: T  Comment Status: A
PIC MP7 points to this section but there is no shall in the section. Both Cl 77 and 64 exclude the shall. TEXT: CNUs issue REPORT messages periodically in order to maintain link health at the CLT as defined in 103.3.4.

**Suggested Remedy:**
Change to: ONU shall issue REPORT messages periodically in order to maintain link health at the OLT as defined in 77.3.4.

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

**ACCEPT.**

### Cl 102 SC 102.1
#### Comment Type: TR  Comment Status: A
Need a high level requirement that states the CLT and CNU support both US and DS PHY Link

**Suggested Remedy:**
Add the following as the second sentence of this section: “The CLT and the CNU shall support both an upstream and a downstream PHY Link channel.”

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

**ACCEPT.**

### Cl 102 SC 102.3.4
#### Comment Type: TR  Comment Status: D
We haven't specified what the data pattern for these PHY Link pilots are.

**Suggested Remedy:**
Add an Ed note that the data pattern for these US Pilots is needed.

**Proposed Response**
**Response Status: Z**

**REJECT.**

This comment was WITHDRAWN by the commenter.

It would be better to resolve this during the meeting.
Comment ID 3165

Comment Type TR

Comment Type TR

Comment Status A

Cl 45 SC 45.2.7a P 48 L 15 # 3165

Remein, Duane Huawei Technologies

We currently only have sufficient registers defined for a single 4k OFDM channel in both US and DS but we have up to 5 such channels. A way is needed to set the OPFD parameters for each channel.

SuggestedRemedy

for each OFDM register set, define the register that would apply to the lowest SC or SC’s to use as a channel designator and hand-shaking flags.

Response

Response Status C

ACCEPT IN PRLNCE.

See remein_3bn_23_0115.pdf

Comment Status A

Response Status C

Review

Comment ID 3166

Comment Type E

Comment Status A

Cl 103 SC 103.3.6.2 P 287 L 2 # 3166

Remein, Duane Huawei Technologies

Shall with no PIC statement. The following statement has no PICS statement. TEXT: The reported length shall be adjusted and rounded up to the nearest time_quantum to account for the necessary inter–frame spacing and preamble. FEC parity overhead is not included in the reported length.

This problem exists in Cl 77 also.

SuggestedRemedy

Editor to coordinate resolution with maintance and apply a similar resolution as that accepted in P802.3bx Suggested remedy there is:

Add PICS

MP8a | 77.3.6.2 | REPORT Queue #n length roundeing | ONU:M | Yes[]

Response

Response Status C

ACCEPT.

Comment Status A

Response Status C

Review

Comment ID 3167

Comment Type E

Comment Status A

Cl 100 SC 100.2.9.3 P 89 L 9 # 3167

Remein, Duane Huawei Technologies

Font size for Eq 100-13 & 100-14 looks small. Check to make sure these are med size equations and not small.

SuggestedRemedy

per comment

Response

Response Status C

ACCEPT.

Comment Status A

Response Status C

Review

Comment ID 3168

Comment Type E

Comment Status A

Cl 100 SC 100.2.9.5.1 P 90 L 33 # 3168

Remein, Duane Huawei Technologies

Stray DOCSISisms "modem" in 3 places

SuggestedRemedy

change to CNU

Response

Response Status C

ACCEPT.

Editor self comment: "oops!"

Comment Status A

Response Status C

Review

Comment ID 3169

Comment Type E

Comment Status A

Cl 100 SC 100.2.9.5.1 P 90 L 49 # 3169

Remein, Duane Huawei Technologies

We do not do specs (little bits of things). We do specifications

SuggestedRemedy

Change specs to specifications in 4 places.

Response

Response Status C

ACCEPT.

Comment Status A

Response Status C

Review

Comment ID 3170

Comment Type E

Comment Status A

Cl 100 SC 100.2.9.6 P 94 L 46 # 3170

Remein, Duane Huawei Technologies

"TxMER or just MER"

Given that TxMER only appears here do we even need to mention it?

SuggestedRemedy

Strike "TxMER or just "

Response

Response Status C

ACCEPT IN PRLNCE.

change TxMER to transmit MER

100.2.9.6 MER requirements
to

100.2.9.6 Transmit MER requirements

Response

Response Status C

ACCEPT.

Comment Status A

Response Status C

Review
Comment ID 3175
Page 60 of 66

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 Z/withdrawn
SORT ORDER: Comment ID

IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

Approved Responses

Response #3171

Cl 100 SC 100.2.9.6.1 P 95 L 40
Remain, Duane Huawei Technologies

Comment Type E Comment Status A
Para style incorrect; should use an indented para style (appears to use T.text.

Suggested Remedy
Use same indented para style (suggest H.HangingIndent) for all eq parameter definitions in 39-48.

Response Response Status C
ACCEPT.

Response #3172

Cl 100 SC 100.2.9.6.2 P 96 L 13
Remain, Duane Huawei Technologies

Comment Type E Comment Status A
Table style should be per IEEE style.

Suggested Remedy
Separate into 3 col; Parameter | Value | Units
all words in parameter
numbers in value
units in units
notes per IEEE Style in template

Response Response Status C
ACCEPT.

Response #3173

Cl 100 SC 100.2.9.7 P 97 L 1
Remain, Duane Huawei Technologies

Comment Type E Comment Status A
Table continuation missing

Suggested Remedy
Add Table Continuation variable to table title.

Response Response Status C
ACCEPT.

Response #3174

Cl 00 SC 0 P 1 L 1
Remain, Duane Huawei Technologies

Comment Type ER Comment Status A
Update Copyright date to 2015

Suggested Remedy
per comment

Response Response Status C
ACCEPT.

Response #3175

Cl 100 SC 100.2.8.5 P 85 L 13
Remain, Duane Huawei Technologies

Comment Type ER Comment Status A
In this section we use a large number of poorly defined terms. We can define them now or wait until someone from the WG asks for the definitions of these terms:
OFDM channel - here we have a definition in CL 1 but it could equally apply to multiple 192 MHz OFDM Channels
OFDM Channels - prefixed with a number of qualifiers; active, modulated, contiguous, non-contiguous, maybe others
Neq - not defined (as noted in Ed Note)
Neq' - not defined (as noted in Ed Note)
gap spectrum - not defined
subband - not defined
sub-block (contiguous & non-contiguous) - not defined
measurement channel, measurement band (I guess these are different but how?)
N' - know how to calculate this but what is it?
commanded channel, harmonic channel, active channel, ...
transmit channel - not defined
isolated channel - sort of defined

Suggested Remedy
Add an Editors note at the minimum that the wording in this section needs cleaning up and clarifying.

Response Response Status C
ACCEPT IN PRINCIPLE.
Page 80, Line 29. Move editor’s note to be under 100.2.8 and not under 100.2.8.1. Was put in the wrong place for D1.2.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

**Response: #3176

Cl 100 SC 100.2.9.5.3 P 93 L 10 # 3176

Remain, Duane Huawei Technologies

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

Firstly it should be noted that Table 100-7 is different than Table 100-7. Wow that's gotta be difficult.

**Suggested Remedy:**

Check all xrefs in para and correct as necessary. In order should probably be Table 100-8, Table 100-7, Table 100-8, Table 100-7

**Response: Response Status:** C

ACCEPT IN PRINCIPLE.

Editors oops from text considered for D1.2. The first "Table 100-7" should read "Table 100-8" to produce: "Firstly, it should be noted that the measurement bandwidth for Table 100-8 is less than the measurement bandwidths in Table 100-7."

**Comment: #3177

Cl 100 SC 100.2.10.1 P 97 L 50 # 3177

Remain, Duane Huawei Technologies

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

We have no Table 7-12

"When using the modulation formats shown in Table 100-11, the CLT Upstream demodulator shall operate within its defined performance specifications with received bursts within the ranges defined in Table 7-12 of the set power."

**Suggested Remedy:**

Change to read

"When using the modulation formats and power set points shown, the CLT Upstream demodulator shall operate within its defined performance specifications when received bursts are within the ranges specified in Table 100-11."

**Response: Response Status:** C

ACCEPT.

**Comment: #3178

Cl 100 SC 100.2.10.1 P 98 L 3 # 3178

Remain, Duane Huawei Technologies

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

Range of what? How about a units to this number?

**Suggested Remedy:**

Change "Range" to "Input power range (dBmV)"

**Response: Response Status:** C

ACCEPT. Add units "dB"

**Comment: #3179

Cl 100 SC 100.2.11.1 P 99 L 36 # 3179

Remain, Duane Huawei Technologies

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

Table 100-13 mixes receiver characteristic and input signal characteristics. These should be in separate tables. It is also not at all clear to me why there are three lines for Return Loss. Lastly I don't think we go to 6754 MHz

**Suggested Remedy:**

Split into two tables

1) Electrical input signal requirements (Total power, Input Level Range and Max Avg power)
2) CNU receiver requirements (Input Impedance, Return Loss).

Combine Return Loss into a single row of 108 MHz - 1794 MHz | > 6 | dB and remove notes 1 & 2

Change row 3 from "6754 MHz to 1218 MHz OR From 258 MHz to 1.794 GHz" to "108 MHz to 1218 MHz OR From 258 MHz to 1794 MHz"

Add Table Continuation variable to title.

Change at line 27

"The CNU receiver shall meet electrical parameters per Table 100-13."

to

"The CNU shall meet all performance specification when receiving a signal conformant to the parameters shown in Table 100-13(1). The CNU receiver shall meet electrical parameters per Table 100-13(2)." with appropriate table references

**Response: Response Status:** C

ACCEPT IN PRINCIPLE.

Change at line 27

"The CNU receiver shall meet electrical parameters per Table 100-13."

to

"The CNU shall meet all performance specification when receiving a signal conformant to the parameters shown in Table 100-13(1). The CNU receiver shall meet electrical parameters per Table 100-13(2)." with appropriate table references

In Table

Add table continuation

line 43 change 6754 to 54

line 44 delete "or" from 258 MHz ...

Indent lines 52, 52

pg 100 line 5 delete

Line 52 change note to "a" so it is normative

Add editors note regarding harmonization of DS pass band ranges.
## IEEE 802.3bn EPON Protocol over Coax (EPoC) TF 2nd Task Force review comments

### Approved Responses

<table>
<thead>
<tr>
<th>Comment ID</th>
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<tbody>
<tr>
<td>CI 100 SC 100.2.11.2 P100 L12 #3180</td>
<td>Approved Responses</td>
</tr>
<tr>
<td>Remein, Duane</td>
<td>Huawei Technologies</td>
</tr>
<tr>
<td><strong>Comment Type T</strong></td>
<td><strong>Comment Status A</strong></td>
</tr>
<tr>
<td>Well at least we use the TLA FLR twice :-)</td>
<td></td>
</tr>
<tr>
<td>But we should be consistent</td>
<td></td>
</tr>
<tr>
<td><strong>SuggestedRemedy</strong></td>
<td></td>
</tr>
<tr>
<td>Change &quot;10-6 FLR (frame loss ratio)&quot; to &quot;10-6 packet error ratio when operating at a CNR as shown in Table 100-14, under input load and channel conditions as follows&quot; (observe superscripting).</td>
<td></td>
</tr>
<tr>
<td>At line 18 change &quot;CNU FLR shall be less than or equal to the required loss ratio&quot; to &quot;CNU packet error ratio shall be less than or equal that shown in when operating at a CNR as shown in Table 100-14, under input load and channel conditions as follows&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Response</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Response Status C</strong></td>
<td></td>
</tr>
<tr>
<td>ACCEPT IN PRINCIPLE.</td>
<td></td>
</tr>
<tr>
<td>Should be &quot;frame loss ratio&quot; to meet wording in objective.</td>
<td></td>
</tr>
</tbody>
</table>

| CI 100 SC 100.2.8.1 P80 L51 #3181 | | |
| Victor, Hou | Broadcom |
| **Comment Type T** | **Comment Status A** |
| It says ",the encompassed spectrum is equal to 789.05 - 600.00 +0.050 = 190.00 MHz.," |
| The context of this calculation seems to be missing, in particular where 789.05 or 600.0 MHz comes from. |
| **SuggestedRemedy** |
| Suggested fix: Explain or show additional context to this computation. |
| **Response** |
| **Response Status C** |
| ACCEPT IN PRINCIPLE. |
| See resolution to 2745 |

| CI 100 SC 100.2.8.2 P79 L35 #3182 | | |
| Victor, Hou | Broadcom |
| **Comment Type T** | **Comment Status A** |
| It says: "The upstream PMA OFDMA superframe repeats every 256 + Probe region is 6 symbols. The superframe length is determined using the Extended_OFDM_Symbol based on size of the selected Cyclic Prefix size (usec)." This sentence is not constructed correctly and is confusing. |
| **SuggestedRemedy** |
| Suggested fix: The upstream PMA OFDMA superframe repeats every 256 + 6 symbols, where the Probe region is 6 symbols in length. The superframe length is determined using the Extended_OFDM_Symbol based on size of the selected Cyclic Prefix size (?sec)." |
| **Response** |
| **Response Status C** |
| ACCEPT. |

| CI 100 SC 100.2.8.2 P82 L11 #3183 | Review |
| Laubach, Mark | Broadcom |
| **Comment Type T** | **Comment Status A** |
| In Table 100-2, the "1.5" and "dB" have been found to be erroneous entries when going back and comparing to the latest DOCSIS 104 specification. |
| **SuggestedRemedy** |
| Remove "1.5" and "dB" from this row. |
| **Response** |
| **Response Status C** |
| ACCEPT. |

| CI 100 SC 100.2.8.2 P82 L20 #3184 | | |
| Laubach, Mark | Broadcom |
| **Comment Type T** | **Comment Status A** |
| Editorial mistakes when converting the columns for this table for Draft 1.2 |
| **SuggestedRemedy** |
| Line 20: change subscripts to "1,2,4,5,6,7,11" |
| Lines 23 through 34, remove the "1" superscript |
| Lines 32 through 34, remove the "7,11" superscript |
| **Response** |
| **Response Status C** |
| ACCEPT. |
The PMD service interface needs to be updated to conform to OFDM/OFDMA signal processing - it is not a bit serial interface.

Note: the best place in the path where it is known that there will be non-null output from the IDFT is at the input to the IDFT as received from pilot insertion or from probe insertion functions for PMD_SIGNAL.request

Suggested Remedy

Line 27: Change "The PMD service interface supports the exchange of a continuous stream of bits between the PMA and PMD entities. Bits exchanged across the PMD service interface are organized in TBD." To: "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."

Page 77, Line 1. Change "The semantics of the service primitive are PMD_UNITDATA.request(tx_unit). The data conveyed by PMD_UNITDATA.request is a continuous stream of bits. The tx_bit parameter can take one of two values: ONE or ZERO." To: "The semantics of the service primitive are PMD_UNITDATA.request(I_value, Q_value). The data conveyed by PMD_UNITDATA.request is a continuous stream of I/Q value pairs. Both I_value and Q_value are encoded as 32-bit signed integers."

Page 77, Line 4: Change "The Clause 101 PMA continuously sends the appropriately formatted stream of bits to the Clause 100 PMD for transmission on the medium, at the nominal speed of 204.8 MHz. Upon the receipt of this primitive, the PMD converts the received appropriately formatted stream of I/Q value pairs to the Clause 100 PMD for transmission on the medium, at the nominal speed of 204.8 MHz. Upon the receipt of this primitive, the PMD converts the received appropriately formatted stream of I/Q value pairs into the appropriate signals at the MDI, effectively sending data across the coaxial media." To: "The Clause 101 PMA continuously sends the appropriately formatted stream of I/Q value pairs to the Clause 100 PMD for transmission on the medium, at the nominal speed of 204.8 MHz. Upon the receipt of this primitive, the PMD converts the received appropriately formatted stream of I/Q value pairs into the appropriate signals at the MDI, effectively sending data across the coaxial media."

Page 77, Line 10. Remove Editor's note.

Page 77, Line 15. Change "TBD" to "I/Q value pair"
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Commenter</th>
<th>Category</th>
<th>Comment Status</th>
<th>Review Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>3186</td>
<td>Laubach, Mark</td>
<td>TR</td>
<td>A</td>
<td>It is useful to have QPSK through 32-QAM available for upstream data transmission due to having to adjust bit loading in the 5-20MHz region as well as in subcarriers adjacent to exclusion bands.</td>
</tr>
<tr>
<td>3187</td>
<td>Laubach, Mark</td>
<td>E</td>
<td>A</td>
<td>Space missing.</td>
</tr>
<tr>
<td>3188</td>
<td>Laubach, Mark</td>
<td>T</td>
<td>A</td>
<td>Terminology alignment and edit to match previous decision on number of probe symbols per upstream superframe.</td>
</tr>
<tr>
<td>3189</td>
<td>Laubach, Mark</td>
<td>T</td>
<td>A</td>
<td>In thinking about this, OFDMA is a modulation method that is output by the IDFT and not really the 2D frame component that is the input to the IDFT, which is where the PMA is doing all of its work. The IDFT input is the output of the interleaver which is a two dimensional structure of resource blocks by subcarriers where the QAM bin values are filled in by the symbol mapper and pilot insertion. The suggestion is that the term for these structures should be consistent throughout the clauses. Also, it might be appropriate to add a definition in either Clause 1 or Clause 100/101 for Resource Block Frame (RB Frame), or the accepted consistent term. Looks like &quot;OFDMA Frame&quot; is used inconsistently. Where it is referring to one symbol, need to change to &quot;OFDMA symbol&quot;.</td>
</tr>
</tbody>
</table>

---

**Type:** TR/technical required  
**Comment Status:** D/dispatched  
**Response Status:** C/closed  
**Comment ID:** 3189  
**Page 64 of 66**  
1/14/2015 9:28:05 PM
<table>
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<th>L</th>
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<td>100</td>
<td>100.2.10.2</td>
<td>98</td>
<td>37</td>
<td>3190</td>
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<td>100</td>
<td>100.2.8.2</td>
<td>83</td>
<td>1</td>
<td>3191</td>
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<td>100</td>
<td>100.1.3</td>
<td>73</td>
<td>31</td>
<td>3192</td>
</tr>
</tbody>
</table>

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

**Laubach, Mark**  **Broadcom**

**Comment**

Page 215, Line 36, Change "OFDMA Frame" to "RB superframe configuration"

Page 98, Line 38, Remove "OFDMA frame length," (superframe length is now well known and fixed). Also change "size pilot" to "size, pilot"

**Suggested Remedy**

Accept.

---

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

**Laubach, Mark**  **Broadcom**

**Comment**

Notes to all tables in Clause 100 should be table footnotes as per 2012 Style Guide, Section 14.4. This was a previous mistake of the editors to not follow the style guide when porting from D3.1 PHY specification.

**Suggested Remedy**

Change all numeral designation on all table footnotes to alphabetic: i.e., "1" to "a", "2" to "b", etc.

Accept.

---

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

**Laubach, Mark**  **Broadcom**

**Comment**

Update Pilot and Marker Insertion function box in Figure 100-3.

**Suggested Remedy**

Change text inside box to "Pilot Insertion" to match new subsection title, if draft text is approved.

Add arrow from Pilot insertion out the left side, then down into PMD and then pointing to the side of the PMD FUNCTIONS box. Label with "PMD_SIGNAL.request"

Accept.

---

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

**Laubach, Mark**  **Broadcom**

These subsections can be removed as most of their intended material is covered in the tables and other sections. If we need a particular subsection, we can bring it back later.

**Suggested Remedy**

100.2.11.3 Image rejection performance
100.2.11.4 Multi-channel receiver operation
100.2.11.5 Reconfiguration of CNU receiver
100.2.12 CLT Receive requirements
100.2.12.1 Input signal characteristics at CLT receiver
100.2.12.2 Input return loss
100.2.12.3 Input impedance
100.2.12.4 Image rejection performance
100.2.12.5 Multi-channel receiver operation

Accept.

---

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

**Prodan, Richard**  **Broadcom**

**Comment**

subtitle change

**Suggested Remedy**

Change the word "Upstream Codeword Filling" to "Upstream FEC encoding"

Page 133, line 52. Change title "LDPC decoding process within CLT (upstream)" to "Upstream FEC decoding"

Accept.
Comment Type  T  Comment Status  A
Fill threshold needed to be tweaked a little bit to improvement optimum efficiency. Also noted can have a most one medium codeword in any burst termination. Explanations can be provided based on prodan_3bn_10_0115.pdf.

SuggestedRemedy
Page 122, Line 11, Change "102" to "101"
Page 128, Line 22, Change "102" to "101"
Page 128, Line 24, Change "102" to "101". Also remove sentence "Repeat create and encode using medium codewords if B_df*nBQ = 76 blocks are available."
Page 134, Line 5, Delete word "full"
Page 134, Line 8, Change "(FT = 6601)" to "(BQ = 101) * 65"
Page 134, Line 12, Delete sentence "Repeat and decode using medium codewords if remaining bits_d (BQ = 76) * 65 + 40 + (FR =900) bits."
Page 134, Line 16, Change "(FT = 1601)" to "(BQ = 25) * 65"

Response  Response Status  C
ACCEPT IN PRINCIPLE.
Pg 134 line 5-25 change to number list.

Comment Type  T  Comment Status  A
Updated subsection on Burst Markers as per prodan_3bn_11_0115.pdf (an Framemaker file is available with this content)

SuggestedRemedy
Replace section 101.4.4.8 with contents of progran_3bn_11_0115.pdf.

Response  Response Status  C
ACCEPT IN PRINCIPLE.
Updates in prodan_3bn_11b_0115.pdf
Replace underscored B with BR (R subscripted)
Update all cross ref.