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* **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.

Cl **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.

Cl **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 l00-3. 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.

Cl **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.

Cl **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

Cl **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 Cl 45 registers

SuggestedRemedy

See remein_3bn_14_1114.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **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.

Cl **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.

Seciton 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 Cl 101 to Cl 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* **101.3.3.1.7** *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"
inti 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_SUCESS 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

Cl **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

Cl **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.

Cl **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.

Cl **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.

Cl **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

Cl **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.

Cl **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.

Cl **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.

Cl **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.

Cl **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.

Cl **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 remein_3bn_16_1114.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **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 Cl 102 and ref from here. (see remein_3bn_12_1114.pdf for new figure)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **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 remein_3bn_14_1114.pdf)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **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.

Cl **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.

Cl **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 tranmission may straddle excluded and unused subcarriers."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **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).

Cl **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.

Cl **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 reuiqred 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

Cl **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

Cl **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.

Cl **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 numbeirng (lsb to msb) is consistent with the rest of 802.3. Change all "A" and "a" to "b".

Cl **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.

Cl **102** *SC* **102.1.3** *P* **170** *L* **4** # 2696

Kliger, Avi Broadcom

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

PHY Discovery Respnse 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.

Cl **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.

Cl **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 dows not carry data any more

SuggestedRemedy

Remove section 102.1.4.2.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **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"

Cl **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

Cl **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)

Cl **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.

Cl **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 Cl 45 and AllwdCNU_ID in Cl 102 (change in 4 places including Table 102-3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **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.

Cl **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.

Cl **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 contnuous pilots is used

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **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 foramts (see remein_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.

Cl **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 CNUs.

SuggestedRemedy

Add text that clrarifies 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 CNUs"

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 CNUs 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.

Cl **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.

Cl **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.

Cl **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.

Cl **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.

Cl **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

Cl **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.

Cl **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.

Cl **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.

Cl **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 CNUs. 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 CNUs. 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.

Cl **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 shold 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 opprtunities before transmitting the PHY Discovery Response"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See cmt 2628

Cl **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.

Cl **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.

Cl **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.

Cl **102** *SC* **102.4.2** *P* **192** *L* **18** # 2603

Remein, Duane Huawei Technologies

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

See related cmt Cl 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 remein_3bn_15_1114.pdf, remove Ed Note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **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 remein_3bn_02_1014.pdf (diff version compared to Draft 1.1 text is remein_3bn_021014CMP.pdf)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See remein_3bn_02c_1014.pdf (diff version compared to Draft 1.1 text is remein_3bn_02c_1014CMP.pdf)

Cl **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 numbet of probe symbols to be always 6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Changed to Cl 00 as this also impacts Cl 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* **103.2.2** *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.

Cl **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 simultanously, 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 CNUs. The CLT controls a CNU’s transmission by the assigning of grants.

SuggestedRemedy

Probably we need to change teh 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.

Cl **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)

Cl **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.

Cl **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.

Cl **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

Cl **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

Cl **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 shoudl 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.

Cl **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"

Cl **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"

Cl **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

Cl **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.

Cl **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.

Cl **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

SuggestedRemedy

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.

Cl **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

SuggestedRemedy

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."

Cl **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."

SuggestedRemedy

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.

Cl **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.

SuggestedRemedy

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.

Cl **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 unsuccessul
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

SuggestedRemedy

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.

Cl **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.

Cl **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.

Cl **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"

Cl **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 Truethe 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.

Cl **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.

Cl **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

Cl **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 Cl 45 registers per remein_3bn_15_1114.pdf.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **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 remein_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.

Cl **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 remein_3bn_15_1114.pdf, remove Ed Note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **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.

Cl **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.

Cl **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 Cl 45 at end of PMA/PMD register section.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Note this is included in remein_3bn_15_1114.pdf

Cl **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.

Cl **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.

Cl **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.

Cl **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.

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 shoudl 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 meanigful

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)"

Add a footnote to this table that these rates are based on maximum mandatory modulation format in table 100-1.

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 anoustanding 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 introduciton 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.