

Cl 100 SC 100.1 P 66 L 1 # 2661
Laubach, Mark Broadcom Corporation

Comment Type ER Comment Status D

This is an editor's comment: there are previously embedded conditionals in this clause file.

SuggestedRemedy

Confirmed with Joe Solomon. Can remove all conditional tags and any text in Clause 100 fm file.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 100 SC 100.2.11.2.1 P 84 L 36 # 2659
Laubach, Mark Broadcom Corporation

Comment Type ER Comment Status D

Table note #3 not referenced in Table 100-5 and appears to be dangling as a mistake. Suggest making it more clear that this applies to all CNR values like notes 1 and 2.

SuggestedRemedy

Line 38, replace superscript "1,2" with just "1". Page 85 Line 1 through 4, collapse into single table note 1.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 100 SC 100.2.8.1 P 73 L 37 # 2434
Hajduczenia, Marek Bright House Network

Comment Type TR Comment Status A

"Occupied bandwidth (Occupiedbandwidth) is the sum of the bandwidth (RF spectrum) in all channel frequency allocations (e.g., 6 MHz channelsize) that are occupied by the OFDM channel (OFDMchannelbandwidth). Even if one active subcarrier of an OFDM channel is placed in a given standard channel frequency allocation, that standard channel frequency allocation in its entirety is said to be occupied by the OFDM channel" - definition does not correspond to equation 100-1

SuggestedRemedy

Equation indicates that occupied bandwidth is a product of 6MHz channel size and ceiled number of 6MHz channels fitting into a single OFDM channel. That is dramatically different from the definition written in words.

Also, some vague terms without any definition and meaning "standard channel frequency allocation"

Seems that the second sentence in the definition is not connected with occupied bandwidth in any way and fits more into OFDM channel definition: Even if one active subcarrier of an OFDM channel is placed in a given standard channel frequency allocation, that standard channel frequency allocation in its entirety is said to be occupied by the OFDM channel" - either remove it or move it to definition of OFDM channel

Response Response Status W

ACCEPT IN PRINCIPLE.

The equation is correct. The ceiling of 6.05 MHz with a significance of 6 produces 12 as a result. This behavior corresponds to the text following "Even if one active subcarrier." change divide symbol to forward slash "/".

Cl 100 SC 100.2.8.1 P 73 L 44 # 2670
Laubach, Mark Broadcom Corporation

Comment Type ER Comment Status D

Typos and editor note no longer needed

SuggestedRemedy

- 1) Change ".Occupiedbandwidth" to "Occupied bandwidth" in equation on line 44.
- 2) Remove editor's note on line 46.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 100 SC 100.2.8.1.1 P 74 L 26 # 2438
Hajduczenia, Marek Bright House Network

Comment Type TR Comment Status A

Awkward wording starting with the words "For purposes of spurious emissions requirements, the "commanded transmit power per channel" for an equivalent 6 MHz channel is computed as follows:" until line 36

SuggestedRemedy

Change to the following:

CLT is configured with a number of parameters, namely:
-number of 6 MHz channels, and power level for each 6 MHz channel
-for each OFDM channel: total power for each 6 MHz channel + 10log10(Number of occupied 6 MHz channels) for that OFDM channel.
Using these configured parameters, the CLT calculates the commanded transmit power per channel for an equivalent 6 MHz channel, using the following information:
-power for data subcarrier and pilots (calculated using total number of active subcarriers),
-power in 400 kHz of spectrum containing the PHY Link,
-power calculated for the 6 MHz band centered on the PHY Link is the commanded average power of an equivalent 6 MHz channel for that OFDM channel

Response Response Status W

ACCEPT IN PRINCIPLE.

Change:

"For purposes of spurious emissions requirements, the "commanded transmit power per channel" for an equivalent 6 MHz channel is computed as follows:"
to

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

CI 100 SC 100.2.8.1.1 P 74 L 46 # 2656
Laubach, Mark Broadcom Corporation

Comment Type ER Comment Status D

editors note no longer needed

SuggestedRemedy

remove editors note

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 100 SC 100.2.8.1.1 P 76 L 48 # 2441
Hajduczenia, Marek Bright House Network

Comment Type TR Comment Status A

A lot of notes under Table 100-1./2/3 cover the testing conditions, and how individual parameters are verified in lab conditions

SuggestedRemedy

Test conditions and verification process should be described in a subclause on measurements, similar to 75.7 Definitions of optical parameters and measurement methods. This is how specs are typically structured in 802.3. We do not mix testing and measurement description in the section with requirements.

Response Response Status W

ACCEPT IN PRINCIPLE.

Add editors note:

EDITORS NOTE (remove prior to publication): Test conditions and verification process should be described in a subclause on measurements, similar to 75.7 Definitions of optical parameters and measurement methods. This is how specs are typically structured in 802.3. We do not mix testing and measurement description in the section with requirements.

CI 100 SC 100.2.8.1.1 P 78 L 32 # 2657
Laubach, Mark Broadcom Corporation

Comment Type ER Comment Status D

Line 32: wrong text font.
Line 50 and 51: extra "-"

SuggestedRemedy

Line 32: Fix text font.
Line 50 and 51: remove "-" before "channel".

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 100 **SC 100.2.8.1.1** **P 80** **L 37** # **2658**
 Laubach, Mark Broadcom Corporation

Comment Type ER **Comment Status D**

Table 100-3 header problem, equation should not be header. This is a framemaker problem. Also need to changing "ceiling[]" to appropriate ceiling symbol brackets.

SuggestedRemedy

Move equation out of table cell into numbered equation paragraph. Change the "ceiling[]" notation to the appropriate ceiling brackets in the equation symbol editor.

Add a new paragraph before the new equation. "Equation 100-x is used to generate the dBc values enumerated in Table 100-3. The ceiling function used in this equation 100-x rounds to the next higher 0.5 dBc. For example, the ceiling of -63.9 will produce -63.5 as a result."

Delete table note 1 on page 81 line 38 and renumber.

Proposed Response **Response Status W**

PROPOSED ACCEPT.

CI 100 **SC 100.2.8.2** **P 77** **L 28** # **2660**
 Laubach, Mark Broadcom Corporation

Comment Type ER **Comment Status D**

Change "ceil[]" to appropriate symbol brackets for ceiling lines 28/29 and 32/33. Missing right parens line 32.

SuggestedRemedy

Either find an acceptable symbol font that has ceiling brackets or convert equation to Framemaker unnumbered equation. On lin 32, change was looks like a double quote to a single quote and right parens: ')

Proposed Response **Response Status W**

PROPOSED ACCEPT.

CI 100 **SC 100.2.9** **P 81** **L 50** # **2450**
 Hajduczenia, Marek Bright House Network

Comment Type ER **Comment Status D**

Plenty of empty subclauses - all of these should be marked with TBDs to make sure that they do not spli through cracks.

SuggestedRemedy

Per comment

Proposed Response **Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

The presentation on Upstream Electrical Requirements will also address modification of these empty subclauses under subclause 100.2.9

CI 100A **SC CV.2** **P 273** **L 10** # **2518**
 Hajduczenia, Marek Bright House Network

Comment Type ER **Comment Status D**

Titles and template of this Annex is off. Please use the official template

SuggestedRemedy

Update headings in this annex to match proper numbering. Fix figure numbering.

Proposed Response **Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

The annex was generated from the latest template available at the time. Possible formatting was mixed up along the way. Formates will be updated per current template.

CI 101 **SC 101.1** **P 89** **L 5** # **2640**
 Remein, Duane Huawei Technologies

Comment Type T **Comment Status D**

Need to expand mapping table for variable to CI 45 registers

SuggestedRemedy

See remein_3bn_14_1114.pdf

Proposed Response **Response Status W**

PROPOSED ACCEPT.

CI **101** SC **101.3.2.4** P **103** L **18** # **2716**
 Kliger, Avi Broadcom
 Comment Type **T** Comment Status **D**
 In the US/DS column in Table 101-4 the two lower codes should be US and not DS
 SuggestedRemedy
 correct DS/US in Table 101-4 accordingly
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **101** SC **101.3.2.5.3** P **108** L **40** # **2662**
 Laubach, Mark Broadcom Corporation
 Comment Type **TR** Comment Status **D**
 If approved in another comment, the Scrambler will move to the PMA Symbol Mapper.
 The bottom of the figure then needs to be updated as well as incorporate new process into
 FEC encoder that performs PMA Client function directly given data paths are a bit stream.
 SuggestedRemedy
 Replace the "Scrambler" text from the bottom box in the figure and replace with "Transmit
 To PMA".

 As per laubach_3bn_13_1114.pdf page 1:
 1) Add new variables to 101.3.2.5.9 Variables
 2) Add new function to 101.3.2.5.10 Functions
 3) Add new figure 101-10 for Transfer to PMA.

 As per laubach_3bn_14_1114.pdf:
 1) Add transferToPMA() to bottom of CALCULATE_CRC40_AND_PARITY state and
 fix typo, change FEC_DS_CodeWordSize to Fc

 Section 100.1.4, Page 68, Line 17: remove Gearbox functional block, no longer needed in
 downstream as per 49.2.7.

 Section 101.3.3.1.3, Page 116, Line 39. Change remove box and (DE)SCRAMBLER,
 replace with PMA_UNITDATA.indication()

 As per laubach_3bn_17_1114.pdf:
 1) Add and update to 101.3.3.1.4 Variables
 2) Add function to 101.3.3.1.5 Functions
 3) Add new figure before Figure 101-12 for Transfer from PMA

 Section 101.3.3.1.7, Page 116, line, replace state diagram with
 laubach_3bn_18_1114.pdf. This fixes changes that should have been submitted last
 comment round for remove CQ blocking. This adds:
 1) call to transferFromPMA()
 2) corrects FEC counters as per text remedy in earlier comment this found
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.
 Note this comment affects cl 101 & cl 100 so editor changed from CI 101 to CI 00.
 Modification to Fig 101-7 is available in file remein_3bn_02_1114.pdf
 Modification to Fig 101-11 is available in file remein_3bn_03_1114.pdf

Cl 101 **SC 101.3.2.6** **P 113** **L 39** # **2667**
Laubach, Mark Broadcom Corporation

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

Scrambler being moved from PCS to PMA. Need to clarify synchronization and initialization to downstream frame.

Section 101.4.3.6 Symbol Mapper introduction, needs to be updated for PMA_UNITDATA.request information, as well as symbol mapper use and initialization, as well as NCP calculation.

SuggestedRemedy

As per laubach_3bn_12_1114.pdf:
1) Section 101.3.2.6 moved to Section 101.4.3.6.4
2) 101.4.3.6.1 Introduction updated
3) 101.4.3.6.5 "NCP calculation" added

Proposed Response **Response Status** **W**

PROPOSED ACCEPT.

Changed to section 101

Cl 101 **SC 101.3.3.1.2** **P 115** **L 25** # **2642**
Remein, Duane Huawei Technologies

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

We indicate there is a user configurable variable but never identify it.

SuggestedRemedy

Create a variable CRC40ErrCtrl and include in MDIO Mapping table (see remein_3bn_14_1114.pdf).
Change wording from:
The FEC decoder in the CNU shall provide a user-configurable option to indicate an uncorrectable FEC codeword (due to an excess of symbols containing errors) to higher layers. If this user-configurable option is enabled and the calculated value of CRC40 does not match the value of CRC40 retrieved from the received FEC codeword, the FEC decoder replaces bit <0> and <1> in the sync headers in all 64B/66B blocks with the binary value of "11". If this user-configurable option is enabled and the calculated value of CRC40 does not match the value of CRC40 retrieved from the received FEC codeword the FEC decoder indicates an error to the PCS by replacing bit <0> and <1> in the sync header with the binary value of "11" in the first 64B/66B block and every 8th 64B/66B block, e.g. 1st, 9th, 17th, 25th, etc. as well as the last 64B/66B block from the errored FEC codeword.

To:
The FEC decoder in the CNU shall provide a user-configurable option (variable CRC40ErrCtrl) to indicate an uncorrectable FEC codeword (due to an excess of symbols containing errors) to higher layers. If CRC40ErrCtrl is enabled and the calculated value of CRC40 does not match the value of CRC40 retrieved from the received FEC codeword, the FEC decoder replaces bit <0> and <1> in the sync headers in all 64B/66B blocks with the binary value of "11". If CRC40ErrCtrl is enabled and the calculated value of CRC40 does not match the value of CRC40 retrieved from the received FEC codeword the FEC decoder indicates an error to the PCS by replacing bit <0> and <1> in the sync header with the binary value of "11" in the first 64B/66B block and every 8th 64B/66B block, e.g. 1st, 9th, 17th, 25th, etc. as well as the last 64B/66B block from the errored FEC codeword.

Proposed Response **Response Status** **W**

PROPOSED ACCEPT.

CI 101	SC 101.3.3.1.7	P 119	L 13	# 2668
Laubach, Mark		Broadcom Corporation		
Comment Type	TR	Comment Status	D	Fig 101-12
1) Line 12-15 FEC statistics counter initialization in the wrong place.				
2) Line 41, both FEC statistics increments are inside the block count loop, these each need to be moved to a separate state placed between DECODE_CALCULATE_CRC40 and DECODE_FAIL and DECODE_SUCCESS to be outside the loop.				
SuggestedRemedy				
1) Move the lines: "FecCodeWordCount <= 0 FecCodeWordFail <= 00 FecCodeWordSuccess <= 0" into the INIT block.				
2) Create a new state between DECODE_CALCULATE_CRC40 and DECODE_FAIL, labeled COUNT_FAIL. Move FecCodeWordFail ++ from DECODE_FAIL to the new COUNT_FAIL. Exit COUNT_FAIL to DECODE_FAIL with a UCT. Create a new state between DECODE_CALCULATE_CRC40 and DECODE_SUCCESS, labeled COUNT_SUCCESS. Move FecCodeWordSuccess ++ from DECODE_SUCCESS to the new COUNT_SUCCESS. Exit COUNT_SUCCESS to DECODE_SUCCESS with a UCT. Note these changes may take some creative rearranging of the diagram to fit on one page.				
Proposed Response		Response Status W		
PROPOSED ACCEPT.				
The editor believes this fix is shown in laubach_3bn_18_1114.pdf. Author to confirm. See cmt 2644				

CI 101	SC 101.3.3.1.7	P 119	L 9	# 2644
Remein, Duane		Huawei Technologies		
Comment Type	T	Comment Status	D	Fig 101-12
Seems odd that FecCodeWordCount, FecCodeWordFail, & FecCodeWordSuccess get reset on every FEC codeword that is decoded.				
SuggestedRemedy				
Move these assignments to INIT state. Author to verify these then don't get reset if we loose FEC alignment.				
Proposed Response		Response Status W		
PROPOSED ACCEPT. See cmt 2668				

CI 101	SC 101.3.3.2	P 120	L 26	# 2608
Remein, Duane		Huawei Technologies		
Comment Type	T	Comment Status	D	
Blank section.				
SuggestedRemedy				
Move the para from pg 115 ln 25 starting "The FEC decoder in the CNU shall provide a user-configurable option to indicate ... " to 101.3.3.2.				
Replace the moved test in 101.3.3.1.2 with "The FEC decoder maintains error monitors to detect FEC codeword successes and failures. See 101.3.3.2 for details.				
Proposed Response	Response Status		W	
PROPOSED ACCEPT.				

CI 101	SC 101.4.2.1.2	P 124	L 24	# 2601
Remein, Duane		Huawei Technologies		
Comment Type	T	Comment Status	D	DataRate
See related comment against 45.2.1.122 pg 44 ln22				
Add US/DS data rate variable to mdio mapping table				
SuggestedRemedy				
Shorten names to DS_DataRate & US_DataRate. see remein_3bn_14_1114.pdf				
Proposed Response	Response Status		W	
PROPOSED ACCEPT.				

CI 101	SC 101.4.2.2.1	P 125	L 8	# 2645
Remein, Duane		Huawei Technologies		
Comment Type	T	Comment Status	D	
This sentence makes it sound like we use burst transmission in the DS direction: "In the downstream direction, the burst received by the CNU is always a single FEC codeword of size FEC_DS_CodeWordSize bits."				
SuggestedRemedy				
Reword to: "In the downstream direction, the continuous data stream received by the CNU is always composed of single FEC codewords of size FEC_DS_CodeWordSize bits."				
Proposed Response		Response Status	W	
PROPOSED ACCEPT.				

CI **101** SC **101.4.2.5** P **124** L **52** # **2650**
 Remein, Duane Huawei Technologies

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

It is not clear what is meant by the statement "PMA_UNITDATA.indication is used by the client's synchronization process."

SuggestedRemedy

Add ed note after the para: EDITORS NOTE (to be removed prior to publication): a precise description of what is meant by "PMA_UNITDATA.indication is used by the client's synchronization process" is needed.

Proposed Response Response Status **W**

PROPOSED ACCEPT.
 Att Mark

CI **101** SC **101.4.2.7.3** P **139** L **14** # **2622**
 Remein, Duane Huawei Technologies

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

Given that this is a standard and not an implementation does this have any meaning?
 "approximately equal number of rows vs. columns works well"

SuggestedRemedy

Strike the sentence.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **101** SC **101.4.3.1** P **125** L **43** # **2646**
 Remein, Duane Huawei Technologies

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

The parenthetical "(excluded subcarrier)" is confusing in this context as adjacent channels will likely have overlapping excluded carriers.

SuggestedRemedy

Remove the parenthetical.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **101** SC **101.4.3.10** P **144** L **40** # **2648**
 Remein, Duane Huawei Technologies

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

This statement should refer to a system variable "NCP represents the DS cyclic prefix parameter [Tsd] as select from 10GPASS-XR DS OFDM control register (see 45.2.1.108) for the CLT." Nor should we use another name (Tsd) to refer to the same variable. Lastly we need to distinguish US from DS.

SuggestedRemedy

Change to read:

"The variable DS_Ncp represents the provisioned duration, in OFDM clocks, of the DS cyclic prefix parameter (see Table Ref) for the CLT."

Replace two instances of Tsd with DS_Ncp & US_Ncp (Table 101–12 & Table 101–20 resp).

Replace "NCP" with DS_Ncp" in this section (about 32 instances) and with US_Ncp in section 101.4.4.13. Note this removes painful subscripting.
 (see mdio mapping table in remein_3bn_14_1114.pdf)

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **101** SC **101.4.3.10** P **144** L **46** # **2649**
 Remein, Duane Huawei Technologies

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

This statement should refer to a system variable "The NRP samples at the start of this N-point IDFT are copied and appended ...". Also need to distinguish DS from US.

SuggestedRemedy

Change to read:

"The variable DS_Nrp represents the samples at the start of this N-point IDFT are copied and appended ..."

Replace two instances of Tsd with DS_Nrp & US_Nrp (Table 101–13 & Table 101–21 resp).

Replace NRP with DS_Nrp in this section (about 32 instances) and with US_Nrp in section 101.4.4.13. Note this removes painful subscripting.
 (see mdio mapping table in remein_3bn_14_1114.pdf)

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **101** SC **101.4.3.2** P **126** L **31** # **2613**
 Remein, Duane Huawei Technologies

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

1Change (4.8828125 ns) to

SuggestedRemedy
 (1/204.8MHz)

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **101** SC **101.4.3.4** P **128** L **43** # **2672**
 Remein, Duane Huawei Technologies

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

Text and figure for DS framing

SuggestedRemedy
 see remain_3bn_16_1114.pdf

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **101** SC **101.4.3.5.1** P **133** L **4** # **2680**
 Leo, Montreuil Broadcom

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

Step 3 and 4 are informational

SuggestedRemedy
 Remove step 3 and 4

Proposed Response Response Status **W**
 PROPOSED ACCEPT.
 Editor changed from ER to TR

CI **101** SC **101.4.3.5.3** P **131** L **14** # **2600**
 Remein, Duane Huawei Technologies

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

Figure 101–16—"Placement of predefined continuous pilots around the PHY Link" implies PHY Link is 6 MHz wide ("PHY Link band (6 MHz))" when in fact it is only 400 kHz. The 6 MHz band extends beyond the upper and lower continuous pilots.

SuggestedRemedy
 Combine with figure 102-9, place in CI 102 and ref from here. (see remain_3bn_12_1114.pdf for new figure)

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **101** SC **101.4.3.5.4** P **133** L **54** # **2669**
 Laubach, Mark Broadcom Corporation

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

Step 7 is normative.

SuggestedRemedy
 Remove the word "Informational"

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **101** SC **101.4.3.9** P **144** L **31** # **2647**
 Remein, Duane Huawei Technologies

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

This statement should refer to a system variable not the whole register: "Once the CNU detects the downstream PHY Link and receives the downstream PHY Link control register (see 45.2.1.113), the CNU knows the location of k = 0.

SuggestedRemedy
 Change to read:
 "Once the CNU detects the downstream PHY Link and receives the DS_FreqCh1 variable (see Table ref), the CNU knows the location of k = 0." Add DS_FreqCh1 through DS_FreqCh5 to mdio mapping table (see remain_3bn_14_1114.pdf)."

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI 101 **SC 101.4.4.12.1** **P 158** **L 15** # 2718
 Kliger, Avi Broadcom

Comment Type **T** **Comment Status** **D**
 PDR should be transmitted un-equalized

SuggestedRemedy
 change sentence to:

"Always pre-equalize all transmissions other than probe and PHY Discovery Response signals"

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI 101 **SC 101.4.4.3** **P 149** **L 46** # 2654
 Remein, Duane Huawei Technologies

Comment Type **T** **Comment Status** **D**
 This paragraph can be better aligned with agreed upon terms and variable names.

SuggestedRemedy
 Change From:
 "The upstream OFDMA frame shall be composed of a Probe opportunity followed by 256 OFDMA frames. Each Probe opportunity may be five or six OFDMA symbols in duration. An OFDMA frame is one Resource Block column (i.e., one column of Resource Blocks over the entire upstream spectrum). Each Resource Block is composed of one subcarrier and has a duration, which is identical to the time interleaver period, of either 8 or 16 symbols. See US time interleaving parameter in the 10GPASS-XR US OFDM control register 45.2.1.110.2. Changing the Resource Block duration results in a network restart. The superframe structure is illustrated in Figure 101–25."
 To:
 "The upstream OFDMA frame shall be composed of a Probe Period followed by 256 OFDMA frames. Each Probe Period may be five or six OFDMA symbols in duration, as determined by the PrbDur variable. An OFDMA frame is one Resource Block column (i.e., one column of Resource Blocks over the entire upstream spectrum). Each Resource Block is composed of one subcarrier and has a duration, which is identical to the time interleaver period as set using the US_TmIntrlv variable, of either 8 or 16 symbols. Changing the Resource Block duration results in a network restart. The superframe structure is illustrated in Figure 101–25."

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI 101 **SC 101.4.4.3.2** **P 150** **L 45** # 2671
 Laubach, Mark Broadcom Corporation

Comment Type **TR** **Comment Status** **D**
 "OFDMA transmission may be interrupted" can be interpret as interrupting the RF transmission energy (the transmission of an OFDMA symbol).

SuggestedRemedy
 Suggest replacing: "However, an OFDMA transmission may be interrupted for various reasons." with "An OFDMA transmission may straddle excluded and unused subcarriers."

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI 101 **SC 101.4.4.3.2** **P 150** **L 47** # 2615
 Remein, Duane Huawei Technologies

Comment Type **T** **Comment Status** **D**
 In 101.4.4.3.2 we define a bands edge. I believe this is the same as spectral edge used in 101.4.3.5.4. We should be consistent.

SuggestedRemedy
 Change band edge to spectral edge. Remove editors note pg 133 ln 40

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 On second thought it might be better to change spectral edge (used 3x) to band edge (used 14 x).

CI 101 **SC 101.4.4.7** **P 152** **L 35** # 2717
 Kliger, Avi Broadcom

Comment Type **T** **Comment Status** **D**
 Table allows any repeat value between 0 to 31 and ny start value between 0 to 63. This amount of flexibility is unnecessary large. I porposed to leimit allowed repeat values to: 1,2,4,8 (2 bits) and correspondingly start values between 0 and 7 (3 bits).

SuggestedRemedy
 Change table 101-16 and corresponding text accordingly

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 Goinf from 5 to 2 or 3 control bits seems a bit to constraining. Also only allowing relatively low numbers for repeat create excessive overhead. Change both start and repeat fields to 4 bits.

CI **102** SC **102.1.1** P **168** L **10** # **2623**
 Remein, Duane Huawei Technologies

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

In Figure 102-2 the order of fields in the EPFH is not the same as in the DS EPFH. It would be better if they were the same

SuggestedRemedy

Swap RT/SA(16b) and RF_ID so they are in the same order as in the DS message.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **102** SC **102.1.2** P **169** L **45** # **2695**
 Kliger, Avi Broadcom

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

Fig 102-3/4

"Symbol duplication" block in fig 102-4 is only required for the PHY Discovery Response message. It is not required in the upstream PHY link.

SuggestedRemedy

replace "symbol duplication" with "symbol mapping".

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.
 Use Symbol Mapper
 See cmt 2624

CI **102** SC **102.1.2** P **169** L **6** # **2624**
 Remein, Duane Huawei Technologies

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

Fig 102-3/4

Figure 102-3 & 4 change red text to black. Align with Figure 100-2/3. Add TxPre signal to Preamble block.

SuggestedRemedy

per comment, see remein_3bn_19_1114.pdf

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.
 see remein_3bn_19b_1114.pdf
 Also see cmt 2694 & 2695

CI **102** SC **102.1.3** P **170** L **33** # **2678**
 Leo, Montreuil Broadcom

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

In figure 102-5, Byte 1 use upper case A

SuggestedRemedy

A15 to A8 should be lower case a15 to a8.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **102** SC **102.1.3** P **170** L **34** # **2687**
 Kliger, Avi Broadcom

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

Fig 102-5

Figure 102-5 A15 to A8 are capitalized while a7 to a0 are not

SuggestedRemedy

change "A" to "a" where required

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **102** SC **102.1.3** P **170** L **34** # **2688**
 Kliger, Avi Broadcom

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

output starts with a7 going down to a0, this is different than shown in the encoder diagram and confusing

SuggestedRemedy

change the figure so that a0 is the MSB and a7 to LSB, or use different letter in this table. Say change the "a"s to "b"s

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.
 Editor changed Comment Type from ER to TR
 Bit numbering (lsb to msb) is consistent with the rest of 802.3. Change all "A" and "a" to "b".

CI 102 **SC 102.1.3** **P 170** **L 4** # **2696**
 Kliger, Avi Broadcom

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

PHY Discovery Rspnse and Fine Ranging moved to the probe period. Do we still want to make it a part of the upstream PHY Link signaling?

SuggestedRemedy
 Remove the wording: "including PHY Discovery Response and Fine Ranging Response" in line 4

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI 102 **SC 102.1.3** **P 170** **L 9** # **2686**
 Kliger, Avi Broadcom

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

Also probes are PHY to PHY signaling in the upstream PHY Link

SuggestedRemedy
 add "and wideband probes" to the end of text in line 9.

Proposed Response **Response Status** **W**
 PROPOSED REJECT.
 If we remove PHY Discovery Response (see Cmt 2696) as a PHY Link signaling type it seems unreasonable to keep Probing as a PHY Link signaling type.

CI 102 **SC 102.1.4.2.3** **P 173** **L 28** # **2689**
 Kliger, Avi Broadcom

Comment Type **ER** **Comment Status** **D** **LDPC (362,272)**

The LDPC (362,272) code is not required. It has been proposed to encode data carried by the fine ranging signal, however fine ranging does not carry data any more

SuggestedRemedy
 Remove section 102.1.4.2.3

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI 102 **SC 102.1.6** **P 175** **L 7** # **2697**
 Kliger, Avi Broadcom

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

The factor $1/\sqrt{10}$ is nly correct for QAM-16.

SuggestedRemedy
 reference the table of factors instead of $1/\sqrt{10}$

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 Change:
 " $1/\sqrt{10}$ "
 to:
 "the appropriate factor in Table 101–22"

CI 102 **SC 102.1.7** **P 175** **L 11** # **2698**
 Kliger, Avi Broadcom

Comment Type **TR** **Comment Status** **D** **Sym Dup**

"This duplication is accomplished by duplicating the data (including FEC parity) in the upstream data path for these signals."
 This is not accurate as cyclic prefix and cyclic suffix are also added and the duplication is done on th etime domain samples.

SuggestedRemedy
 Change the wording of the sentence as follows:
 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 cyclic suffix as described in section 102.4.1.4

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 See cmt 2683

CI 102 **SC 102.1.7** **P 175** **L 16** # **2535**
 Leo, Montreuil Broadcom

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

We need a figure to illustrate the symbol duplication process

SuggestedRemedy
 Attachment has the figure.

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 Attachment is titled Symbol duplication figure1 (docx) or OFDMA_Initial_ranging (visio)

CI 102 **SC 102.1.9** **P 175** **L 38** # **2651**
 Remein, Duane Huawei Technologies

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

Updates to Table 102–3—10GPASS-XR MDIO/PHY Link variable mapping

SuggestedRemedy
 See remein_3bn_13_1114.pdf

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI 102 **SC 102.1.9** **P 176** **L 26** # **2652**
 Remein, Duane Huawei Technologies

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

Allowed CNU_ID or Next CNU_ID?

SuggestedRemedy
 Go with Allowed CNU ID in CI 45 and AllwdCNU_ID in CI 102 (change in 4 places including Table 102-3.

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI 102 **SC 102.2** **P 177** **L 1** # **2617**
 Remein, Duane Huawei Technologies

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

Need state diagram and related definitions for CLT PHY Link transmit process.

SuggestedRemedy
 See Figure 102-1 and related text in remein_3bn_10_1114.

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 See Figure 102-1 and related text in remein_3bn_10b_1114.

CI 102 **SC 102.2** **P 177** **L 1** # **2611**
 Remein, Duane Huawei Technologies

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

We should add a maximum allowed turn around time on the DS PHY Link so that we can ensure messages with time sensitive information, such as PHY Discovery Instructions, arrive with sufficient time to be decoded and acted upon.

SuggestedRemedy
 Add new section 102.2.5 Downstream PHY Link response time. The CNU shall decode and be capable of acting on instructions included in a downstream PHY Link frame, such as PHY Discovery instructions, within TBD us.

Included the following in Variable Def. section for DS PHY Link.
 PhyLnkRspTm
 TYPE: 16-bit Integer
 The value of this variable defines the minimum time, in OFDM clocks, after receiving the last bit of the FEC, needed by the CNU to decode and prepare the response to a PHY Link Instruction.

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.
 If possible TF should set a timeframe and replace the "TBD" 40 us (2 symbols) is suggested.

CI 102 **SC 102.2** **P 177** **L 1** # **2609**
 Remein, Duane Huawei Technologies

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

Where is DS Timestamp generation described? Need text.

SuggestedRemedy
 See 102.2.5.2 in remein_3bn_10_1114.

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI 102 **SC 102.2.1.1** **P 177** **L 10** # **2690**
 Kliger, Avi Broadcom

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

this paragraph uses the term pilot tones, while elsewhere in the text the term continuous pilots is used

SuggestedRemedy
 replace "pilot tones" with "continuous pilots" in subclause 10.2.1.1

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI **102** SC **102.2.1.2** P **177** L **20** # **2597**
 Remein, Duane Huawei Technologies

Comment Type **T** Comment Status **D** Mod Table 100-x

Assuming we create the suggested new table listing modulation formats (see remain_3bn_11_114.pdf) then we shouldn't restate a requirement here.

SuggestedRemedy

Change:
 "The DS PHY Link shall use a 16-QAM constellation for all information subcarrier s."
 To:
 "The DS PHY Link uses a 16-QAM constellation for all information subcarriers as specified in Table 100-REF. In 102.3.1.2 add The US PHY Link may use any of the modulation formats listed in Table 100-REF."

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **102** SC **102.2.1.2** P **177** L **43** # **2629**
 Remein, Duane Huawei Technologies

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

Figure 102–9—"DS PHY Link spectrum placement" show minimum of 24 MHz of active subcarriers but this has been changed to 22 MHz.
 See relate comment
 CI 100,
 SC 101.4.3.5.3
 pg 131
 ln 14

SuggestedRemedy

s/b 22 MHz not 24, combine with Fig 101-16 and ref from CI 101. See remain_3bn_12_1114.pdf.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **102** SC **102.2.3.1.1** P **181** L **34** # **2691**
 Kliger, Avi Broadcom

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

"Each CNU contains two profiles in each direction, copy "A" and copy "B"; only one of which is active at any given time"
 .It is not clear that the profiles in each direction are identical to all CNU's.

SuggestedRemedy

Add text that clarifies the above
 "Each CNU contains two profiles in each direction, copy "A" and copy "B"; only one of which is active at any given time. The active profile in each direction is identical to all CNU's"

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.
 Editor changed comment type from ER to TR
 Add " The CLT shall ensure that the inactive profile in all CNU's is identical prior to making it the active profile."
 Note that the indexed variable only address the inactive profile so the active profile will always be identical if the above requirement is true.

CI **102** SC **102.2.3.1.1** P **182** L **33** # **2699**
 Kliger, Avi Broadcom

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

Response Type (RT) field may need to change once the new PDR structure is accepted

SuggestedRemedy

A place holder at this time

Proposed Response Response Status **W**

PROPOSED REJECT.
 No suggested change.

CI **102** SC **102.2.3.1.1** P **182** L **36** # **2632**
 Remein, Duane Huawei Technologies

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

In this statement about Response Frame we still need to specify RF for Fine Ranging as CNU's that have already completed PHY Discovery will still supply and ACK via the PHY Link. "When the Response Type field indicates Fine Ranging / PHY Discovery the Response Frame should be set to zero and is ignored on reception as these signaling types have fixed starting points."

SuggestedRemedy

Strike the sentence.

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **102** SC **102.2.3.1.1** P **182** L **40** # **2700**
 Kliger, Avi Broadcom

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

"if the DA does not match the assigned address or the broadcast address then the frame is discarded and no response is made"
 The TMB and probe controls must not be ignored

SuggestedRemedy

Correc the sentence as follows"
 "if the DA does not match the assigned address or the broadcast address then the EMBS in the frame are discarded and no response is made"

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **102** SC **102.3** P **185** L **19** # **2618**
 Remein, Duane Huawei Technologies

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

Need state diagram and related definitions for CNU PHY Link transmit process.

SuggestedRemedy

See Figure 102-2 and related text in remein_3bn_10_1114.

Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 See Figure 102-2 and related text in remein_3bn_10b_1114.

CI **102** SC **102.3.1.1** P **185** L **27** # **2701**
 Kliger, Avi Broadcom

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

"The upstream PHY Link shall use the same OFDM Symbol size and cyclic prefix duration as the upstream MAC data channel"
 There is a single OFDM symbol size in the upstream. US PHY link must use the same window size

SuggestedRemedy

Change the sentence to:
 The upstream PHY Link shall use the cyclic prefix duration and the same window size as the upstream MAC data channel

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **102** SC **102.3.3** P **186** L **50** # **2655**
 Remein, Duane Huawei Technologies

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

Why is this statement here? There is not data in a FR response.
 "For Fine Ranging data transfers the upstream PHY Link shall use a (362,272) binary punctured LDPC code described in 102.1.4.2.3"

SuggestedRemedy

Remove the statement and all text and figures regarding the (362,272) binary punctured LDPC code described in 102.1.4.2.3

Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 Per comment, verify each described FEC in CI 101 & 102 is used. Add Editors note to remove FEC description for any codes not used.

CI **102** SC **102.3.3** P **186** L **50** # **2702**
 Kliger, Avi Broadcom

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

Fine Ranging doesnt carry data, this FEC is not necessary

SuggestedRemedy

Remove this subclause

Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 Remove the sentence:
 For Fine Ranging data transfers the upstream PHY Link shall use a (362,272) binary punctured LDPC code described in 102.1.4.2.3

CI 102 **SC 102.3.4** **P 187** **L 1** # **2703**
 Kliger, Avi Broadcom

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

"The DS_PHYLinkSrchStepCnt is set to indicate the number of searches to make prior to declaring a search failure. Is this per frequency or searches over all frequencies?"

SuggestedRemedy
 Indicate in the text

Proposed Response **Response Status** **W**

PROPOSED ACCEPT IN PRINCIPLE.
 Changed fm pg 187 ln 1 to pg 188 ln 43
 Per 45.2.1.114.5 DS PHY Link Search Count (1.1914.12:0)
 Register bits 1.1914.12 through 1.1914.0 specify the integer number of search steps through which to search for a PHY Link
 Change "searches" to "search steps"

CI 102 **SC 102.4.1.1** **P 188** **L 9** # **2627**
 Remein, Duane Huawei Technologies

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

In Figure 102-15 we should make it clear that the RND Delay is in both time and frequency domain. We should also update it to current bring-up process: 1) CLT Opens PHY Discovery
 2) CNU issues PHY Discovery response
 3) CLT assigns CNU_ID, sets Timing Offset and Amplitude Offset via PHY Instruction
 4) CLT assigns Fine Ranging Slot to new CNU
 5) CNU sends Fine Ranging Response
 6) CLT updates Timing Offset and/or Amplitude Offset via PHY Instruction
 7) Iterate 4-6 as needed
 8) CLT schedules CNU Probe
 9) CNU sends Probe response
 10) CLT updates Timing Offset and/or Amplitude Offset via PHY Instruction
 11) Iterate 8-10 as needed
 12) CLT sets CNU to Link-up state
 13) CNU ACK's Link-up in PHY Link (note this is the first CNU transmission in PHY Link or MAC data paths)

SuggestedRemedy
 See remein_3bn_19_1114.pdf

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI 102 **SC 102.4.1.2** **P 188** **L 46** # **2692**
 Kliger, Avi Broadcom

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

"to being a PHY Link search" - should be "to begin a new test"

SuggestedRemedy
 change being to begin

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI 102 **SC 102.4.1.3** **P 189** **L 11** # **2625**
 Remein, Duane Huawei Technologies

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

Perhaps we should not leave this specifically up to the implementor. "The periodicity of these windows is unspecified and left up to the implementor."

SuggestedRemedy
 Change the sentence to read: "The periodicity of these windows is unspecified."

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT.

CI 102 **SC 102.4.1.4** **P 189** **L 50** # **2620**
 Remein, Duane Huawei Technologies

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

Need a convention for numbering and referencing PHY Discovery opportunities as there may be upto 16 per Probe Period. This ties in wth the back-off mechanism.

SuggestedRemedy
 See figure 1012-16 in remein_3bn_19_1114.pdf.

Proposed Response **Response Status** **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 Create ad text ref to the new figure also.

CI **102** SC **102.4.1.4** P **190** L **1** # **2628**
 Remein, Duane Huawei Technologies

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

Clarification of highlighted text on back-off algorithm for PHY Discovery response.

SuggestedRemedy

Change from:

"In order to reduce transmission overlaps, a contention algorithm is used by all off-line CNU. Measures are taken to reduce the probability for overlaps by artificially simulating a random distribution of distances from the CLT. Each CNU waits a random amount of time before transmitting the PHY Discovery Response that is shorter than the length of the 100.x.y window. Multiple valid PHY Discovery Responses that do not overlap in time may be received by the CLT during a single PHY Discovery window."

To:

"In order to reduce transmission overlaps, a contention algorithm is used by all off-line CNU. Measures are taken to reduce the probability for overlaps by artificially introducing a random distribution in the Discovery response opportunity used by each CNU. Each CNU selects a random number of Discovery response opportunities it waits before transmitting the PHY Discovery Response. Multiple valid PHY Discovery Responses that do not overlap in time may be received by the CLT during a single PHY Discovery window depending on the modulated spectrum of OFDM channel 0."

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **102** SC **102.4.1.4** P **190** L **3** # **2704**
 Kliger, Avi Broadcom

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

Random backoff should be on PD window opportunities and not on time
 Also, more details should be added on transmission power of the PDR (probably in a different section but referenced here)

SuggestedRemedy

correct the sentence as follows:

"Each CNU waits a random amount of PHY Discovery window opportunities before transmitting the PHY Discovery Response"

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

See cmt 2628

CI **102** SC **102.4.1.4** P **190** L **50** # **2619**
 Remein, Duane Huawei Technologies

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

Need state diagram and related definitions for CNU Discovery Response transmit process.

SuggestedRemedy

See Figure 102-2 and related text in remein_3bn_10_1114.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **102** SC **102.4.1.5** P **191** L **19** # **2610**
 Remein, Duane Huawei Technologies

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

This figure reference is incorrect. "PHY Discovery Response (illustrated in Figure 102-20)." Need to add figure and reassign reference

SuggestedRemedy

Add figure per Leo Montreuil and ref. from here.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Figure added per cmt 2535.

CI **102** SC **102.4.1.5** P **191** L **33** # **2626**
 Remein, Duane Huawei Technologies

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

Figure 102-16 title is incorrect

SuggestedRemedy

Change to "PHY Discovery Preamble generator."

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **102** SC **102.4.2** P **191** L **48** # **2706**
 Kliger, Avi Broadcom

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

FR purpose was to provide better accuracy to measurements of power and timing offset than PDR before probe could be transmitted, under the assumptions that PDR are sent in frames that also contain data, using a relatively small number of subcarriers and with a low transmission power to not interfere with the data, hence received with low SNRs. This has been required under the assumption that PD windows should be opened over several OFDMA frames (due to an RTT in order of a mSec) and that data cannot be halted for this amount of time.

Recently we've made some substantial changes to the ranging requirements for EPoC:
 1. RTT dynamic range is now less than one OFDM symbol
 2. PDR signal is not mixed with data any more. Whole symbol can be dedicated to one or more PDRs. There is no leakage from PDR to data subcarriers
 3. PDR can be transmitted in a high SNR with more BW available (could use same number of subcarriers used for Fine Ranging).
 4. There is no timing ambiguity of a symbol after the PDR reception as RTT is always less than a symbol (<20 uSec)
 5. Fine Ranging does not carry any data

With this changes to PDR there is no more a reason to use FR signal. Fine and periodic ranging can be done using the probes.

SuggestedRemedy

Remove this section. Remove all other references to fine ranging in the text

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

ON SECOND THOUGHT: REWORD AS THERE ARE NEEDED REQUIREMENTS IN THIS SECTION SUCH AS:
 Before declaring a CNU is in the link-up state the CLT shall ensure that a CNU joining the EPoC network is properly aligned to the US OFDMA timing and is cognizant of all necessary provisioning parameters needed to properly operate in the OFDMA network without adverse impact to the EPoC network or other services operating in RF spectrum unused by the EPoC network. A list of required parameters is given in Table 102-12. When the CNU receives the PhyTimingOffset variable it shall add the new value of PhyTimingOffset to the RangingOffset.

Here is a list of potentially impacted areas
 pg line
 37 46
 150 5
 151 36
 170 4 & 9
 175 3, 12, 15, & 23

182 34, 35, & 36
 186 50
 187 25
 191 48 - pg 192 ln 19

CI **102** SC **102.4.2** P **192** L **18** # **2603**
 Remein, Duane Huawei Technologies

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

See related cmt CI 45.2.1.122 pg 44 ln 46
 EDITORS NOTE (to be removed prior to publication): need to create a mdio register for RangingOffset (signed number same size as PhyTimingOffset) which defaults to zero. This is to allow the operator to set the distance to the coax cable distribution network in the event there is an analogue optical link between the CLT and coax cable distribution network.

SuggestedRemedy

Don't need sign bit. See remain_3bn_15_1114.pdf, remove Ed Note.

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **102** SC **102.4.3** P **192** L **21** # **2616**
 Remein, Duane Huawei Technologies

Comment Type **T** Comment Status **D**
 A way is needed to schedule the Probe Period.

SuggestedRemedy

See remain_3bn_02_1014.pdf (diff version compared to Draft 1.1 text is remain_3bn_021014CMP.pdf)

Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 See remain_3bn_02c_1014.pdf (diff version compared to Draft 1.1 text is remain_3bn_02c_1014CMP.pdf)

CI **102** SC **102.4.3.1** P **192** L **29** # **2693**
 Kliger, Avi Broadcom

Comment Type **T** Comment Status **D**
 Do we really need the two options?

SuggestedRemedy

change number of probe symbols to be always 6

Proposed Response Response Status **W**
 PROPOSED ACCEPT.
 Changed to CI 00 as this also impacts CI 45

Cl 103 **SC 103.1** **P 201** **L 24** # **2519**
Hajduczenia, Marek Bright House Network

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

"EPoC uses FDD technology; downstream and upstream directions are separated in frequency." - unnecessary detail for MPCP Clause

SuggestedRemedy
Remove.

Proposed Response **Response Status** **W**
PROPOSED ACCEPT.

Cl 103 **SC 103.1** **P 201** **L 33** # **2520**
Hajduczenia, Marek Bright House Network

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

"This clause specifies the multipoint control protocol (MPCP) to operate a coax cable multipoint network by defining a Multipoint MAC Control sublayer as an extension of the MPCP defined in Clause 77 and of the MAC Control sublayer defined in Clause 31, and supporting current and future operations as defined in Clause 31 and annexes." - given that it is an independent Clause, whether it is extension of Clause 77 or not does not matter.

SuggestedRemedy
Change to read

"This clause specifies the multipoint control protocol (MPCP) to operate a coax cable multipoint network by defining a Multipoint MAC Control sublayer as an extension of the MAC Control sublayer defined in Clause 31, and supporting current and future operations as defined in Clause 31 and annexes."

Proposed Response **Response Status** **W**
PROPOSED ACCEPT IN PRINCIPLE.
"This clause specifies the multipoint control protocol (MPCP) to operate a coax cable distribution network by defining a Multipoint MAC Control sublayer as an extension of the MAC Control sublayer defined in Clause 31, and supporting current and future operations as defined in Clause 31 and annexes."

Cl 103 **SC 103.1** **P 202** **L 20** # **2521**
Hajduczenia, Marek Bright House Network

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

CDN or CCDN? There are just two uses of CDN in the document right now, versus 23 uses of CCDN.

SuggestedRemedy
Change two stranded instances of CDN to CCDN.

Proposed Response **Response Status** **W**
PROPOSED ACCEPT IN PRINCIPLE.
Change to coax cable distribution network

Cl 103 **SC 103.1** **P 202** **L 25** # **2522**
Hajduczenia, Marek Bright House Network

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

The Multipoint MAC Control functionality shall be implemented for subscriber access devices containing point-to-multipoint Physical Layer devices defined in Clause 100, Clause 101 and Clause 102.

Only Clause 100 defines PHY. 101 is PCS and 102 is parallel to PCS

SuggestedRemedy
Change to

The Multipoint MAC Control functionality shall be implemented for subscriber access devices containing point-to-multipoint Physical Layer devices defined in Clause 100.

Proposed Response **Response Status** **W**
PROPOSED REJECT.
Cl 100 defines the PMD note the PHY, Cl 101 the RS, PCS and PMA and Cl 102 the PHY Link. Each of these is a component of the PHY.
The 10GPASS-XR PHY requires all clauses.

CI 103 **SC 103.1.2** **P 204** **L 1** # **2523**
Hajduczenia, Marek Bright House Network

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

Several issues with Figure 103-2:
1) PMA clause is marked as TBD - I believe PMA is already defined in Clause 100 to some degree
2) no Clause 102 in the drawing?
3) COAX medium is CCDN defined elsewhere

SuggestedRemedy
Address individual issues

Proposed Response **Response Status** **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add link & CL 100 in PMA.
As this figure show the "Relationship of Multipoint MAC Control and the OSI protocol stack for EPoC" I don't see the need to include the PHY Link here.
In reviewing CL 64 & 77 neither use ODN, which is the complement of CCDN. CI 64 uses "PASSIVE OPTICAL MEDIUM" and CI 77 uses "Fiber" so I conclude that COAX is acceptable.

CI 103 **SC 103.2.1** **P 207** **L 4** # **2515**
Hajduczenia, Marek Bright House Network

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

More messed up formatting. Seems that all special formatting from 77.2.1 was lost when creating Clause 103.

SuggestedRemedy
Copy Clause 77 from 802.3-2012 (even even better, from 802.3bx) and apply any necessary changes, *without* making changes into formatting of alerady existing text. There are way too many formatting changes in Clause 103 relative to Clause 77 to comment on them separately.

Proposed Response **Response Status** **W**

PROPOSED REJECT.
There are to many technical changes in CI 103 to "Copy Clause 77 from 802.3-2012 (even even better, from 802.3bx) and apply any necessary changes".

CI 103 **SC 103.2.2** **P 210** **L 18** # **2516**
Hajduczenia, Marek Bright House Network

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

Is there any legitimate reason why all existing live cross-references from 802.3-2012 text were removed and replaced with green text? It does not hurt to keep them active, as long as they poitn to a correct location in 802.3. Only new cross references to subclauses outside of the draft need to be places as text and marked in green for insertion of cross references later on.

SuggestedRemedy
Recover all live cross references taken from 802.3-2012 text and mark into green only cross references added new in this document.

Proposed Response **Response Status** **W**

PROPOSED REJECT.
At this point these are external references and need to be in forest green per WG template.

CI 103 **SC 103.2.2** **P 211** **L 25** # **2524**
Hajduczenia, Marek Bright House Network

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

Editorial Note:In Figure 102-8 the baseline material did not include the "(n)" for "transmitAllowed", the editor will add a comment to formalize this change.

SuggestedRemedy
Add the missing "(n)" after "transmitAllowed" signal in Figure 103-8.
Remove editorial note lines 25-26.

Proposed Response **Response Status** **W**

PROPOSED ACCEPT.

CI 103 **SC 103.2.2.7** **P 221** **L 1** # **2529**
Hajduczenia, Marek Bright House Network

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

Figure 103-12 and Figure 103-13 do not correspond to the current state of PCS defined in Clause 101. These two figures, associated variables, functions, etc. should be marked as TBD at this time.

SuggestedRemedy
Remove 103-12, 103-13 and associated variables. The process of calculating PHY overhead with current FEC arrangement defined in CClause 101 has not been discussed, and the model adopted from Clause 77 will present a number of challenges, as discussed at the last meeting.

Proposed Response **Response Status** **W**

PROPOSED ACCEPT IN PRINCIPLE.
Figures will be marked with "TBD" and associated varaiaables highlighted.

CI 103 **SC 103.3.2.4** **P 224** **L 36** # **2530**
Hajduczenia, Marek Bright House Network

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

Delay requirements for MPCP running in EPoC has not been examined in any detail so far, and adopting them verbatim from EPON might prove challenging.

SuggestedRemedy

Replace all numbers in 103.3.2.4 with TBD

Proposed Response **Response Status** **W**

PROPOSED ACCEPT IN PRINCIPLE.
1024 will be replaced with TBD in two places.

CI 103 **SC 103.3.3** **P 224** **L 49** # **2531**
Hajduczenia, Marek Bright House Network

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

The description of the discovery process assumes that the upstream burst structure, as well as key parameters to be exchanged between the CLT and CNU par 1:1 with the process in EPON. However, we do not really have any information on the upstream burst structure (cannot locate it for now in PCS clause) or a formulated idea on what parameters need to be exchanged between the CLT and CNU to accomplish successfully discovery over CCDN.

SuggestedRemedy

Remove content of 103.3.3 and mark it as TBD at this time. Only when details of upstream transmission are ironed out, bring the *updated* text back.
Right now, MPCP gives impression that it is largely done, while in fact it contains a lot of material that is not in sync with PCS / PHY definitions.

Proposed Response **Response Status** **W**

PROPOSED ACCEPT IN PRINCIPLE.
Text from pg to 238 (103.3.3 & subclauses) will be highlighted.
Add editors note to beginning of 103.3.3
EDITORS NOTE (to be removed prior to publication): Material on Discovery processing needs to be rationalized with CL 101 and 102.

CI 103 **SC 103.3.3** **P 224** **L 50** # **2525**
Hajduczenia, Marek Bright House Network

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

The description of the discovery process implies that CNUs are discovered by the CLT, just like in EPON. However, there is no indication that the CNU needs to be first discovered via PHY link (Clause 102) before MPCP processes kick in and register the station at the MAC Control layer.

SuggestedRemedy

Please insert at least a statement indicating that before the MPCP discovery is started, PHY Link discovery for the given CNU needs to be completed, along with the pointer where the process is described in detail.

Proposed Response **Response Status** **W**

PROPOSED REJECT.
These two processes are independent. The MPCP Discovery process does not wait for PHY Link Discovery (true it will not find anything before PHY Link Discovery is complete but it can be started as soon as desired).

CI 103 **SC 103.3.5** **P 243** **L 3** # **2526**
Hajduczenia, Marek Bright House Network

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

This is not really true in EPoC, where multiple carriers are used simultaneously, each modulated with its own data stream.

A key concept pervasive in Multipoint MAC Control is the ability to arbitrate a >>>single transmitter<<< out of a plurality of CNU's. The CLT controls a CNU's transmission by the assigning of grants.

SuggestedRemedy

Probably we need to change the wording to mention multiple RF transmitters located at one CNU, or come up with some aggregate term distinct from transmitter.

Proposed Response **Response Status** **W**

PROPOSED REJECT.
No acceptable wording is suggested. The author is invited to propose something suitable. I see no problem with the concept of a single transmitter operating on multiple frequencies simultaneously, this is somewhat basic to OFDM.

CI **103** SC **103.3.5.1** P **244** L **2** # **2527**
 Hajduczenia, Marek Bright House Network

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

Given the higher complexity of EPoC transmission process, including FEC encoding, is it viable to assume that the minimum processing time stays the same as in EPON:

VALUE: 0x00000400 (16.384 us)

SuggestedRemedy

Either change to a value that is viable for EPoC, or replace the numeric value with TDB

The same applies to minGrantLength variable

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.
 Change 0x00000400 (16.384 us) to TBD
 Change 12 to TBD (line 9)

CI **103** SC **103.3.6.3** P **258** L **1** # **2528**
 Hajduczenia, Marek Bright House Network

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

"E" ?

SuggestedRemedy

Remove if not needed or insert missing text if something was intended to be here.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.
 Remove.

CI **103** SC **103.3.6.4** P **258** L **48** # **2517**
 Hajduczenia, Marek Bright House Network

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

"Flags. this is an 8 bit flag register" - "this" should be capitalized?

SuggestedRemedy

Why there are so many differences from Clause 77 in 802.3-2012? What base document was used to generate this Clause?

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.
 This will be capitalized.

CI **103** SC **103.4** P **261** L **38** # **2635**
 Remein, Duane Huawei Technologies

Comment Type **T** Comment Status **D** 103.4

No reason for this section has been made known to the TF.

SuggestedRemedy

Remove section 103.4 and editors note.

Proposed Response Response Status **W**

PROPOSED ACCEPT.
 See cmt 2532

CI **103** SC **103.4** P **261** L **38** # **2532**
 Hajduczenia, Marek Bright House Network

Comment Type **TR** Comment Status **D** 103.4

Subclause 103.4 is not needed in EPoC - there are no dual rate systems.

SuggestedRemedy

Remove subclause 103.4 and associated editorial note in lines 34-35.

Proposed Response Response Status **W**

PROPOSED ACCEPT.
 See comment 2635

CI **45** SC **45.2.1** P **28** L **19** # **2417**
 Hajduczenia, Marek Bright House Network

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

There are two tables 45-3 in the draft. The existing editorial instructions are confusing. Each part of the table should have its own editorial instruction to clearly indicate which rows are replaced and have clearly marked rows being inserted or modified.

SuggestedRemedy

Proposed Response Response Status **W**

PROPOSED REJECT.
 This format was suggested by the WG Secretary.

CI 45 **SC 45.2.1.107** **P 33** **L 52** # **2420**
Hajduczenia, Marek Bright House Network

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

"CRC40 Errored frames are passed to the MAC layer as is" - this does not sound very correct

SuggestedRemedy

Change teh wording to "CRC40 Errored frames are passed to the MAC layer without error indication"

Also, it would be nice to point a reader to what these CRC40 is and what CRC40 Errored frames" are

Description in 45.2.1.107.1 is also in need of a reference to where the purpose of the said error indication mechanism is discussed. Right now it is handing off undefined.

Proposed Response **Response Status** **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change wording as proposed.
At the end of 45.2.1.107.1 add:
"For additional information on CRC40 see 101.3.2.3"

CI 45 **SC 45.2.1.107** **P 34** **L 8** # **2423**
Hajduczenia, Marek Bright House Network

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

"coaxial cable distribution network (default)" - what does it mean that the given value is "default" ?

SuggestedRemedy

Explain what it means that the value is default. It seems to me that the register should always reflect the actual state of the PHY discovery process, and there is no condition under which it would in an undefined state, indicating the need for a default value. Same for register 1.1900.0. In 45.2.1.107.3, you create default value without any need - note that in EPON we have the same requirement for pHY to be operational, yet we donot define default values for PHY enable registers. I am not sure why we need it at all in FDD mode. It was needed in TDD long time ago for some reason. Now it seems not needed.

Proposed Response **Response Status** **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove "(default)" in table (2 places).
In 45.2.1.107.2 include at end of section a new para:
"The default value for bit 1.1900.1 is zero."
In 45.2.1.107.3 include at end of section a new para:
"The default value for bit 1.1900.0 is zero."

Both of these bits are critical to the behaviour of the CNU on start-up and being clear on their default values can only help create a robust standard.

CI 45 **SC 45.2.1.107.1** **P 34** **L 23** # **2421**
Hajduczenia, Marek Bright House Network

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

"every 8th 64B/66B block, e.g. 1st, 9th, 17th, 25th, " - current numbers indicate every 9th block:
block 1: marked
block 2
block 3
block 4
block 5
block 6
block 7
block 8
block 9: marked
There is 8 blocks of distance between them, hence it is every 9th block you're marking.

SuggestedRemedy

Fix it by indicating it is either every 8th block, or correct numbers in the example

Proposed Response **Response Status** **W**

PROPOSED REJECT.
1 block marked
1 + 8 = 9
9 + 8 = 17
17 + 8 = 25
looks OK to me.

CI 45 **SC 45.2.1.108** **P 35** **L 20** # **2425**
Hajduczenia, Marek Bright House Network

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

Unnecessary (and quite meaningless) information in table: "samples refer to OFDM clock (204.8 MHz)"

SuggestedRemedy

Remove all 4 instances of this term from tables in Clause 45. You already explain what a sample is in definition of individual bits, which is sufficient.

Proposed Response **Response Status** **W**

PROPOSED ACCEPT.

CI 45 SC 45.2.1.108.1 P 35 L 34 # 2424
Hajduczenia, Marek Bright House Network

Comment Type TR Comment Status D

Stop creating new terms when not needed: "binary encoded integer"

SuggestedRemedy

Remove ", as a binary encoded integer," - it adds to confusion and the interpretation is already explained more than clear in the following sentence. Same in 45.2.1.108.2 and in 45.2.1.110.2

Similarly in 45.2.1.112.1 you create the term "binary integer" without any need. Remove all 4 instances of "as a binary integer" from the text, leaving just the orange of values intended.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace 3 instances (pg 35 ln 34, 40, Pg 37 ln 50) of:

"indicate the number, as a binary encoded integer, of ... "

with:

"indicate the integer number of ..."

Pg 39 ln 6 replace:

"the number, as a binary integer between"

with:

"the integer number between"

CI 45 SC 45.2.1.108.3 P 35 L 47 # 2426
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

That is a new type of PMD: 10G-PASSS-XR

SuggestedRemedy

Change all "10G-PASSS-XR" to "10G-PASS-XR" (2 instances).

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change to "10GPASS-XR"

CI 45 SC 45.2.1.109.1 P 36 L 29 # 2429
Hajduczenia, Marek Bright House Network

Comment Type TR Comment Status D

The definition of this register might be clear to the author, but it is not clear to teh reader. Do we assume 5 separate OFDM channels in downstream, or it is intended to be one large block of frequencies.

SuggestedRemedy

Clarify the description for register 1.1902. Also, insert missing description for registers 1.1903/4/5/6, even though it might be repetetive, it has to be complete. A high level drawing of what we are actually specifying here would be nice

Proposed Response Response Status W

PROPOSED ACCEPT.

It is as written; 5 separate channels (1-5).

Add crossreference to 101.4.3.11

CI 45 SC 45.2.1.110.1 P 37 L 45 # 2368
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

We typically start description from register number: The Probe duration parameter (Register 1.1007.11)

SuggestedRemedy

Change to "Register 1.1907.11 (Probe duration) determines"

Note that also register number needs fixing. It is 1007 and should be 1907

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.110.3 P 38 L 4 # 2370
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

Incorrect PHY name: "10G-PASS_XR"

SuggestedRemedy

Change all "10G-PASS_XR" to "10GPASS-XR" (2 instances)

There are also multiple instances of "10G-PASS" which would be really "10GPASS"

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.111.1 P 38 L 28 # 2371
Hajduczenia, Marek Bright House Network

Comment Type TR Comment Status D

"Subcarriers are numbered from 0 to 4095 with subcarrier 0 at the lowest frequency" - we have 16 bits in total, indicating 65535 possible units. If a unit is 50Hz, we can reach 3,276,750Hz, which is consistent with value in line 29. However, the number of subcarriers is incorrect. It is 4095 and should be 65535

Suggested Remedy

Change 4095 to 65535
Fill in the TBD value. Is there any reason for it NOT to be equal to zero? We are not concerned about running out of space here, are we?
Similar issue in 45.2.1.109.1, but there is some maximum value assigned there without any reason.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.
We only have 4096 SC's in US so no change to that.
Change the "TBD"s to 10 MHz and 200 to the last two sentences read:
"This definition equates to a center frequency from 10 MHz to 3.27675 GHz in 50 kHz steps. The minimum value for this register is 200."

This is consistent with TD#72.

CI 45 SC 45.2.1.111.1 P 38 L 29 # 2676
Leo, Montreuil Broadcom

Comment Type T Comment Status D

Replace TBD for min frequency and register

Suggested Remedy

Replace "frequency from TBD to 3.27675 GHz" by " frequency from 5 MHz to 3.27675 GHz".
Replace "The minimum value for this register is TBD" by "The minimum value for this register is 100".

The register value of 100 is for 50 KHz subcarrier spacing and a value of 0 correspond to 0 Hz.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.112.1 P 39 L 7 # 2372
Hajduczenia, Marek Bright House Network

Comment Type TR Comment Status D

DOCSISism: "The Type 1 Repeat parameter cannot be zero, whereas a value of 1 would indicate that all subcarriers would be Type 1 Pilots unless otherwise specified via the US profile descriptor (see 45.2.7a.2)."
Same comment on 45.2.1.112.3

Suggested Remedy

If the value of 0 is not allowed, then how about making it a reserved value?
The statement "all subcarriers would be Type 1 Pilots unless otherwise specified via the US profile descriptor " is just confusing, including double conditional statements is a way to misinterpret. Consider restating in simpler terms, to leave no doubts what is meant. As a side note, is this information really necessary in the description of this register?

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.
Change:
"Register bits 1.1909.10 through 1.1909.5 indicate the number, as a binary integer between 1 and 31, of subcarriers between repeating Type 1 Pilots. The Type 1 Repeat parameter cannot be zero, whereas a value of 1 would indicate that all subcarriers would be Type 1 Pilots unless otherwise specified via the US profile descriptor (see 45.2.7a.2)."
to:
"Register bits 1.1909.10 through 1.1909.5 indicate the number, as an integer between 0 and 31, of subcarriers between repeating Type 1 Pilots. Setting these bits to zero disables the Type 1 repeating pilot pattern. See 101.4.4.7 for additional information on Pilot patterns."

Likewise change text of 45.2.1.112.3 to read:
"Register bits 1.1910.10 through 1.1910.5 indicate the number, as an integer between 0 and 31, of subcarriers between repeating Type 2 Pilots. Setting these bits to zero disables the Type 1 repeating pilot pattern. See 101.4.4.7 for additional information on Pilot patterns."

CI 45 SC 45.2.1.113 P 39 L 39 # 2373
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

Unnecessary detail in the table "DS PHY Link starting subcarrier from 0 to 4095 in steps of 1 subcarrier."

Suggested Remedy

Change to "DS PHY Link starting subcarrier" - teh rest should be included in 45.2.1.113.1

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.114 P 39 L 53 # 2379
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

"These registers permit the CNU to more rapidly acquire the PHY Link when its location is unknown." - it is not so registers in themselves, but the information contained in these registers.

Suggested Remedy

Change to "These registers contain information permitting the CNU to locate the PHY Link more rapidly." - note that nothing prevents CNU from using this information when PHY Link location is known, or almost known.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.114 P 40 L 4 # 2380
Hajduczenia, Marek Bright House Network

Comment Type TR Comment Status D

There are several issues with the description of individual registers in Table 45–78h:

1.1912.14 provides a search control, in which case it should just have options to Start a search and Stop a search. "search complete" belongs to 1.1912.13. Definition in 45.2.1.114.1 and 45.2.1.114.2 need to be aligned accordingly.

1.1912.13 should be extended to 2 bits with the following encoding

1 1 reserved

1 0 search complete

0 1 search successful

0 0 search unsuccessful

Definition in 45.2.1.114.1 and 45.2.1.114.2 need to be aligned accordingly.

1.1912.12:0 contains unnecessary detail "From 1 to 5000 MHz in 1 MHz steps", which should be moved to 45.2.1.114.3 (already there, BTW)

1.19131914.7:0 contains unnecessary detail "From 1 to 256 MHz in 1 MHz steps", which should be moved to 45.2.1.114.4 (already there, BTW)

1.19131914.7:0 has likely incorrect number. Should be 1914.7:0 (likely)

1.19131914.7:0 has inconsistent name. Should be "DS PHY Link search step"

1.1912.13 has inconsistent name. Should be "DS PHY Link search status"

1.1914.12:0 has inconsistent name. Should be "DS PHY Link search count"

Apply the same set of changes to names in subclauses 45.2.1.114.xx

Suggested Remedy

Changes per comment

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Implement changes proposed for 1.1912.12:0

and 1.19131914.7. Also change 1.19131914.7 to 1.1914.7

Proposed changes for 1.1912.13 will not work as we need to signal search is complete or not and success/unsuccess.

CI 45 SC 45.2.1.114.3 P 40 L 37 # 2381
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

Register bits 1.1912.12 through 1.1912.0 specify the starting frequency, in 1 MHz steps from 0 to 5000 MHz, at which to begin searching for a PHY Link.

Since there are 13 bits, we can go all the way to 8191 MHz. Is there any reason we need to go that far?

SuggestedRemedy

Either increase the resolution to 500kHz if needed, or decrease the size of register set to 12 bits.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.
Change resolution to 500 kHz. Reword appropriately.

CI 45 SC 45.2.1.114.4 P 40 L 42 # 2382
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

Register bits 1.1913.7 through 1.1913.0 specify the spectrum granularity, in 1 MHz steps from 1 to 256 MHz, between successive search attempts the PHY is to use when searching for a PHY Link.

Since we have 255 positions (2^8-1) available, we can search from 0 to 255. Otherwise, a different encoding is needed, i.e., all zeros represent 1, all 1s represent 256.

SuggestedRemedy

Either change the range to 0 to 255, or show the actual encoding

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.
0 to 255 MHz, reserve the value of 0.

CI 45 SC 45.2.1.115 P 41 L 7 # 2384
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

"from 0 to 4095 in steps of 1 subcarrier" - unnecessary detail in the table. It should be covered in 45.2.1.115.1

SuggestedRemedy

Add definition of resolution and range to 45.2.1.115.1

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.116 P 41 L 20 # 2361
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

"The PHY Discovery process is used to bring up new CNUs on the EPoC Coax network. " - we do not use "coax network" anymore

SuggestedRemedy

Replace "coax network" with the proper term.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.
Change:
"EPoC Coax network"
to:
"EPoC coax cable distribution network."

CI 45 SC 45.2.1.116 P 41 L 29 # 2636
Remein, Duane Huawei Technologies

Comment Type T Comment Status D

PHY Discovery Start should be a 32 bit register as 16 bits relative to timestamp only equates to about 320 us.

SuggestedRemedy

Change to 32 bits describing PHY Discovery Start lower (Reg 1916) & upper (Reg 1917) in 45.2.1.116.1 & 45.2.1.116.2 resp. Update subsequent register numbers.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.116.1 P 41 L 34 # 2633
Remein, Duane Huawei Technologies

Comment Type T Comment Status D

We should provide a way to disable PHY Discovery windows at the CNU.

SuggestedRemedy

After correcting the para numbering (45.2.1.116.1 not 45.2.a.116.1) add the following to the end of the para:
"Setting the PHY Discovery start parameter to zero disables the PHY Discovery window."

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.117 P 42 L 11 # 2366
Hajduczenia, Marek Bright House Network

Comment Type TR Comment Status D new CNU

"A new CNU may be assigned this value for CNU_ID if the CNU_ID assigned flag is false." It is very confusing why we would insert a value in 1.1917.14:0 and then disallow it to be assigned.

SuggestedRemedy

What is the purpose of this register 1.1917 altogether is unclear. Do we set the value for each newly discovered CNU and then write the value for each new CNU that is supposed to be discovered?

The purpose of registers 45.2.1.117 and 45.2.1.118 need to be discussed in more detail. It seems that right now we make it more complex than necessary - the value for CNU could be assigned automatically without involvement of the management layer

Proposed Response Response Status W

PROPOSED REJECT.

This was discussed in San Diego and it was agreed that CNU_ID values should be assigned by upper layers so that they can be aligned with LLID values. Details on the process were presented in remain_3bn_02_0714.pdf (see slide 9). Basically the Allowed CNU_ID and the CNU_ID assigned flag form a hand shake mechanism between the upper layers and the PHY as described in referenced section 102.4.4.

CI 45 SC 45.2.1.117 P 42 L 8 # 2365
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D new CNU

What is "allowed" CNU_ID? We do not define "disallowed" or any other values.

SuggestedRemedy

Remove the word "allowed" from 45.2.1.117

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

We have agreed that upper layers assign the CNU_ID values.

Change:

"the allowed CNU_ID 1 value has [not] been assigned to a CNU"

to:

"the Allowed CNU_ID value per register 1.1917.14:0 has [not] been assigned to a CNU"

CI 45 SC 45.2.1.117.1 P 42 L 19 # 2364
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

"When the flag is True the associated CNU_ID has been assigned to a new CNU whereas when the flag is False the associated CNU_ID has not been assigned."

There are no True and False values defined, but only 1 and 0.

SuggestedRemedy

Update the listed sentences to use values of 0 and 1.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.120.1 P 43 L 28 # 2404
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

"The DS PHY Link frame counter bits reflect the current DS PHY Link frame count." - we usually list register numbers

SuggestedRemedy

Change to "Registers 1.1923.15 through 1.1923.0 represent the current DS PHY Link frame count."

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.120.1 P 43 L 29 # 2405
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

Reference to the whole Clause 102 is useless for a reader: "For additional information on this counter see Clause 102."

SuggestedRemedy

Either insert a more detailed reference to where in Clause 102 we use it, or remove this statement altogether

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Remove

CI 45 SC 45.2.1.121.1 P 43 L 51 # 2408
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D
"A negative value causes the timing to be delayed, resulting in later times of transmission at the CNU." -

SuggestedRemedy
What does it mean "later times of transmission"

Proposed Response Response Status W
PROPOSED REJECT.
This is a question not a comment.

CI 45 SC 45.2.1.122 P 44 L 12 # 2410
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D
"Relative TX Power offset adjustment" - why is it relative and what is "adjustment"

SuggestedRemedy
Change to "TX Power offset"

Proposed Response Response Status W
PROPOSED ACCEPT.

CI 45 SC 45.2.1.122 P 44 L 22 # 2639
Remein, Duane Huawei Technologies

Comment Type T Comment Status D DataRate
See related comment against 101.4.2.1.2 Pg 124, Ln 24
Need mdio registers for provisioned data rates CLT_DS_DataRate & CLT_US_DataRate

SuggestedRemedy
Create CI 45 registers per remain_3bn_15_1114.pdf.

Proposed Response Response Status W
PROPOSED ACCEPT.

CI 45 SC 45.2.1.122 P 44 L 46 # 2643
Remein, Duane Huawei Technologies

Comment Type T Comment Status D Fec Counters
Need mdio register to reflect FecCodeWordCount, FecCodeWordFail, & FecCodeWordSuccess (see 101.3.3.1.4 pg 117 ln 31).

SuggestedRemedy
Add per remain_3bn_15_1114.pdf
Also add to MDIO Mapping table (see comment against 101.3.3.1.4 pg 117 ln 31)

Proposed Response Response Status W
PROPOSED ACCEPT.

CI 45 SC 45.2.1.122 P 44 L 46 # 2653
Remein, Duane Huawei Technologies

Comment Type T Comment Status D PhyTimingOffset
See cmt against 102.4.2 pg 192 ln 18
EDITORS NOTE (to be removed prior to publication): need to create a mdio register for RangingOffset (signed number same size as PhyTimingOffset) which defaults to zero. This is to allow the operator to set the distance to the coax cable distribution network in the event there is an analogue optical link between the CLT and coax cable distribution network.

SuggestedRemedy
Don't need sign bit. See remain_3bn_15_1114.pdf, remove Ed Note.

Proposed Response Response Status W
PROPOSED ACCEPT.

CI 45 SC 45.2.1.122 P 44 L 5 # 2637
Remein, Duane Huawei Technologies

Comment Type T Comment Status D
Table 45-78o—power offset bit definitions missing "PHY"

SuggestedRemedy
Change to:
Table 45-78o—PHY power offset bit definitions.

Proposed Response Response Status W
PROPOSED ACCEPT.

CI 45 SC 45.2.1.122.1 P 44 L 17 # 2411
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

Change "The PHY power offset, bits 7:0 of register 1.1926, is a" to "Registers 1.1926.7 through 1.1926.0 represent a"

SuggestedRemedy

Per comment

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.122.1 P 44 L 21 # 2638
Remein, Duane Huawei Technologies

Comment Type T Comment Status D

Need mdio register to reflect FecCodeWordCount, FecCodeWordFail, & FecCodeWordSuccess (see 101.3.3.1.4 pg 117 ln 31).

SuggestedRemedy

Add to CI 45 at end of PMA/PMD register section.

Proposed Response Response Status W

PROPOSED ACCEPT.

Note this is included in remain_3bn_15_1114.pdf

CI 45 SC 45.2.7a P 44 L 39 # 2634
Remein, Duane Huawei Technologies

Comment Type T Comment Status D

Table 45-191a shows a register for Resource Block type control but this function has been superseded by Pilot Pattern registers.

SuggestedRemedy

Remove line from table.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.7a.1 P 44 L 51 # 2391
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

The text describing the register set is confusing.

SuggestedRemedy

Revise text to read: "The 10GPASS-XR DS profile descriptor registers describe modulation parameters for each downstream OFDM subcarrier. Register 12.0 describes modulation parameters for downstream OFDM subcarriers number 0 through 3. Register 12.1 describes modulation parameters for downstream OFDM subcarriers number 4 through 7, etc. Finally, register 12.1023 describes modulation parameters for downstream OFDM subcarriers number 4092 through 4095. The assignment of individual bits in register 12.0 is shown in Table 45-191c. The remaining registers 12.1 through 12.1023 have the same bit structure as that of register 12.0."

Apply the same change to 45.2.7a.2

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The 10GPASS-XR DS profile descriptor registers determine the modulation parameters for each downstream OFDM subcarrier. Each register in the group controls 4 of the 4096 subcarriers that comprise the OFDM channel. Register 12.0 describes modulation parameters for downstream OFDM subcarriers number 0 through 3. Register 12.1 describes modulation parameters for downstream OFDM subcarriers number 4 through 7, etc. Finally, register 12.1023 describes modulation parameters for downstream OFDM subcarriers number 4092 through 4095. The assignment of individual bits in register 12.0 is shown in Table 45-191c. The remaining registers 12.1 through 12.1023 have the same bit structure as that of register 12.0. Changing the setting in these register does not affect the active profile, only the inactive profile (see 102.2.3 for a description of the Configuration ID bits in the PHY Link frame for information on active profile control).

CI 45 SC 45.2.7a.1 P 45 L 17 # 2393
Hajduczenia, Marek Bright House Network

Comment Type T Comment Status D

"Modulation to be used for a subcarrier 0" could be improved for clarity

SuggestedRemedy

Change to "Modulation profile for subcarrier 0". Same change for 12.0.15:12, 12.0.11:8, and 12.0.7:4 for downstream, and then 12.1024.15:12, 12.1024.11:8, 12.1024.7:4, and 12.1024.3:0

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 **SC 45.2.7a.1** **P 45** **L 33** # **2390**
Hajduczenia, Marek Bright House Network

Comment Type T **Comment Status D**
"Reserved values interpreted as null on receive" - what does this mean? We usually ignore reserved values on receive

SuggestedRemedy
Per comment

The same change to Table 45–191c

Proposed Response **Response Status W**
PROPOSED ACCEPT IN PRINCIPLE.
Change "reserved" to "null"

CI 45 **SC 45.2.7a.1.1** **P 45** **L 39** # **2394**
Hajduczenia, Marek Bright House Network

Comment Type T **Comment Status D**
"Register bits 12.0.15 through 12.0.12 specify the modulation type of downstream subcarrier 3 for the first DS OFDM channel. Bit enumeration for bits 15:12 is the same as for bits 3:0 for DS Modulation Type SC0" contains a lot of information which is redundant.

Change the text to read

"Register bits 12.0.15 through 12.0.12 specify the modulation profile for the downstream OFDM subcarrier number 3. See registers 12.0.3 through 12.0.0 for interpretation of individual bits."

Apply the same change to 45.2.7a.1.2, 45.2.7a.1.3, and 45.2.7a.1.4.

SuggestedRemedy
The same change should be applied to 45.2.7a.2.1, 45.2.7a.2.2, 45.2.7a.2.3, and 45.2.7a.2.4, with the proper change from downstream to upstream.

Proposed Response **Response Status W**
PROPOSED ACCEPT.

CI 45 **SC 45.2.7a.3** **P 48** **L 2** # **2396**
Hajduczenia, Marek Bright House Network

Comment Type T **Comment Status D**
Wrong register number: "12.2048 through 12.10237" should be "12.2048 through 12.10239" - at least that is what Table 45–191a indicates

SuggestedRemedy
Per comment

Proposed Response **Response Status W**
PROPOSED ACCEPT.

CI 45 **SC 45.2.7a.3.1** **P 48** **L 36** # **2398**
Hajduczenia, Marek Bright House Network

Comment Type T **Comment Status D**
Definition of the number format should be improved. Remove the editorial note and replace "The number is a 16-bit signed fractional two's complement number where bit 15 is the sign bit, bit 14 is integer part and bits 13:0 are the fractional part." to read

"The number is a 16-bit signed fractional two's complement number with the following structure:
* bit 15 is the sign bit,
* bit 14 represents the integer part of the number (1 or 0),
* bits 13 through 0 represent the fraction part of the number."

SuggestedRemedy
The same change in 45.2.7a.3.2

Proposed Response **Response Status W**
PROPOSED REJECT.
This change provide no significant improvement. The editors note was placed at the request of the WG secretary that we improve the definition of this signed fractional number. I think what is needed is a better description of what the 14 bit fractional part means.

Cl 45 **SC 45.2.a.116.1** **P 41** **L 38** # **2363**
Hajduczenia, Marek Bright House Network

Comment Type T **Comment Status D**

The editorial note makes more sense in the PCS / PHY link sections and not in registers. Register should point to where it is actually described.

SuggestedRemedy

Insert reference to where the the timestamp details are defined. Move the editorial note to that location.

Proposed Response **Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove the note.

Cl 56 **SC 56.1.3** **P 55** **L 10** # **2375**
Hajduczenia, Marek Bright House Network

Comment Type T **Comment Status D**

Time to change {EPoC_Rate} and {EPoC_Reach} into something meaningful

SuggestedRemedy

Change "{EPoC_Rate}" to "up to 10 Gb/s"
Change "{EPoC_Reach}" to "TBD"

Proposed Response **Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

For 10GPASS-XR-D CLT, Rate, replace {EPoC_Rate} with:
"Up to 10 Gb/s (tx)
Up to 1.8 Gb/s (rx)"

For 10GPASS-XR-U CNU, Rate, replace {EPoC_Rate} with:
"Up to 1.8 Gb/s (tx)
Up to 10 Gb/s (rx)"

For {EPoC_Reach}, replace both with:
"2.9(h)"

Add table comment (h):
"Maximal differential distance between CNUs. Reach may vary depending on the CCDN."

Cl 56 **SC 56.1.5** **P 56** **L 40** # **2376**
Hajduczenia, Marek Bright House Network

Comment Type T **Comment Status D**

"In contrast to previous editions of IEEE Std 802.3, ..." it is just an odd statement, given that it has been allowed in 802.3 since 2007 at least when 1G-EPON and EFM came out.

SuggestedRemedy

Change "In contrast to previous editions of IEEE Std 802.3, in certain circumstances" to "In certain circumstances"

Proposed Response **Response Status W**

PROPOSED REJECT.
This is outside our scope.

Cl 67 **SC 67.6.1** **P 61** **L 10** # **2377**
Hajduczenia, Marek Bright House Network

Comment Type TR **Comment Status D**

Note that there is an outstanding MR
(http://www.ieee802.org/3/maint/requests/maint_1255.pdf) adding changes to Clause 67 already and it is ready for ballot.

SuggestedRemedy

Once new revision process starts and merged base standard is available, alignment will be needed

Proposed Response **Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

Add Editor's note to front of introduction material on Page 21, near line 48:
"Will need to align to the new 802.3 revision once balloted."

Cl 76 **SC 76** **P 63** **L 1** # **2378**
Hajduczenia, Marek Bright House Network

Comment Type T **Comment Status D**

Title probably does not need "2014" in it ...

SuggestedRemedy

Remove "2014" from title of Clause 76

Proposed Response **Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

The "2014" in the Section header was a typo introduced for D11, it is not in D10. Will be removed by the editor.

Also, Editor needs to adjust copyright year for this framemaker file from 2013 to 2014.