Cl **00** *SC* **0** *P* *L* # 3189

Laubach, Mark Broadcom

Comment Type **T** *Comment Status* **D**

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 "OFDMA Frame" is used inconsistently. Where it is referring to one symbol, need to change to "OFDMA symbol".

SuggestedRemedy

Change "OFDMA Column" and "OFDMA Frame" to "RB Frame".
Change "OFDMA superframe" to "superframe" or "US superframe" as appropriate.

Page 169, Line 45 change "OFDMA frame" to "OFDMA Superframe"

Page 169, Line 47. Change "256 OFDMA frames" to "256 OFDMA symbols"

Page 169, Line 48. Replace "An OFDMA frame is one Resource Block column (i.e., one column of Resource Blocks over the entire upstream spectrum)." with "A Resource Block Frame (RB Frame) is composed of one column of Resource Blocks over the upstream OFDM channel."

Page 215, Line 36, Change "OFDMA Frame" to "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"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
I don't think introducing a new term at this point is a good idea
Change "OFDMA Column" to "OFDMA Frame".
Change "OFDMA superframe" to "upstream superframe".

Page 169, Line 45 change "OFDMA frame" to "upstream Superframe"

Page 169, Line 47. Change "256 OFDMA frames" to "256 OFDMA symbols"

Page 169, Line 48. as is "An OFDMA frame is one Resource Block column (i.e., one column of Resource Blocks over the entire upstream spectrum)."

Page 215, Line 36, Change "OFDMA Frame" to "superframe configuration" (per comnent)

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

Cl **00** *SC* **0** *P* **1** *L* **1** # 3174

Remein, Duane Huawei Technologies

Comment Type **ER** *Comment Status* **D**

Update Copyright date to 2015

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **116** *L* **20** # 3020

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Should we set variables to true (7x), True (4x) or TRUE (50x)
How about false (24x), False (6x) and FALSE (13)?

SuggestedRemedy

Use TRUE & FALSE consistently.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **39** *L* **39** # 3136

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

No longer need 4 bits to specify US time interleaver.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **50** *L* **11** # 3135

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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 remein_3bn_13_0115.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **51** *L* **50** # 3137

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

EDITORS NOTE (to be removed prior to publication): need a good reference for the UQ2.14 notation (other than Wiki) or need to include a good description; here is a synopsis of wiki,.
The Qm.n number format is a fixed point number format where the number of fractional bits is specified by n and optionally the number of integer bits is specified by m. For example, a Q14 number has 14 fractional bits; a Q2.14 number has 2 integer bits and 14 fractional bits. Preceding the "Q" with a "U" indicates an unsigned number.

SuggestedRemedy

In Cl 1 add the following after 1.4.331a QAM symbol
"Insert the following definition after existing definition at 1.4.332 "Q".
1.4.332a Qm.n: The Qm.n number format is a fixed point number format where the number of fractional bits is specified by n and optionally the number of integer bits is specified by m. For example, a Q14 number has 14 fractional bits; a Q2.14 number has 2 integer bits and 14 fractional bits. Preceding the "Q" with a "U" indicates an unsigned number.
Insert the following after 1.4.411 upstream.
1.4.411a UQm.n: See 1.4.332a Qm.n."
Remove the editors note at pg 51 line 50.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **80** *L* **44** # 3028

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In some uses, ceiling rounds to 1.0, in others ceiling rounds to 0.5 as noted. While agreeing in principle, the rounding needs to be clear for the intended function use and not inferred accidentally from a prior use if the NOTE was not present.

Cl **00** *SC* **101.3.2.5.2** *P* **125** *L* **28** # 2771

Hajduczenia, Marek Bright House Network

Comment Type **ER** *Comment Status* **D**

"see section101.3.2.5.2" - we do not use word "section" anywhere

SuggestedRemedy

strike the word "section". Scrub the whole draft for instances of section and subsection - there are at least 25 hits to be replaced.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Use care as many instances of this word are OK.
Changed to Cl 00 as the request is to apply this to the entire draft.

Cl **00** *SC* **101.3.3.1.5** *P* **136** *L* **34** # 2836

Hajduczenia, Marek Bright House Network

Comment Type **ER** *Comment Status* **D**

The names of variables / parameters are very inconsistent right now, especially in terms of their capitalization.

SuggestedRemedy

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. dataInSize is a prime example here. FecCodeWordFail should be fecCodeWordFail, FecCodeWordSuccess should be fecCodeWordSuccess, FIFO_FEC_RX should be fifoFecRx, PMA_CLK should be pmaClk etc. There is no need to use underlines, or any other special characters and variables become more compact, simpler to read, and isolate from the main text without the use of any special formatting.

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.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
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 raises the risk of introducing errors into the text of the draft. Also there is no precident for adopting such a convention.

Cl **00** *SC* **101.3.3.1.5** *P* **137** *L* **14** # 2834

Hajduczenia, Marek Bright House Network

Comment Type **ER** *Comment Status* **D**

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

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
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)."

Cl **00** *SC* **101.4.3.7.2** *P* **159** *L* **28** # 3085

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

The variable "M" is used in several places in the draft for different things"
1) Cl 100 pg 95 ln 42 - US time interleaver period (RB size)
2) Cl 101 pg 152 ln 45, 46, 48, 50 ... - a scaling factor for continuous pilots
3) Cl 101 pg 157 ln 12, 16 - DS time interleaver period
4) Cl 101 pg 161 ln 33, 30, 35 - DS time interleaver period(?)
Should also refer to variables not Cl 45

SuggestedRemedy

Change "M" in this section and pg 157 with "DS_TmIntrlv"
Change "M" to US_TmIntrlv" pg 95

Add US_TmIntrlv to table 101-1
US time interleaving | US OFDM control | 1.1901.11:7 | US_TmIntrlv | 1 | 11:7

Add definition for US_TmIntrlv
US_TmIntrlv
TYPE: Integer
This variable determines the number of symbols in the upstream time interleaver (and thus the size of a resource block) to either 8 or 16.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **102.4.2.9** *P* **227** *L* **10** # 3129

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **01** *SC* **1.4** *P* **24** *L* **12** # 3131

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

Due to changes introduced in 802.3bk para numbering is incorrect and inconsistencies exist between Editing Instructions and para numbers.

SuggestedRemedy

Change section 1 per remein_3bn_12_0115.pdf
changes shown in remein_3bn_12_0115 CMP.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **01** *SC* **1.4** *P* **24** *L* **12** # 3054

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Incorrect para style for text: Change the definition of 1.2.127 as shown below:

SuggestedRemedy

Change style to Editing Instruction

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **01** *SC* **1.4.160a** *P* **24** *L* **29** # 2764

Hajduczenia, Marek Bright House Network

Comment Type **ER** *Comment Status* **D**

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.

SuggestedRemedy

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 ;)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change Clause 1 per remein_3bn_12_0115.pdf
changes shown in remein_3bn_12_0115 CMP.pdf

Cl **01** *SC* **1.5** *P* **24** *L* **51** # 2763

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

Is there any specific reason why all abbreviations start with a catpial letter? Compare with 802.3-2012

SuggestedRemedy

I believe only expansion of EPoC should start with capital "EPON" - the rest should start with lower caps.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100** *P* **70** *L* **1** # 2735

Hajduczenia, Marek Bright House Network

Comment Type **ER** *Comment Status* **D**

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.

Proposed Response *Response Status* **W**

PROPOSED 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".

Cl **100** *SC* **100** *P* **70** *L* **1** # 3015
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

import conditional text settings from 8023xx-200 template.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

Comment Type **T** *Comment Status* **D**

Need table for variable mapping to Cl 45 registers.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
What does the comment first page, line 21, in red color mean? Should this be an editors note or something to be removed when this is accepted?
Suggestion: add a real note stating that the variables in Table 100-x are used in Clauses 100, 101, and 102.

Cl **100** *SC* **100.1.3** *P* **73** *L* **31** # 3192
Laubach, Mark Broadcom

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.1.3** *P* **73** *L* **33** # 3130
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

Remove block from Fig 100-3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2** *P* **76** *L* **20** # 2736
Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"PMD service interface and the MDI All" - seems that the end of the sentence got truncated

SuggestedRemedy

Please either add what was supposed to be at the end or remove "All"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Suggest removing " All"

Cl **100** *SC* **100.2.1** *P* **76** *L* **27** # 3185

Laubach, Mark Broadcom

Comment Type **TR** *Comment Status* **D**

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

SuggestedRemedy

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 PMDF service interface supports the exchange of a continuous stream of OFDM/OFDMA modulation symbols between tne PMA and PMD entities. The modulation symbols are encoded as I / Q value pairs."

Page 77, Line 39. Remove subsecton "100.2.1.1 Delay constraints"

Page 76, Line 51. Change "This primitive defines the transfer of 1 bit of data from the Clause 101 PMA to the Clause 100 PMD." To: "This primtive defines the transfer of one symbol encoded as an I / Q value pair from the Clause 100 PMA to the Clause 100 PMD."

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 in the function of the aggregate OFDM channel capacity, as defined by TBD (see {ref}). Upon the receipt of this primitive, the PMD converts the received appropriately
formatted stream of bits 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 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"

Page 77, Line 17. Change "The semantics of the service primitive are PMD_UNITDATA.indication(rx_unit). The data conveyed by PMD_UNITDATA.indication is a TBD. The rx_unit parameter represents TBD." To: "The semantics of the service primitive are PMD_UNITDATA.indication(I_value, Q_value). The data conveyed by
PMD_UNITDATA.indication 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 20. Remove Editor's note.

Page 77, Line 23. Change "bits" to "I / Q value pairs"

Page 77, Line 24, Change "TBD GBd" to " 204.8 MHz"

Page 77, Line 26, Remove Editor's note.

Page 77, LIne 30, Change "PCS" to "PMA". Change "the granted time" to "the presence of non-null data presented to the IFFT" Delete "A signal for transmitter control is generated by the Data Detector function - see TBD. Clause 101 PCS transfers this signal across towards the Clause 100 PMD without any changes.". Delete "The Clause 101 PCS generates this primitive to indicate a change in the value of tx_enable parameter.".

Page 77, Line 42 Change "bits" to "I / Q value pairs". Change "tx_unit" to "I_value, Q_Value".

Page 77, Line 46 Change "bits" to "I / Q value pairs".

Page 77, Line 47, Change "This implies three RF signal levels: 1, 0, and none." to: "Tx_enable takes the values of ENABLE and DISABLE. Change "none" to "DISABLE".

Page 77, Line 52 Change both occurences of "bits" to "I / Q value pairs" Change "rx_unit" to "I_value, Q_value".

Page 77, line 34, italisize "tx_enable" inside the parenthesis.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.1.2** *P* **77** *L* **7** # 2737

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

as defined by TBD (see {ref})..
Need to mark ref in color for better visibility. Also, remove double "."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED 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.

Cl **100** *SC* **100.2.1.3** *P* **77** *L* **15** # 2738

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

Change TBD in this section to "1 bit"

Proposed Response *Response Status* **W**

PROPOSED 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.

Cl **100** *SC* **100.2.1.4** *P* **77** *L* **34** # 3138

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

We have a defined variable TxEnable that is mapped to mdio register 10GPASS-XR control. I believe this tx_enable is the same parameter.

SuggestedRemedy

Replace 9 instance of tx_enable with TxEnable. Add to Cl 45 mapping table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Note another comment submitted late, if accepted may alter semantics with respect to any Clause 45 text.

Cl **100** *SC* **100.2.10.1** *P* **97** *L* **45** # 3155

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
"or better" is subjective. Need objective requirement.

Cl **100** *SC* **100.2.10.1** *P* **97** *L* **47** # 3156

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

"The CLT shall be settable according to Table 100-11 for intended received power normalized to 6.4 MHz of bandwidth." This "set-ability" should have an associated variable and register in Cl 45.

SuggestedRemedy

Change "settable according to" to "provisionable per"
Add Editors note that a variable and Cl 45 Register are required for this provisioning. (or define such a variable).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
"settable" to "configured". The spec is using "configure." much more than "provision.."

Cl **100** *SC* **100.2.10.1** *P* **97** *L* **50** # 3177

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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."

SuggestedRemedy

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."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.10.1** *P* **97** *L* **54** # 3100

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
This was an editor's mistake to correct on both points.

Cl **100** *SC* **100.2.10.1** *P* **98** *L* **3** # 3178

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Need to ask the experts what the units are.

Cl **100** *SC* **100.2.10.2** *P* **98** *L* **25** # 3101

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

No need to define a TLA for something that is only used once in the draft.
Also 10-6 should not break across a line.

SuggestedRemedy

Replace "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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Should be frame loss ratio to meet wording in objective.

Cl **100** *SC* **100.2.10.2** *P* **98** *L* **37** # 3190

Laubach, Mark Broadcom

Comment Type **T** *Comment Status* **D**

need to align probe symbols to earlier descision

SuggestedRemedy

Change "5" to "6".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.11.1** *P* **99** *L* **36** # 3179

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.
As written here and in DOCSIS, this are intended to go together, but will differ to experts and TF decision.

Cl **100** *SC* **100.2.11.2** *P* **100** *L* **12** # 3180

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

Well at least we use the TLA FLR twice :-)
But we should be consistent

SuggestedRemedy

Change "10-6 FLR (frame loss ratio)" to "10-6 packet error ratio when operating at a CNR as shown in Table 100-14, under input load and channel conditions as follows" (observe superscripting).
At line 18 change "CNU FLR shall be less than or equal to the required loss ratio" to "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"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Should be frame loss ratio to meet wording in objective.

Cl **100** *SC* **100.2.11.3** *P* **101** *L* **3** # 3193

Laubach, Mark Broadcom

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.5** *P* **78** *L* **11** # 3186

Laubach, Mark Broadcom

Comment Type **TR** *Comment Status* **D**

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.

SuggestedRemedy

Lines 19 through 24, remove "c" superscript. Line 40, remove table note "C".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.5** *P* **78** *L* **40** # 2739

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"This modulation format is require only for low density pilots" - likely should be "This modulation format is >>required<< only for low density pilots"

This note is also creating a conditional requirement. Note that the table itself is mandatory, and this note creates an exception of some sort.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The "c" and table note are removed in a comment submitted late. If accepted, this comment no longer applies. Otherwise, accept.

Cl **100** *SC* **100.2.5** *P* **78** *L* **42** # 2740

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

"Modulation format for PHY Link is specified in102.2.1.2 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.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.6.1** *P* **79** *L* **2** # 3073

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

Should not include a ref to Cl 45 in a normative statement nor refer to CL 45 registers as variables. "the CLT shall update the value of the variable DS_DataRate (see 45.x.x.x.)." Same issue in ln 33

SuggestedRemedy

remove cl 45 ref.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.6.1** *P* **79** *L* **2** # 2741

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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

SuggestedRemedy

Please address three issues per comment

Proposed Response *Response Status* **W**

PROPOSED 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 referencial notation.

Cl **100** *SC* **100.2.6.1** *P* **79** *L* **7** # 2742

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This is a T but there is no technical comment or remedy. Should be an E. Based on previous editor input, most calculations should be in FM equation format. Can change to unnumbered equations if desired by the TF.

Cl **100** *SC* **100.2.6.2** *P* **79** *L* **35** # 3182

Victor, Hou Broadcom

Comment Type **T** *Comment Status* **D**

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)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.7.1** *P* **80** *L* **17** # 2744

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

Per comment. Same in 100.2.7.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.7.2** *P* **80** *L* **22** # 2743

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

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

Cl **100** *SC* **100.2.8.1** *P* **80** *L* **51** # 3181

Victor, Hou Broadcom

Comment Type **T** *Comment Status* **D**

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Suggested remedy is that that example can be removed without altering the technical understanding of the first sentence. Therefore remove "For example,." to the end of the paragraph. As well as the double period at the end of the first sentence on line 48.

Related comments: 2745, 3181, 3139

Cl **100** *SC* **100.2.8.1** *P* **80** *L* **51** # 2745

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

The example "For example, provided the OFDM channel of 204.8 MHz, subcarrier spacing of 50 kHz and 148 lower band edge subcarriers and 148 upper band edge subcarriers (a total of 302 subcarriers in two band edge exclusion sub-bands), the encompassed spectrum is equal to 789.05 - 600.00 + 0.050 = 190.00 MHz. " to be clear shoudl also show where numbers 789.05, 600 and 0.050 come from and what they mean. Otherwise, it is just arythemtics with little sense

SuggestedRemedy

Please expand the example to demonstrate where 789.05, 600 and 0.050 come from

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Suggested remedy is that that example can be removed without altering the technical understanding of the first sentence. Therefore remove "For example,." to the end of the paragraph. As well as the double period at the end of the first sentence on line 48.

Related comments: 2745, 3181, 3139

Cl **100** *SC* **100.2.8.1** *P* **80** *L* **52** # 3139

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Suggested remedy is that that example can be removed without altering the technical understanding of the first sentence. Therefore remove "For example,." to the end of the paragraph. As well as the double period at the end of the first sentence on line 48.

Related comments: 2745, 3181, 3139

Cl **100** *SC* **100.2.8.1** *P* **81** *L* **1** # 3140

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.8.2** *P* **81** *L* **24** # 2748

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **D**

The bullet points in lines 24 - 33 are hardly reqirements that are testable. These describe the process under which specific parameters are described, and the process of calculating parameter cannot be mandatory - values for specific parameter can.

SuggestedRemedy

Remove the requirement in line 23, making the text descriptive. The testable requirement is already included in line 34. Anything before describes just the way parameters are calculated. None of these are testable externally at defined test points.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove the word "shall" in line 23.

Note that there is no MUST in the same corresponding sentence of text in D3.1 PHY I04 7.5.9.1.

Cl **100** *SC* **100.2.8.2** *P* **81** *L* **24** # 2746

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The remedy is more confusing to this Editor. Also the power level is not configured independently for each occupied 6 MHz channel. Ask the experts for better wording?

Cl **100** *SC* **100.2.8.2** *P* **81** *L* **26** # 2747

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Could also create an unnumbered equation without the text reference as use is usually contextual.

Cl **100** *SC* **100.2.8.2** *P* **81** *L* **35** # 2749

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"These requirements are all tested under the condition where all Neq' [channels] are commanded to the same average power," - [] square brackets are not a standard convention for inserting additional information. Likely () need to be used. It is more likely that "channels" can be inserted without additional markup.
Also, we were to avoid the use of word "commanded" and use "configure" instead.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.8.2** *P* **81** *L* **45** # 3089

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

It seems odd that the CLT & CNT RF output requirements tables (100-2 & 100-10) are so different in their description of the OFDM/A parameters.
See related comment on Table 101-12

SuggestedRemedy

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 row7 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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Agree that Table 100-10 should be made to match Table 100-2 where appropriate whose entries were already heavily discussed. This was a future intent of this editor when the upstream electrical was brought in, but didn't get to it yet.

Reject adding new rows for: "occupied spectrum" and "active spectrum" as not sure why these are needed. Also "SC" is not a well known unit. If these rows are retained by TF for this comment, should be "subcarriers".

Reject adding row for "sampling rate". This row was remove in prior table edit and shouldn't be brought back in. That is, unless the TF wants to bring the row back.

Cl **100** *SC* **100.2.8.2** *P* **82** *L* **1** # 2753

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **D**

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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Beyond the capabilities of the non-expert editors to carry forth.

This is best a question for the experts on this as to whether such changes would impair proper understanding, by those skilled in this art. Reminder that the format of these tables came from those skilled in the art of complicated OFDM and RF modulation on cable networks.

It would be helpful to provide draft text change examples for consideration by the TF to avoid differing visualizations of the result.

Cl **100** *SC* **100.2.8.2** *P* **82** *L* **10** # 2750

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D** *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.

SuggestedRemedy

Per comemnt. This applies to all tables in Clause 100.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Unclear as per comment and reading of Style guide what the comment is referring to.

Cl **100** *SC* **100.2.8.2** *P* **82** *L* **11** # 3183

Laubach, Mark Broadcom

Comment Type **T** *Comment Status* **D**

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 I04 specification.

SuggestedRemedy

Remove "1.5" and "dB" from this row.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.8.2** *P* **82** *L* **19** # 2751

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

MER is not defined in the whole draft, but used heavily (38 hits in the whole draft)

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.8.2** *P* **82** *L* **20** # 3184

Laubach, Mark Broadcom

Comment Type **T** *Comment Status* **D**

Editorial mistakes when converting the columns for this table for Draft 1.2

SuggestedRemedy

Line 20: change subscripts to be "1,2,4,5,6,7,11"
Lines 23 through 34, remove the "1" superscript
Lines 32 through 34, remove the "7,11" superscript

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Make the suggested changes.

However, due to this Editor's mistakes in the copy and paste from DOCSIS table formats with respect to the IEEE 2012 style guide, change "1" to "a", "2" to "b", etc. in this table.

Cl **100** *SC* **100.2.8.2** *P* **82** *L* **21** # 2752

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

Seems that some table formatting needs some more work:
lines "For measurements below 600 MHz:", "For measurements from 600 MHz to 1002 MHz:", and "For measurements 1002 MHz to 1218 MHz:" should be moved to the right one tab, and then lines "Any single subcarrier" and "Average over the complete OFDM channel" should be moved also one more tab to the right. Only then the relationship between individual entries makes sense.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.8.2** *P* **82** *L* **44** # 3069

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Output Impedance 75 ohms

SuggestedRemedy

Move ohms to units col.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.8.2** *P* **83** *L* **1** # 3191

Laubach, Mark Broadcom

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.8.4** *P* **84** *L* **22** # 2754

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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 intended 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

SuggestedRemedy

Address individual comments.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
a) R: 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) AiP: Following 2012 Style guide, and other comments, all numerals table footnote designation should have been changed to alpha in the original draft text under consideration that was ported from D3.1 PHY.
c) AiP: need to ask the experts if this should be designated as a table note (informative), otherwise, leave as normative.
d) R: table footnotes are normative
e) AiP: 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.

Cl **100** *SC* **100.2.8.5** *P* **85** *L* **13** # 3175

Remein, Duane Huawei Technologies

Comment Type **ER** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED 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.

Cl **100** *SC* **100.2.8.5** *P* **85** *L* **17** # 2755

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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?

SuggestedRemedy

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?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
As per individual's earlier comments "commanded" should be "configured".
A question is not a remedy. In this case, need to ask the experts for a better wording.

Cl **100** *SC* **100.2.8.5** *P* **85** *L* **34** # 2756

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.8.5** *P* **85** *L* **44** # 3141

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

We should be consistent with the use of variable names such as Ncp & Nrp. In this para they are clearly associated with DS.
See similar comments against Cl 102

SuggestedRemedy

Change Ncp pg 85 ln 44 to DS_Ncp (no subscripting)
Change NCP pg 88 ln 24 to US_Ncp (no subscripting)
Change NCP (subscripted) in Fig 100-6 to US_Ncp (no subscripting)

Change Nrp pg 85 ln 46 to DS_Nrp (no subscripting)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Agree, this would be per the general cleanup needed for 100.2.8 as per leading editor's note.

Cl **100** *SC* **100.2.8.5** *P* **85** *L* **51** # 2758
Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Need to ask experts for precise clarification on what is meant by a sub-block.

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

Comment Type **T** *Comment Status* **D**

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).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Acknowledged that "US_TmIntrlv" was introduced earlier, but is confusing to get the .
Should really be US_RBlength or similar for clarity, or US_RBFrmSize.

Cl **100** *SC* **100.2.9.1** *P* **88** *L* **22** # 3143
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.9.1** *P* **88** *L* **23** # 3145
Remein, 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* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Suggest: subscript in line 23.

Cl **100** *SC* **100.2.9.1** *P* **88** *L* **23** # 2759
Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Refer to resolution in comment 3145.

Cl **100** *SC* **100.2.9.1** *P* **88** *L* **23** # 2773
Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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?

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Refer to resolution in comment 3145.

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

Comment Type **T** *Comment Status* **D**

Dimension arrow for NFFT missing

SuggestedRemedy

Add dimension arrow

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Suggestion: put NFFD inside the box centered under "(useful symbol period)". This avoids putting more arrow eye-clutter in the figure.

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

Comment Type **T** *Comment Status* **D**

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
However, fully granted also applies to using 3800 subcarriers. Clarify with experts and adjust remedy text accordingly, if needed.

Cl **100** *SC* **100.2.9.3** *P* **89** *L* **9** # 3167
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

Comment Type **T** *Comment Status* **D**

The CNU only has one "mode": In OFDMA mode the CNU

SuggestedRemedy

Strike the phrase.

Proposed Response *Response Status* **W**

PROPOSED 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* **100.2.9.4** *P* **89** *L* **39** # 2774
Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The CLT performs the power calculation in what it commands to each CNU, it doesn't necessarily observe in this context. Let's ask the experts for clarification in the wording.

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

Comment Type **E** *Comment Status* **D**

Do we have two Table 100-7's?
"in Table 100-6, Table 100-7, and Table 100-7"

SuggestedRemedy

Perhaps this should be "in Table 100-6, Table 100-7, and Table 100-8".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.9.5.1** *P* **90** *L* **15** # 2775
Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

Change to "The parameter SpurFloor is related to the ratio of the number of subcarriers"
Simialar comment for line 29, and line 33, same page.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.9.5.1** *P* **90** *L* **33** # 3168
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Stray DOCSISisms "modem" in 3 places

SuggestedRemedy

change to CNU

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Editor self comment: "oops!"

Cl **100** *SC* **100.2.9.5.1** *P* **90** *L* **46** # 2776
Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

DOCSIS 3.1 references? "Section 7.4.13.5"

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED 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".

Cl **100** *SC* **100.2.9.5.1** *P* **90** *L* **49** # 3169
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

Change specs to specifications in 4 places.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.9.5.1** *P* **91** *L* **14** # 3149
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

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:

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Editor's typo for D1.2. Should have read "Table 100-7 for Table 100-8".

Cl **100** *SC* **100.2.9.5.1** *P* **91** *L* **8** # 3153
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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

Proposed Response *Response Status* **W**

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

Cl **100** *SC* **100.2.9.5.3** *P* **93** *L* **10** # 3176

Remein, Duane Huawei Technologies

Comment Type **ER** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED 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."

Cl **100** *SC* **100.2.9.5.4** *P* **94** *L* **31** # 3151

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Make sure this is ok with the experts.

Cl **100** *SC* **100.2.9.6** *P* **94** *L* **46** # 3170

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

"TxMER or just MER"
Given that TxMER only appears here do we even need to mention it?

SuggestedRemedy

Strike "TxMER or just "

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
There will be added sections for RxMER so don't want to confused MER in this section with MER used elsewhere. Suggest changing the subsection title to add "Transmit". And then add some text that says that MER in this subsection refers to Transmit modulation error ratio. "(TxMER or just MER)" to "(expressed as MER in this subsection)".

Cl **100** *SC* **100.2.9.6.1** *P* **95** *L* **23** # 3150

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.9.6.1** *P* **95** *L* **40** # 3171

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Para style incorrect; should use an indented para style (appears to use T,text.

SuggestedRemedy

Use same indented para style (suggest H,HangingIndent)for all eq parameter definitions ln 39-48.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.9.6.1** *P* **95** *L* **49** # 3152

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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 ..."

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.9.6.2** *P* **96** *L* **13** # 3172

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Table style should be per IEEE style.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.9.6.2** *P* **96** *L* **6** # 3154

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.9.7** *P* **97** *L* **1** # 3173

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Table continuation missing

SuggestedRemedy

add Table Continuation variable to table title.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.3.1** *P* **101** *L* **45** # 3071

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
It was decided via the last comment round to move this text into the test section. It is believe that those RF experts understand was muting is, but ask them regardless for clarification.

Cl **100A** *SC* **100A.4.1** *P* **313** *L* **1** # 3134

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

PICS for 100A

SuggestedRemedy

See remein_3bn_10_0115.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.1** *P* **105** *L* **8** # 2777

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This wording is complementary to that found in CL 75 which describes the ODN in similar detail. "These are passive optical multipoint networks (PONs) that connect multiple DTEs using a single shared fiber."

Cl **101** *SC* **101.1.3** *P* **106** *L* **1** # 2779

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
All tables on which this is modeled include both name and number. See Table 82–6, Table 83–2, Table 84–3, Table 85–2, Table 86–3, Table 86–4, Table 87–3, Table 88–3, and Table 89–3. Granted our tables have two additional columns to include index and bits but these are needed for PHY Link.

Cl **101** *SC* **101.1.3** *P* **107** *L* **16** # 2778

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

Remove empty line(s) from table

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add editors note:
EDITORS NOTE (to be removed prior to publicaiton): remove empty line(s) from table once it has stabilized.

Cl **101** *SC* **101.2** *P* **110** *L* **2** # 3016

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

EDITORS NOTE (to be removed prior to publication):This subclause is modeled after 76.2 for 10G-EPON, removing multi-rate MII interface definitions.

SuggestedRemedy

Remove

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.2.2** *P* **110** *L* **36** # 2780

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

"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.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Check for auto hyphen locations and, where "_" breaks a line, set the word to non-hyphenating (Esc n s).

Cl **101** *SC* **101.2.3.3** *P* **111** *L* **3** # 2781

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

There is nothing in Tables 101-2 and 101-3 that looks any different from XGMII.

SuggestedRemedy

Remove this subclause altogether, unless there is a very good reason to keep it in the draft and extensions to XGMII signalling are planned.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.2.4.2** *P* **111** *L* **40** # 2782

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

There is nothing in 101.2.4.2 and 101.2.4.3 that looks any different from 10G-EPON definitions.

SuggestedRemedy

Leave both headings in, but point to 10G-EPON PCS defintions, rather than copy stuff over without any changes.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.1** *P* **115** *L* **1** # 2783

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"Figure 100–1 shows the relationship " ... likely Figure 101-1?

SuggestedRemedy

Point to Figure 101-1 instead.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.1** *P* **115** *L* **4** # 2784

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

This statement is not really necessary: "The EPoC PCS extends the 10GBASE-PR PCS described in Clause 76 to support operation over the pointto-multipoint coaxial medium architecture." - 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

SuggestedRemedy

Strike this statement altogether. It does not mean anything anyway.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

Pick either of the options and implement per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change to
"the PCS transmit function operates in burst mode" (as in Cl 76.3.2)

Cl **101** *SC* **101.3.2.1.1** *P* **116** *L* **3** # 2842

Zhang, Jin Marvell Semiconductor

Comment Type **T** *Comment Status* **D**

In accordance with the modified CLT idle deletion diagram, the constant and varible definitions also need to be modified.

SuggestedRemedy

Please see the attached file zhang_3bn_05_0115.pdf (also available in .docx format)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
As proposesed with the following changes.
TYPE: Fraction number replaced by
TYPE: Real number
For each number of this type include -
EDITORS NOTE (to be removed prior to publicaiton): we should specify a minimum precission for this number.

Eq 101-01 remains as is

PLCTotalBits and PLCTotalCycles need clarificaiton or formal definition.

Cl **101** *SC* **101.3.2.1.5** *P* **118** *L* **1** # 2841

Zhang, Jin Marvell Semiconductor

Comment Type **T** *Comment Status* **D** *Review*

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.

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Need to clarify meaning of "&&" in exit criteria for CLASSIFY_VECTOR_TYPE

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

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D** *Review*

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

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
I question the applicability of the format of Cl 76A, which applied to an RS (255,223) FEC. The tables would need to be increase by about a factor of 20 to be meaningful for a LDPC (16200, 14400) FEC. At this point my feeling is they will be overly cumbersom. Clause 55 outlines the details of it's LDPC code with two short paragraphs (see Cl 55A). We have included similar text in CL 101.

Perhaps it would be prudent to drop the idea of Annex 101A instead, pending the will of the TF. Alternatively the commenter is invited to submit a contribution.

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

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.2.4.1** *P* **122** *L* **44** # 2768

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

"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." - if possible, break the line manually before the name of the FEC code - avoid code name breaking across lines for improved readability.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Manual line breaks cause the first part of the sentence to be difficult to read due to large spacing. Reword to "The 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 is shown in Table 101–6."

Cl **101** *SC* **101.3.2.5.10** *P* **129** *L* **25** # 2728

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Define new variable
fecTyp
TYPE: integer
This variable indicates the FEC type (see Table 101-5)

Add new 1st column to Table 101-5 labled fecTyp with row values of 1, 2, & 3

For all instances of variables FC, FP, FR, FT, BQ and BP add selector "(fecTyp)". In all definitions of these variables include a phrase that fecTyp indicates the specific FEC type per Table 101-5.

Cl **101** *SC* **101.3.2.5.13** *P* **131** *L* **28** # 2729

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D** *Review*

"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.

SuggestedRemedy

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"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Per comment unless this is resolved some other way.

Cl **101** *SC* **101.3.2.5.13** *P* **133** *L* **28** # 3018

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

change title to Downstream CLT transfer to PMA process and Upstream CLT transfer from PMA process

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.2.5.2** *P* **125** *L* **24** # 2769

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

"This resulting FP bits of data is then passed" ... given that we speak of plural bits, the statement should read "This resulting FP bits of data >>are<< then passed"

SuggestedRemedy

Per comment. The same issue on page 128, line 1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change to
"This resulting FP data bits are then …" in both cases

Cl **101** *SC* **101.3.2.5.2** *P* **125** *L* **27** # 2770

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

What is this: "For downstream TX processing,"? Is this supposed to mean "In the downstream direction" ???

SuggestedRemedy

Change per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.2.5.5** *P* **126** *L* **51** # 2772

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **D** *Review*

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.

SuggestedRemedy

Text needs to be updated to account for disparity between burst market size and the codeword size within Data Detector. State diagram is neede urgently to describe the said process in mode detail and show calculations.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add
EDITORS NOTE (to be removed prior to publication): Text needs to be updated to account for disparity between burst size and the codeword size within Data Detector. State diagram or adequate description of this process is needed.

Cl **101** *SC* **101.3.2.5.5** *P* **127** *L* **23** # 3074

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

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

SuggestedRemedy

see remein_3bn_15_0115.pdf for figure. Update reference and remove Ed Note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.2.5.6** *P* **128** *L* **4** # 2720

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **D** *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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The scrambler was moved to the PMA.
Change
"The output codeword is passed to the scrambler"
to
"The output codeword is passed to the PMA"

Add to 101.4.3.1 Overview
EDITORS NOTE (to be removed prior to publication): a descsription of the scrambler is needed" (unless such a description is added in this comment round).

Cl **101** *SC* **101.3.2.5.8** *P* **128** *L* **12** # 2721

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

Cut down the fluff: "Upstream bursts are necessarily variable in length and as EPON can concatenate in the upstream, an EPoC
upstream burst may contain more than one MAC frame. " > "Upstream bursts in EPoC are variable in length and may contain more than one MAC frame."

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.2.5.8** *P* **128** *L* **17** # 2722

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

Wrong font format: "Note that this is overview is presented in an abstract manner and does not imply any particular implementation."

SuggestedRemedy

Apply T, Text style.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Strike the note; this is always the case for 802.3 standards

Cl **101** *SC* **101.3.2.5.8** *P* **128** *L* **20** # 2726

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.
There is no harm with a numbered list and that reflects the submitted text.

Cl **101** *SC* **101.3.2.5.8** *P* **128** *L* **20** # 2723

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **D** *Review*

Text in lines 20-32 is intended to describe the filling operation. This is what we typically have state diagrams for.

SuggestedRemedy

Either convert into a state diagram OR a pseudo code description to eliminate lengthy textual descriptions and avoid differences in interpretation.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The description is clear and technically correct. Per David Law this is sufficient. If the commentor submits a SD or pseudo code it will be considered.

Cl **101** *SC* **101.3.2.5.8** *P* **128** *L* **34** # 2724

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

"Every codeword in the burst will have a length of determined by the number B of 65-bit blocks encoded:" - we do not use the word "will" too often.

SuggestedRemedy

Change "will have" to "has"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.2.5.8** *P* **128** *L* **39** # 2725

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

Quite convoluted statement "B can be from 1 to B
Q 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)."

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED 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.

Cl **101** *SC* **101.3.2.5.9** *P* **129** *L* **3** # 3017

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

remove.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.2.5.9** *P* **129** *L* **5** # 2727

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

FEC_DS_CodeWordSize does not need to represent negative values.

SuggestedRemedy

Change "16-bit integer" to "16-bit unsigned integer"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.3.1.1** *P* **133** *L* **54** # 2828

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

"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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

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

Cl **101** *SC* **101.3.3.1.1** *P* **134** *L* **39** # 2830

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **D**

"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?

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED 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.

Cl **101** *SC* **101.3.3.1.1** *P* **134** *L* **4** # 2829

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **D** *Review*

The process described in lines 4 through 25 describes the process of decofing FEC codewords in the upstream direction. We usually use state diagrams or pseudo-code in this case, and not descriptive text to avoid problems with differing interpretations.

SuggestedRemedy

Replace the text in lines 4 through 25 with pseudo-code or state diagram.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Per David Law clear descriptive text is acceptable.
Should the commenter submit a state diagram or pseudo-code it will be considered.

Cl **101** *SC* **101.3.3.1.3** *P* **136** *L* **16** # 2831

Hajduczenia, Marek Bright House Network

Comment Type **ER** *Comment Status* **D** *Review*

"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.

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Editors will cross reference variables in Table 101-1 and include reference to definition. If a definition does not exist an entry in an appropriate location will be created with TBDs for all normally populated text.

Cl **101** *SC* **101.3.3.1.3** *P* **136** *L* **18** # 2832

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
There is no disable in 101.3.3.1.3

Cl **101** *SC* **101.3.3.1.3** *P* **136** *L* **26** # 3019

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Editor's Note (to be removed prior to publication): this subclause was at 101.3.3.2. The editor move it here as it really is part of FEC decoding and is included in SD's below Has served it's purpose.

SuggestedRemedy

remove

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.3.1.5** *P* **136** *L* **48** # 2833

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"(BQ + 1) × 65 + CRC bits + BP" - the value of CRC bits is fixed at 40 and does not change in function of FEC codeword

SuggestedRemedy

Change to "(BQ + 1) × 65 + 40 + BP"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Reword description from
This variable represents the size of the dataIn array, containing the combination of the payload portion of the FEC codeword, the parity portion of the FEC codeword, CRC40, and all the necessary padding.
To
This variable represents the size of the dataIn array in bits, containing the sum of the payload portion of the FEC codeword (BQ+1 x 65), the CRC40 (40), and the parity portion of the FEC codeword (BP).

Cl **101** *SC* **101.3.3.1.5** *P* **137** *L* **23** # 2835

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

"After reaching 0xFF-FF-FFFF" should be "After reaching 0xFF-FF-FF>>-<<FF"

SuggestedRemedy

Just missing "-"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.3.1.5** *P* **137** *L* **45** # 3075

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

PMA_CLK is set on neg edge of the pma cloak but when is it reset?

SuggestedRemedy

Add:
This variable is reset to FALSE upon read.

Also change "This Boolean is true on every negative edge" to "This Boolean is set to TRUE on every negative edge"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.3.1.6** *P* **138** *L* **22** # 2837

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

"Length" needs a proper style applied

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
s/b 10 pt.

Cl **101** *SC* **101.3.3.1.7** *P* **138** *L* **36** # 2838

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

Remove 101.3.3.1.7, there is very little chance that we will need new messages here.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.3.1.8** *P* **138** *L* **41** # 2839

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **D**

There are no requirements for CNU implementing PMA process. it this not needed?
There are no requirements for CLT decoding process. It this not needed?

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.3.1.8** *P* **139** *L* **1** # 2785

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

Fix the name of state "WAIT FOR CALL" to "WAIT_FOR_CALL". Remove "rxCount"

Proposed Response *Response Status* **W**

PROPOSED 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.

Cl **101** *SC* **101.3.3.1.8** *P* **140** *L* **28** # 2786

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **D** *Review*

To address the editorial note in Figure 101-13, the following changes in state diagram are needed:
a) change "dataCrcA != dataCrcB" to "dataCrcA != dataCrcB * CRC40ErrCtrl = TRUE"
b) change "dataCrcA = dataCrcB" to "dataCrcA = dataCrcB + CRC40ErrCtrl = FALSE"
Effectively, if CRC40ErrCtrl is enabled (errors are to be reported to upper layers), SyncHeader is invalidated when CRC40 does not match. Otherwise, when CRC40ErrCtrl is disabled, data is always treated as decoded correctly and passed along.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
As proposed this would invalidate FecCodeWord counts.

As an alternative we could change UTC exiting INCREMENT_ FAIL to CRC40ErrCtrl = TRUE and add an additional exit path CRC40ErrCtrl = FALSE connecting to DECODE_SUCCESS
We should also remove "decodeFailure ++" from DECODE_FAIL state as it is a carryover from a previous version and was replaced by FecCodeWordFail++ in the INCREMENT_ FAIL state.

Cl **101** *SC* **101.3.3.2** *P* **141** *L* **23** # 2787

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D** *Review*

Sectiion 101.3.3.2 has no content today

SuggestedRemedy

Insert at least an editorial note indicating that content is missing

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
(assuming none is accepted this during meeting)

Cl **101** *SC* **101.4.2** *P* **144** *L* **49** # 2789

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"The PMA converts data-groups into bits and passes these to the PMD, and vice versa. It also generates an
additional status indication for use by its client." looking at figure Figure 100–3 (example), PMA performs many other functions, which are not described in this indtroduction.

SuggestedRemedy

Either add the high level description of other functions provided by PMA or remove the summary of PMA functions as is right now - it is very incomplete at best.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See Response to Cmt #2788

Cl **101** *SC* **101.4.2** *P* **144** *L* **49** # 2788

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"The PMA converts data-groups into bits and passes these to the PMD:
a) what are data groups? this is the only location in the whole draft where such a term is used ...
b) "these" refers to bits or data-groups?

SuggestedRemedy

Cosnider revising to read: "The PMA converts data vectors into bits and passes then these data bits to the PMD"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The PMA now uses a bit oriented service interface so it no longer inputs data-groups per say.
Change
The PMA converts data-groups into bits and passes these to the PMD, and vice versa.
To
The PMA inputs serial data from the PCS and, after processing, passes serial data to the PMD and vice versa.

Cl **101** *SC* **101.4.2.1** *P* **145** *L* **3** # 2790

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"This primitive defines the transfer of data (in the form of data bits) from the PMA client to the PMA." - not only, you are also transferring markers for start and end of the burst.

SuggestedRemedy

Revise to read: "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."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.2.1.1** *P* **145** *L* **14** # 2791

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"In the downstreamdirection, the CLT transmission burst is always a single FEC codeword of size FEC_DS_CodeWordSize bits, and the CLT is continually sending bursts."
a) continually or continuously? I believe the latter is correct
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 "NA" used in downstream, where burst marking is really not needed.

SuggestedRemedy

Per comment
Similar comment on 101.4.2.2.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Pg 145 ln 16 change
"is continually sending bursts"
to
"transmits continuously, thus both burstStart and burstEnd are FALSE."
Wording in 101.4.2.2.1 is correct: "In the downstream direction, the continuous data stream received by the CNU is always a single FEC codeword of size FEC_DS_CodeWordSize bits."

Cl **101** *SC* **101.4.2.1.1** *P* **145** *L* **16** # 2792

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"In the upstream direction, the CNU transmission burst is scheduled by MPCP, is variable in size and may be composed of one or more concatenated FEC codewords." this is very little to do with the definition of the primitive itself. Remove.

SuggestedRemedy

Per comment
Similarly, the last statement in 101.4.2.2.1 is not needed.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.2.1.2** *P* **145** *L* **22** # 2793

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"Both DS_DataRate and US_DataRate are expressed in bits per second (bps)" - irrelevant in this subclause - this definition needs to be included where the said two variables are first defined (101.x.x.x.x)
Simiarly, text of two notes in lines 24-31 is out of place.

SuggestedRemedy

Remove the highlighted text
Move the text from notes into definition of individual variables, if there is any value in this text at all.
Similar changes in 101.4.2.2.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove text.
In 101.3.2.5.10 add variables DS_DataRate and US_DataRate referencing the definitions in 100.2.6.1 & 100.2.6.2 resp.

Cl **101** *SC* **101.4.2.1.2** *P* **145** *L* **29** # 3188

Laubach, Mark Broadcom

Comment Type **T** *Comment Status* **D**

Terminology alignment and edit to match previous decision on number of probe symbols per upstream superframe.

SuggestedRemedy

Line 29, change "OFDMA frame" to "OFDMA Superframe" or "US Superframe"
Line 30, change "5 or 6" to "6"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Line 29, change "OFDMA frame" to "upstream superframe"
Line 30, change "5 or 6" to "6" (per comment)

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

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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.

SuggestedRemedy

Strike the word "downstream"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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.

SuggestedRemedy

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."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change booleans to parameters

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

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

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

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

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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?

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
"The PMA supports five 190 MHz wide OFDM channels; each containing 3800 subcarriers"

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

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"of the cable network" - likely, CCDN?

SuggestedRemedy

Change per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Yes "of the coax cable distribution network"

Cl **101** *SC* **101.4.3.1** *P* **146** *L* **41** # 2800

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Distributes

Cl **101** *SC* **101.4.3.10** *P* **165** *L* **2** # 3091

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

It would be better to introduce DSNrp using wording similar to what was used for DSNcp

SuggestedRemedy

Change:
"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):"
to
"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):

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.10** *P* **165** *L* **37** # 3033

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

(see Table Ref)s/b 100-13

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.10** *P* **166** *L* **1** # 3092

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

Window size (DSNrp) options are selected from the DS windowing parameter for the CLT (see 45.2.1.108.1).
No need to ref Cl 45 (we have mapping tables for that). The Req. is stated on pg 167 ln 20

SuggestedRemedy

Strike
"Window size (DSNrp) options are selected from the DS windowing parameter for the CLT (see 45.2.1.108.1)."
Move
"CP and
Window sizes shall be selected such that the DSNrp value is less than the CP value."
to pg 167 ln 22

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.10** *P* **167** *L* **4** # 3093

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

Here we refer to "the last stage of Figure 101–25" but there is only one stage in that figure.
Probably Fig 101-26 was meant which includes Fig 101-25.

SuggestedRemedy

Remove Figure 101-25 and change references to 101-26 (3x)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.11** *P* **169** *L* **14** # 3094

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

Table 101–15 is normative, don't need double normatives.
A larger question is why this table is in Cl 101 and not Cl 100.

SuggestedRemedy

row 1 change "shall always be" to "is always"
row 2 change "should be" to "is"
row 7 change "shall not" to "does not"
row 8 change "shall permit" to "permits"

Do we wnat to move this Table to Cl 100?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.2** *P* **147** *L* **21** # 2801

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
There is no need to subscript this abbreviation.

Cl **101** *SC* **101.4.3.2** *P* **147** *L* **39** # 2803

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D** *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.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
While I'm sympathetic to this argument I will leave the decission up to those more expert in RF than I.
If we leave the statement in it should point to Table 100-3 not Fig 100-1.

Cl **101** *SC* **101.4.3.2** *P* **147** *L* **8** # 2802

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D** *Review*

Table 101–9 contains a lot of descriptive text, which pertaints to measurement subclause and not normative table itself.

SuggestedRemedy

Move the following text to subclause to describe the measurement process for specific values:
The maximum transmission time skew between any two OFDM channels
The downstream clock timing is defined with respect to downstream PHY Link frame.
The CNU adjusts its clock to synchronize its own clock timing with PHY Link frame for proper operation.
The CNU acquires downstream clock timing from the downstream signal (pilots, preambles, or mixed pilots, preambles, and data).
The CNU achieves downstream signal acquisition (frequency and time lock) in
.. for a device with no previous network frequency plan knowledge

The CNU has a timing acquisition accuracy

Remove the following parameters from the table - they have no numeric values. These should become hard requirements in the text itself:
Carrier Frequency Acquisition
Sampling rate
OFDM RF Transmission Synchronization

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
I agree these are mostly definitions and should be in the section text not a table. I don't see any as being part of testing.
See remein_3bn_21_0115.pdf

Cl **101** *SC* **101.4.3.3** *P* **147** *L* **46** # 2804

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED 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 refering to registers refer instead to variable names. This avoids the implication that Cl 45, which is optional, is instead required.

Cl **101** *SC* **101.4.3.3** *P* **147** *L* **52** # 2805

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"All devices in an EPoC network" - do you mean "all CNUs" ?

SuggestedRemedy

Change to read "All CNUs"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
All CNUs and the CLT in the EPoC network …"

Cl **101** *SC* **101.4.3.3** *P* **148** *L* **1** # 2806

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.3.3** *P* **148** *L* **27** # 2808

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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?

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See table 100-2 Encompassed spectrum 22 to 190 MHz for requirement

Cl **101** *SC* **101.4.3.3.3** *P* **148** *L* **28** # 2807

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
This 22 MHz band

Cl **101** *SC* **101.4.3.3.4** *P* **148** *L* **32** # 2809

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

Remove "1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Correct it should be excluded ;-)

Cl **101** *SC* **101.4.3.3.4** *P* **148** *L* **34** # 2811

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Should the commentor submit a figure it will be considered.

Cl **101** *SC* **101.4.3.3.4** *P* **148** *L* **34** # 2810

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

Change to "EPoC PHY shall not transmit energy"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
An EPoC PHY shall not transmit energy

Cl **101** *SC* **101.4.3.4** *P* **148** *L* **43** # 2812

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.4** *P* **148** *L* **44** # 2813

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

"Ref 102.2" should be "see 102.2"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.4** *P* **149** *L* **1** # 2814

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED 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.

Cl **101** *SC* **101.4.3.5** *P* **149** *L* **40** # 2815

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.5** *P* **149** *L* **41** # 2816

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED 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)

Cl **101** *SC* **101.4.3.5** *P* **149** *L* **42** # 2817

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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"

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.5.1** *P* **149** *L* **52** # 2818

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Removing the shall from this statements removes the requirement, which is needed. In this case the statement makes the figure mandatory.

Cl **101** *SC* **101.4.3.5.1** *P* **150** *L* **7** # 2819

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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 be really 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 decription 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.

Proposed Response *Response Status* **W**

PROPOSED 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"

Cl **101** *SC* **101.4.3.5.2** *P* **151** *L* **22** # 2820

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D** *Review*

Scattered pilots have a nice figure showing how they are spread across different subcariers. 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. Overlapping between scattered and continuous pilots should be also demonstrated.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add reference to Figure 102-8 in 1)

Cl **101** *SC* **101.4.3.5.3** *P* **151** *L* **42** # 2821

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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.

Proposed Response *Response Status* **W**

PROPOSED 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.

Cl **101** *SC* **101.4.3.5.4** *P* **152** *L* **10** # 2822

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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 descriing the allowed tolerances for the uniformity or how the palcement of individual pilots is transfered to CNU.

Proposed Response *Response Status* **W**

PROPOSED 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"

Cl **101** *SC* **101.4.3.5.4** *P* **152** *L* **13** # 2823

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D** *Review*

"The CLT ensures that there are no isolated active OFDM spectral regions that are not covered by continuous
pilots." - it would be just sufficient to specify the maximum allowed spacing between neighboring continuous pilots across OFDM spectrum and leave out such imprecise statements out.

SuggestedRemedy

Add a requirement on the maximum allowed spacing between neighboring continuous pilots across OFDM spectrum

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Such a requirement would not guarentee that the rule as stated would be fulfilled as there is no firm definition of a minimum size active spectral region.

Cl **101** *SC* **101.4.3.5.4** *P* **152** *L* **16** # 2824

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"It is not practical to predefine the locations of this set of continuous pilots because of exclusion bands and
excluded subcarriers." 0 unnecessary fluff. The standard says what it says and we do not need to explain why it does not say something else.

SuggestedRemedy

Remove.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.5.4** *P* **152** *L* **20** # 3076

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

We should be referring to variables not Cl 45 registers. "The CLT provides the continuous pilot placement definition via the 10GPASS-XR DS profile descriptor control registers (see 45.2.7a.1) using the PHY Link messaging formats contained in Clause 102."

SuggestedRemedy

Change to "The CLT provides the continuous pilot placement definition via the 10GPASS-XR DS profile descriptor variables DS_ModTypeSC(n) using the PHY Link EPoC message block format contained in 102.2.3.3." use live link

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.5.4** *P* **152** *L* **22** # 2825

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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.

SuggestedRemedy

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
PC using the following formula:" - they do not add anything to the specification

Proposed Response *Response Status* **W**

PROPOSED 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.

Cl **101** *SC* **101.4.3.5.4** *P* **152** *L* **35** # 3021

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.5.4** *P* **152** *L* **38** # 2827

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

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 maxi
mum 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.

SuggestedRemedy

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."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.5.4** *P* **152** *L* **45** # 2826

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D** *Review Param "M"*

"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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See remein_3bn_16_0115 and related comment 3077.

Cl **101** *SC* **101.4.3.5.4** *P* **152** *L* **45** # 3077

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review, Param "M"*

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.

SuggestedRemedy

Replace "M" 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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Correct file name is remein_3bn_16_0115.pdf
In Definition of CntPltS (pg 77 ln 9 change 6-bit to 7-bit)

Cl **101** *SC* **101.4.3.5.4** *P* **152** *L* **52** # 3078
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

The CLT shall follow Step 1 through Step 6 and Step 8
Should be 1-8

SuggestedRemedy

Change to read :The CLT shall follow Step 1 through Step 8:

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

Comment Type **E** *Comment Status* **D**

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 definiton exists (see 101.4.4.3.2)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.6.1** *P* **154** *L* **25** # 3080
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

We should be clear which "start of frame indication" we are referring to.

SuggestedRemedy

Change to "start of OFDM frame indication"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.6.1** *P* **154** *L* **25** # 3079
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

This statement is no longer true as we've moved the scrambler into the PMA
"Continually accepts a tx_unit (bit) from the PCS via the PMA_UNITDATA.request"

SuggestedRemedy

change to read:
"Continually accepts bits from the Scrambler"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

Comment Type **E** *Comment Status* **D**

Update reference (see Section 101.4.3.6.x)

SuggestedRemedy

to: (see Section 101.4.3.6.5)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

Comment Type **E** *Comment Status* **D**

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."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.6.1** *P* **154** *L* **39** # 3081

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

I expect this is done when the current symbol is filled and not when we exhaust the supply of bits:
"When all available data bits are mapped for the current symbol, the Symbol Mapper increments to the lowest active subcarrier of the next OFDM symbol."

SuggestedRemedy

to:
"When the last active subcarrier of the current symbol is completed, counter k is reset to 1 and begins processing the next OFDM symbol."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.6.2** *P* **155** *L* **46** # 3026

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

NI wrong format

SuggestedRemedy

italics with I subscripted.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.6.3** *P* **156** *L* **8** # 3025

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

References typically do not include titles and page number

SuggestedRemedy

remove title and page number.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.6.4** *P* **157** *L* **38** # 3082

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

This section is out of place, per block dia (fig 100-2) this should be above the scrambler.

SuggestedRemedy

Move to 101.4.3.6 and renumber.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.6.5** *P* **158** *L* **28** # 3083

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

The FCP calculation section has lots of little problems:
1) supplied wrong tense
2) increments a bit counter at the start - should be resets at the start
3) of each downstream superframe s/b frame not superframe)
4) bit counter should inc. w/ each bit in the frame
5) clumsy wording in para starting "This function calculates the next (new)"
5) The value s/b FCP not UpdateFCP

SuggestedRemedy

Reword per remein_3bn_17_0115.pdf (diff version in remein_3bn_17_0115 CMP.pdf_

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.7.1** *P* **158** *L* **49** # 3084

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.7.1** *P* **158** *L* **51** # 3086

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

This statement is not precisely correct as there is a separate time interleaver for the PHY Link.
"There is a single Time and Frequency interleaving function per OFDM channel."

SuggestedRemedy

Change to:
"There is a single Time and Frequency interleaving function per OFDM channel for the MAC data path."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.7.2** *P* **159** *L* **48** # 3027

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Rather than refer to the section we should refer to the equation here.
Change
Where, NI is the number of data subcarriers and scattered pilots in an OFDM symbol. See section
101.4.3.6.2.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.7.3** *P* **160** *L* **14** # 3088

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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."

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.7.3** *P* **160** *L* **9** # 3087
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

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."

SuggestedRemedy

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."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.7.3** *P* **162** *L* **25** # 3029
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

"m = L" should be in italics

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.7.3** *P* **163** *L* **17** # 3030
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Wording can be better than "follows the following process"

SuggestedRemedy

performs the following

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.7.4** *P* **163** *L* **48** # 3031
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

"note the some"

SuggestedRemedy

"note that some"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.9** *P* **165** *L* **13** # 3090
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

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)

SuggestedRemedy

remove table and subsequent ed note, and note ln 24-26.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.3.9** *P* **165** *L* **49** # 3032
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

In the following statement it is not clear what "this signal" is:
"This signal is described according to the following IDFT equation:"

SuggestedRemedy

Combine with previous para and reword as follows
"These OFDM/OFDMA signals are described in IDFT equation 101-18.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.4.12.1** *P* **177** *L* **49** # 3097

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

Another pesky Cl 45 ref.
"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).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.4.13** *P* **178** *L* **22** # 3039

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

shall us one?

SuggestedRemedy

shall use one

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.4.4** *P* **171** *L* **24** # 3096

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

Per Table 101-10 this TBD s/b 190 MHz

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.4.4** *P* **171** *L* **8** # 3034

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Table 101–11 ref s/b Table 101–16

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.4.4.2** *P* **171** *L* **34** # 3095

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

"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."
The TBD is 10 MHz and rather than referring to these as "assigned bit loading" we should use "Active subcarriers"

SuggestedRemedy

to:
"There is at least one contiguous 10 MHz or greater band of active subcarriers in any single 192 MHz OFDM channel."
Replace "TBD with "10" in two other places in this para.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.4.7** *P* **172** *L* **12** # 3036

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Wording "The Low Density Pilot resource element is modulated using either BPSK or 4 bits lower than normal, or which ever is higher"

SuggestedRemedy

to:
"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."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.4.7** *P* **172** *L* **8** # 3035

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

"modulated per the 10GPASS-XR US profile descriptor control (see 45.2.7a.2)" should be per US_ModTypeSC(n)

SuggestedRemedy

to read:
modulated per the US_ModTypeSC(n) variable where n is the subcarrier index.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.4.8.3** *P* **175** *L* **35** # 3037

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

strike note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.4.8.3** *P* **175** *L* **43** # 3038

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

This statement is no longer valid "DP is either data or pilot element."

SuggestedRemedy

strike

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.1** *P* **187** *L* **11** # 3041

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

We should introduce the PHY Link frame:
"Each frame is composed of message blocks"

SuggestedRemedy

To:
Both the US and the DS PHY Link include a frame structure. Each frame is composed of message blocks

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.1** *P* **187** *L* **15** # 3042

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

We should mention Probing in this introduction.

SuggestedRemedy

Add:
"The upstream superframe (see 101.4.4.3) begins with the Probe Period. CNU PHY Discovery responses and probing are performed during the Probing Period. The discovery response is used for initial CNU bring up and is fully described in 102.2.1.4. Probing is used to perform fine ranging and periodic link maintenance tasks and is described in 102.4.2."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.1** *P* **187** *L* **8** # 3040

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Introduce abbreviations:
"both the US and the DS directions"

SuggestedRemedy

to
"both the upstream (US) and the downstream (DS) directions

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.1** *P* **187** *L* **9** # 3102

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

This was changed recently: "In a multi OFDM channel PHY each OFDM channel has a PHY Link."

SuggestedRemedy

to
"In a multi OFDM channel PHY only OFDM channel one has a PHY Link."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.1** *P* **188** *L* **24** # 3163

Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **D** *Review*

Need a high level requirement that states the CLT and CNU support both US and DS PHY Link

SuggestedRemedy

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."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.1.1** *P* **188** *L* **5** # 3103

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.1.2** *P* **189** *L* **3** # 3157

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

Figures 102-3 and 102–4 needs a clearer representation of Probe and PHY Discovery receiver/generator

SuggestedRemedy

Replace with figures in remein_3bn_19_0515.pdf section 102.4.2.6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Use ammended figures in remein_3bn_22_0115.pdf
Optionally may want to leave Probe Rcv kfunction off altogether as it carries no data per se'

Cl **102** *SC* **102.1.3** *P* **190** *L* **32** # 3104

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

Still have four but different than those listed here:
"In the downstream direction there are four message blocks; the Timestamp message block, the EPoC PHY Frame Header, the EPoC message block, and the FEC Parity message block."

SuggestedRemedy

To:
"In the downstream direction there are four message blocks; the EPoC PHY Frame Header (EPFH), the EPoC Probe Control Header (EPCH), the EPoC message block, and the FEC Parity message block."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.1.3** *P* **190** *L* **35** # 3105

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
There may be some question regarding the Probes being part of the PHY Message Engine

Cl **102** *SC* **102.1.3** *P* **190** *L* **41** # 3106
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

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

I don't know.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
No suggested remedy

Cl **102** *SC* **102.1.4** *P* **194** *L* **23** # 3043
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

EDITORS NOTE (to be removed prior to publication): In draft 1.0 the figure above was redrawn in native FrameMaker format and to be consistent with other figures in this series, original authors are advised to review.
By now this should have happened.

SuggestedRemedy

Strike EDITORS NOTE

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.1.1** *P* **196** *L* **36** # 3107
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.1.2** *P* **197** *L* **32** # 3044
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Ref should be Table 100-1 not Figure 100-1
under PHY Link CLT Tx / CNU Rx in Figure 100–1.

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.1.3** *P* **197** *L* **40** # 3045
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

u_i should be ui with i subscripted

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.1.3** *P* **198** *L* **18** # 3046
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

are then be time interleaved

SuggestedRemedy

are then time interleaved

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.2** *P* **199** *L* **28** # 3108

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.3.1** *P* **203** *L* **6** # 3110

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

There are at least four instances of the following statement in clause 102 "The contents of the [message block name] is protected by a CRC(32). See 3.2.9 for a description of how this field is calculated". In no case do we describe what action should be taken or not taken if the CRC does not match.

SuggestedRemedy

Remove existing statements and add the following para at the end of section 102.2.3
The contents of the each message block is protected by a CRC(32). See 3.2.9 for a description of how this field is calculated. The CNU shall calculate a CRC(32) on the data fields within each message block received and, if the calculated CRC(32) does not match the received CRC(32) discard the message and take no action based on it.
Add the following to the end of section 102.3.3.
The contents of the each message block is protected by a CRC(32). See 3.2.9 for a description of how this field is calculated. The CLT shall calculate a CRC(32) on the data fields within each message block received and, if the calculated CRC(32) does not match the received CRC(32) discard the message and take no action based on it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.3.2.1** *P* **204** *L* **2** # 3109

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

Confusion
"The remaining subfields set per the corresponding"

SuggestedRemedy

To:
"The remaining subfields set the corresponding"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.3.2.3** *P* **205** *L* **4** # 3119
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.6.2** *P* **207** *L* **22** # 3047
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

duplicate types

SuggestedRemedy

remove the latter.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.6.3** *P* **207** *L* **35** # 3111
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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"

SuggestedRemedy

Change
first FEC codeword
to
first MAC data FEC codeword

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.6.7** *P* **210** *L* **1** # 3112
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

Update to Figure 102-16

SuggestedRemedy

See text and figure from remein_3bn_19_0515.pdf for section 102.2.6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.3.1.2** *P* **211** *L* **14** # 3113
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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."

SuggestedRemedy

change may to shall

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.3.2.2.1** *P* **213** *L* **3** # 3048
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Originally we were intending to send PHY Discovery response in the PHY Link so "normal data transfers" made sense. This is not longer the case.
"For normal data transfers the upstream PHY Link shall use a (384,288) binary punctured LDPC code described in 102.1.4.2.1."

SuggestedRemedy

To:
"The upstream PHY Link shall use a (384,288) binary punctured LDPC code described in 102.1.4.2.1."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.3.4** *P* **213** *L* **6** # 3164
Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **D** *Review*

We haven't specified what the data pattern for these PHY Link pilots are.

SuggestedRemedy

Add an Ed note that the data pattern for these US Pilots is needed.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
It would be better to resolve this during the meeting.

Cl **102** *SC* **102.3.5.4** *P* **210** *L* **25** # 3049
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

RndDly(r) - this function is not used here.

SuggestedRemedy

Move to 102.4.1.7.4 Functions

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.3.5.7** *P* **215** *L* **1** # 3114
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

Update for SD Figure 102–18

SuggestedRemedy

See text and figure from remein_3bn_19_0115.pdf section 102.3.5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4** *P* **215** *L* **40** # 3115
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.1.1** *P* **215** *L* **46** # 3116
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.1.4** *P* **217** *L* **12** # 3118
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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."

SuggestedRemedy

to
Each CNU selects a random number of PHY Discovery windows it waits before transmitting the PHY Discovery Response.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.1.4** *P* **217** *L* **21** # 3117

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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 ..."

SuggestedRemedy

to
"The PHY Discovery Response shall be contained in a spectrum of 128 contiguous subcarriers ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.1.4** *P* **217** *L* **34** # 3099

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

In Figure 102–20 "US Frame" should be US Superframe

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.1.4** *P* **217** *L* **6** # 3050

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

We no longer have a PHY Discovery Instruction

SuggestedRemedy

remove phrase

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.1.4** *P* **218** *L* **1** # 3120

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

When adding the SD we included a CRC with the PHY Discovery Response.
"only data included is the CNU MAC address"

SuggestedRemedy

to
"only data included is the CNU MAC address protected by a CRC(32)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.1.4** *P* **218** *L* **20** # 3142

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

We should be consistent with the use of variable names such as Ncp & Nrp. In this para they are clearly associated with DS.
See similar comments against Cl 100

SuggestedRemedy

Change NCP (subscripted) 5x in Fig 102-21 to US_Ncp (no subscripting)

Change NRP(subscripted) in Fig 102-21 to US_Nrp (no subscripting)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.1.4** *P* **218** *L* **20** # 3121

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

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."
to:
"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 (per variables US_Ncp and US_Nrp respectively) as illustrated in Figure 102–21."

In Table 102-3 add entries for US_Ncp and US_Nrp:
US time interleaving | US OFDM control | 1.1907.10:7 | US_TmIntrlv | 7 | 10:7
US windowing | US OFDM control | 1.1907.6:4 | US_Nrp | 7 | 6:4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.1.6** *P* **219** *L* **19** # 3158

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.1.6** *P* **219** *L* **34** # 3122

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

Change variable names to NewCNU_MAC0 through NewCNU_MAC2
Change Read to Write

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.1.7.7** *P* **221** *L* **11** # 3123

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *Review*

This SD needs to be aligned to the EPCH added in the last round.

SuggestedRemedy

See updated text and figure in remein_3bn_19_0115.pdf section 102.4.1.7
Can we get rid of the TBD?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Leave TBD in for now

Cl **102** *SC* **102.4.2.1** *P* **221** *L* **44** # 3124

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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)?

SuggestedRemedy

Add:
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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.2.3** *P* **222** *L* **13** # 3125
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

It would be better if we used the proper variable names in this statement:
"The CNU uses the start subcarrier and subcarrier skipping parameters"

SuggestedRemedy

to
"The CNU uses the PrbStrtSC and PrbSkp variable"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.2.3** *P* **222** *L* **7** # 3051
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

We should be consistent in our reference to this: "EPoC Probe Control"

SuggestedRemedy

Add "Header"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.2.3** *P* **223** *L* **26** # 3126
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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."

SuggestedRemedy

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."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.2.4** *P* **224** *L* **46** # 3187
Laubach, Mark Broadcom

Comment Type **E** *Comment Status* **D**

Space missing.

SuggestedRemedy

Change "plus1" to "plus 1".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.2.6** *P* **225** *L* **24** # 3127
Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

This this is confusing:
"When this CNU_ID is contained in this set of variables the CNU is allowed to transmit ..."

SuggestedRemedy

to:
"When the value of the CNU_ID of the CNU is contained in this set of variables the CNU is allowed to transmit ..."
This change is included in remein_3bn_19_0115.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.2.6** *P* **226** *L* **6** # 3052
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Misplaced variable name PrbID.

SuggestedRemedy

remove.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.2.6** *P* **226** *L* **9** # 3128

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

A reasonable restriction on StrtSym & SymNum is that their sum be <= 6

SuggestedRemedy

Add the following to the description of both variables:
"The sum of StrtSym and SymNum is less than or equal to six."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.3** *P* **227** *L* **46** # 3053

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

EDITORS NOTE has served it's purpose. Ref to Table 102-12 in error

SuggestedRemedy

remove note
add live ref to Table 102-13

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.2.2.1** *P* **246** *L* **11** # 2847

Zhang, Jin Marvell Semiconductor

Comment Type **TR** *Comment Status* **D**

FEC_PARITY_SIZE value needs to be determined.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.2.2.1** *P* **246** *L* **16** # 2848

Zhang, Jin Marvell Semiconductor

Comment Type **TR** *Comment Status* **D**

FEC_PAYLOAD_SIZE needs to be determined

SuggestedRemedy

The value should be 1760.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.2.2.1** *P* **246** *L* **6** # 2845

Zhang, Jin Marvell Semiconductor

Comment Type **T** *Comment Status* **D** *Review*

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: FRACTIONI
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)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
As proposed for FEC_CODEWORD_SIZE

For FEC_CODEWORD_SIZE_FRAC:

FEC_CODEWORD_SIZE_FRAC
TYPE: real number
This constant represents the exact size of the FEC codeword in octets. The value is rounded to TBD decimal places.
Value: 1986.461538461538 (1760+2944/13)

It would be good to determine a precission during the meeting

Cl **103** *SC* **103.2.2.3** *P* **247** *L* **14** # 2846

Zhang, Jin Marvell Semiconductor

Comment Type **T** *Comment Status* **D** *Review*

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

SuggestedRemedy

fecOffset
TYPE: 32 bit unsigned*f*n
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).

Proposed Response *Response Status* **W**

PROPOSED REJECT.
There is no definition of the following terms:
Octet_CLK,
derating_timer,
initial_derating_delay

Cl **103** *SC* **103.2.2.3** *P* **249** *L* **4** # 2840

Zhang, Jin Marvell Semiconductor

Comment Type **T** *Comment Status* **D**

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

SuggestedRemedy

Remove these two variables.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Need to ID a new home for Eq 103-1. Place under PMD_Overhead definition (see Comment # 2844)

Cl **103** *SC* **103.2.2.4** *P* **250** *L* **11** # 2844

Zhang, Jin Marvell Semiconductor

Comment Type **T** *Comment Status* **D** *Review*

The definition of PMD_Overhead function needs to be updated in accordance with the diagram of CLT control multiplexer

SuggestedRemedy

PLease see the attached text zhang_3bn_02_0115.pdf, also available in .docx format.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.2.2.7** *P* **255** *L* **1** # 2843

Zhang, Jin Marvell Semiconductor

Comment Type **T** *Comment Status* **D** *Review*

Fig. 103-12, the diagram of CLT control multiplexer needs to be updated to take into account the PMD derating overhead.

SuggestedRemedy

Use the modified CLT control multiplexer diagram as attached in zhang_3bn_01_0115.pdf, also available in .vsd format.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.3.3** *P* **259** *L* **11** # 3160

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.3.5 Gate** *P* **275** *L* **38** # 3159

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

I believe this phrase was added to accommodate TDD and shoul be removed; "and the DA field differs from the local address of the CLT"

SuggestedRemedy

remove the phrase

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.3.6.2** *P* **286** *L* **16** # 3161

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.3.6.2** *P* **287** *L* **2** # 3166

Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **D** *Review*

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[]

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.5.4.2** *P* **296** *L* **31** # 3162

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

OM5 pointing to incorrect section (103.3.3.4)
OM6 pointing to incorrect section (103.3.3.5)

SuggestedRemedy

Change to 103.3.4
Change to 103.3.5
resp.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2** *P* **27** *L* **5** # 3055

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Due to changes that will be introduced in 802.3 2015 para and register numbering may become incorrect.

SuggestedRemedy

Add editors note:
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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **30** *L* **3** # 2765

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

I believe 802.3bj was published in June 2014

SuggestedRemedy

Change publication date for 802.3bj globally, and make sure it is now part of the frontmatter with the proper scope statement.

Proposed Response *Response Status* **W**

PROPOSED 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 32 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."

Change editing instruction pg 32 ln 45 to read:
"Change Table 45–7 as follows:"
Add:
"EDITORS NOTE (to be removed prior to publication): align Table 45-7 with 802.3 2015 after ballotted."

Change editing instruction pg 33 ln 1 to read:
"Insert 45.2.1.13b and Table 45–15b below the last paragraph in 45.2.1.13a"
Add:
"EDITORS NOTE (to be removed prior to publication): align Editing Instruction above and Table 45-15b with 802.3 2015 after ballotted."

Cl **45** *SC* **45.2.1.109** *P* **38** *L* **20** # 2766

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

Title of 45.2.1.109.1 reads: "DS OFDM freq ch1" but the register name is "DS OFDM freq ch 1" in Table 45–78c - note the extra space between "ch" and "digit"

SuggestedRemedy

Align the subclause heading names with the names of registers

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.109.1** *P* **38** *L* **21** # 3056

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Errant comma: 1.1902,15:0

SuggestedRemedy

Changed to 1.1902.15:0

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.110** *P* **39** *L* **3** # 3057

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

The assignment is not are

SuggestedRemedy

Changed all "assignment ... are" to "assignment .... is"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.110** *P* **39** *L* **5** # 2730

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

The draft still has plenty of empty lines

SuggestedRemedy

Exercise the draft and remove unnecessary empty lines

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.110.1** *P* **38** *L* **44** # 2767

Hajduczenia, Marek Bright House Network

Comment Type **ER** *Comment Status* **D**

The text of the NOTE does not have a proper style. See 802.3-2012, section 1, page 56, for proper style.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
s/b pg 39
Replace "Note: " with "NOTE-"

Cl **45** *SC* **45.2.1.112** *P* **40** *L* **29** # 2731

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **D**

"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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.112** *P* **40** *L* **35** # 3132

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

Table 45–78f should only address register 1.1909

SuggestedRemedy

Replaced instances of "1.1910." with "1.1909."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.115** *P* **42** *L* **11** # 3058

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.115** *P* **45** *L* **43** # 3066

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

(Register should be plural

same for 45.2.1.123, 45.2.1.124 & 45.2.1.125, 45.2.1.126, 45.2.1.127, 45.2.7a.1, 45.2.7a.2, and 45.2.7a.3

SuggestedRemedy

Changed to (Registers

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.116.1** *P* **43** *L* **2** # 3059

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

The CNU_ID assigned flag is used ... should refer to the register number not the name.

SuggestedRemedy

Change to:
The value of bit 1.1915:15 is used

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.116.2** *P* **43** *L* **10** # 3060

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

The Allowed CNU_ID bits ... should refer to the register number not the name.

SuggestedRemedy

Change to:
The value of bits 1.1915:14 through 1.1915:0 are used to

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.117.1** *P* **43** *L* **44** # 3133

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D** *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 45-78l

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.118** *P* **43** *L* **46** # 3061

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Should be L5 header not L4.
Also reword to refer to register bits not name

SuggestedRemedy

Change from:
45.2.1.118New CNU MAC 0 through 2 (1.1917.15:0 through 1.1919.15:0)
The New CNU MAC registers hold the MAC address of the CNU corresponding to Allowed CNU_ID (see
45.2.1.116) with register 1.1917.0 being the LSB and 1919.15 being the MSB.

to
45.2.1.117.2 New CNU MAC 0 through 2 (1.1917.15:0 through 1.1919.15:0)
Register bits 1.1919:15 through 1.1917.0 hold the MAC address of the CNU corresponding to Allowed CNU_ID (see 45.2.1.116) with register 1.1917.0 being the LSB and 1.1919.15 being the MSB.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.119** *P* **44** *L* **1** # 3063

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

IEEE style guide precludes sub-section with only one section. Combine Sections 45.2.1.119 and 45.2.1.119.1

SuggestedRemedy

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.120** *P* **44** *L* **21** # 3062

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Missing Registers

SuggestedRemedy

Change (1.1922 and 1.1923) to (Registers 1.1922 and 1.1923)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.120** *P* **44** *L* **22** # 3064

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

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 and bit 1.1923.15 is the MSB. A negative value causes the timing of the CNU transmissions to be delayed. The PHY timing offset register is used to align the CNU to the upstream OFDM timing. For more information on the use of this register see 102.4. The assignment of bits in the PHY timing offset bit registers is shown in Table 45–78n.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
5.2.1.120 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.

Cl **45** *SC* **45.2.1.120** *P* **44** *L* **23** # 2732

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

missing "." at the end of "The assignment of bits in the PHY timing offset bit registers is shown in Table 45–78n"

SuggestedRemedy

Per comment. Same in 45.2.1.121

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.121** *P* **45** *L* **1** # 3065

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

IEEE style guide precludes sub-section with only one section. Combine Sections 45.2.1.121 and 45.2.1.121.1

SuggestedRemedy

Remove section 45.2.1.121.1 and change section to read
45.2.1.121 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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.123** *P* **45** *L* **45** # 2733

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **D**

"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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to 3137

Cl **45** *SC* **45.2.7a** *P* **48** *L* **15** # 3165

Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **D** *Review*

We currently only have sufficient registers deifined 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 OPFDM 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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See remein_3bn_23_0115.pdf

Cl **45** *SC* **45.2.7a.1** *P* **49** *L* **31** # 3067

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Footnote regarding “Continuous pilot” to BPSK has served it's purpose.
Also on Pg 50 line 46

SuggestedRemedy

Removed footnotes

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.7a.1** *P* **49** *L* **31** # 3068

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **D**

Editors note has served it's purpose.

SuggestedRemedy

Remove

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.7a.2** *P* **50** *L* **20** # 2734

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **D**

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.7a.3.1** *P* **51** *L* **49** # 3098

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **D**

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.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.