Cl **45** *SC* **45.2.1.116** *P* **41** *L* **20** # 2361

Hajduczenia, Marek Bright House Network

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

"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.

Response *Response Status* **C**

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

Cl **45** *SC* **45.2.a.116.1** *P* **41** *L* **33** # 2362

Hajduczenia, Marek Bright House Network

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

Wrong subclause number: 45.2.a.116.1 should be 45.2.116.1

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* **A**

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.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Remove the note.

Cl **45** *SC* **45.2.1.117.1** *P* **42** *L* **19** # 2364

Hajduczenia, Marek Bright House Network

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

"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.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.117** *P* **42** *L* **8** # 2365

Hajduczenia, Marek Bright House Network

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

Response *Response Status* **C**

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** *P* **42** *L* **11** # 2366

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **R** *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 regsters 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

Response *Response Status* **U**

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 remein_3bn_02_0714.pdf (see slide 9). Basiclly 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.

Cl **45** *SC* **45.2.1.120** *P* **43** *L* **13** # 2367

Hajduczenia, Marek Bright House Network

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

Full stop is missing at the end of the line

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.110.1** *P* **37** *L* **45** # 2368

Hajduczenia, Marek Bright House Network

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

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

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.110.2** *P* **37** *L* **53** # 2369

Hajduczenia, Marek Bright House Network

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

Format of the note is not correct (font and style)

SuggestedRemedy

Fix the style of note

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* **A**

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"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.111.1** *P* **38** *L* **28** # 2371

Hajduczenia, Marek Bright House Network

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

"Subcarriers are numbered from 0 to 4095 withsubcarrier 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

SuggestedRemedy

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.

Response *Response Status* **C**

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 5 MHz to 3.27675 GHz in 50 kHz steps. The minimum value for this register is 100."

This is consistent with TD#72.

Cl **45** *SC* **45.2.1.112.1** *P* **39** *L* **7** # 2372

Hajduczenia, Marek Bright House Network

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

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?

Response *Response Status* **C**

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* **A**

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

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.113.1** *P* **39** *L* **46** # 2374

Hajduczenia, Marek Bright House Network

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

"The DS PHY Link Start bits are used" should be "Registers 1.1911.11 through 1.1911.0"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.1.3** *P* **55** *L* **10** # 2375

Hajduczenia, Marek Bright House Network

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

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"

Response *Response Status* **C**

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* **R**

"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"

Response *Response Status* **C**

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* **A**

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

Response *Response Status* **C**

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* **A**

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

SuggestedRemedy

Remove "2014" from title of Clause 76

Response *Response Status* **C**

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.

Cl **45** *SC* **45.2.1.114** *P* **39** *L* **53** # 2379

Hajduczenia, Marek Bright House Network

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

"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.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.114** *P* **40** *L* **4** # 2380

Hajduczenia, Marek Bright House Network

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

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

Response *Response Status* **C**

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* **45.2.1.114.3** *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* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Change resolution to 500 kHz. Reword appropriately.

Cl **45** *SC* **45.2.1.114.4** *P* **40** *L* **42** # 2382

Hajduczenia, Marek Bright House Network

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

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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Remove the PHY Link search registers (this will impact Cl 102 also).

Cl **45** *SC* **45.2.1.114.5** *P* **40** *L* **47** # 2383

Hajduczenia, Marek Bright House Network

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

Register bits 1.1914.12 through 1.1914.0 specify the integer number of search steps through which to search for a PHY Link.

The word "integer" does not add anything here.

It is also not clear what "steps" are. Does it mean repetitions of the search process or something altogether else?

SuggestedRemedy

Remove "integer"
Clarify what "search steps" are or point to where they are defined.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Previous comments implied we should always include a numerical type for a field.
Change "steps" to "attempts"

Cl **45** *SC* **45.2.1.115** *P* **41** *L* **7** # 2384

Hajduczenia, Marek Bright House Network

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

"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

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.115.1** *P* **41** *L* **14** # 2385

Hajduczenia, Marek Bright House Network

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

"The US PHY Link Start bits are used to set" - we usually list the registers

SuggestedRemedy

Change to "Registers 1.1915.11 through 1.1915.0 set"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.6** *P* **72** *L* **53** # 2386

Hajduczenia, Marek Bright House Network

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

"Modulation format for PHY Link is specified in Clause 102.2.1.2 and 102.3.1.2" - remove the word "Clause" - these are subclauses

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.4** *P* **72** *L* **28** # 2387

Hajduczenia, Marek Bright House Network

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

Insert TBD here rather than just an Editor's note. The note will be gone, and the subclause will remain empty

SuggestedRemedy

Per comment

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove PMD_SIGNAL.indication everywhere. Reason: the MDI is always receiving broadband RF energy from both EPoC and other services on the cable network. It is not possible to distinguish a valid EPoC signal from within the broadband RF energy present from other services and and noise sources at the MDI interface.

Cl **100** *SC* **100.2.3** *P* **72** *L* **22** # 2388

Hajduczenia, Marek Bright House Network

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

The text "The PMD Receive function shall convey the bits received from the MDI according to the PMD to MDI RF specifications in 100.TBD to the PMD service interface using the message PMD_UNITDATA.indication(rx_unit), creating appropriately formatted stream of bits. " makes no sense.

SuggestedRemedy

Clarify the text, breaking it into two sentences (?). Seems that "according to the PMD to MDI RF specifications in 100.TBD" should be removed?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
From:
"The PMD Receive function shall convey the bits received from the MDI according to the PMD to MDI RF
specifications in 100.TBD to the PMD service interface using the message PMD_UNITDATA.indication(rx_unit), creating appropriately formatted stream of bits."

To:
"The PMD Receive function shall convey the bits received from the MDI to the PMD service interface using the message PMD_UNITDATA.indication(rx_unit), creating appropriately formatted stream of bits."

Cl **45** *SC* **45.2.7a** *P* **44** *L* **27** # 2389

Hajduczenia, Marek Bright House Network

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

"The assignment of in the OFDM registers section is shown in Table 45–191a"
Missing "." at the end of the line.
Unnecessary word "section" in the statement

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change:
"The assignment of in the OFDM registers section is shown in Table 45–191a"
to:
"The assignment bits of in the OFDM registers are shown in Table 45–191a

Cl **45** *SC* **45.2.7a.1** *P* **45** *L* **33** # 2390

Hajduczenia, Marek Bright House Network

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

"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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "reserved" to "QPSK" and remove note at bottom.

Cl **45** *SC* **45.2.7a.1** *P* **44** *L* **51** # 2391

Hajduczenia, Marek Bright House Network

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

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

Response *Response Status* **C**

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. 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 these registers 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).

Cl **45** *SC* **45.2.7a.1** *P* **45** *L* **5** # 2392

Hajduczenia, Marek Bright House Network

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

empty lines 5-7

SuggestedRemedy

remove empty lines of text
Same change on page 46, lines 18-20

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* **A**

"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

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7a.1.1** *P* **45** *L* **39** # 2394

Hajduczenia, Marek Bright House Network

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

"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.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7a.2** *P* **46** *L* **16** # 2395

Hajduczenia, Marek Bright House Network

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

"EDITORS NOTE (to be removed prior to publication): we need a way to copy the active profile copy to the inactive profile. This would affect these registers."

it is not clear what the difference is between active and inactive profiles and why we would need to copy "profiles". It seems that we have enough registers to cover all downstream and upstream subcarriers.

SuggestedRemedy

Remove the note in 45.2.7a.2 and 45.2.7a.1

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Recall that we have two profiles for both U S& DS; one is active (what is beign used on the wire) the other is inactvie and can be modified and then switched to once all modifications are complete.

Cl **45** *SC* **45.2.7a.3** *P* **48** *L* **2** # 2396

Hajduczenia, Marek Bright House Network

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

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

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7a.3.1** *P* **48** *L* **32** # 2397

Hajduczenia, Marek Bright House Network

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

A few editorial issues:
a) font sizes are different within this subclause. Please aslign it
b) "Register bits 12.2048.15:0" should read "Registers 12.2048.15 through 12.2048.0"
c) no need to capitalize "Real"
Simialr changes in 45.2.7a.3.2

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.7a.3.1** *P* **48** *L* **36** # 2398

Hajduczenia, Marek Bright House Network

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

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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change from:
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:
"The number is a UQ2.14 format unsigned fractional number."

modify the editors note that we need a reference for this format or provide a definition.

Cl **100** *SC* **100.1.1** *P* **66** *L* **13** # 2399

Hajduczenia, Marek Bright House Network

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

It is not clear why we keep on making references to all the stuff described in lines 13 through 22.

SuggestedRemedy

Remove lines 13 through 22

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.1.2** *P* **66** *L* **33** # 2400

Hajduczenia, Marek Bright House Network

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

Remove "Goals and objectives" - to be useful, this ought to be repeated in 101, 102, and 103.

SuggestedRemedy

Per comment - remove 100.1.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.1.4** *P* **66** *L* **43** # 2401

Hajduczenia, Marek Bright House Network

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

Subclause 100.1.4 shows transmit direction for CNU and CLT. Where is receive direction for CNU and CLT?

SuggestedRemedy

Insert receive direction for CNU and CLT

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor directed to create receive block diagrams.

Cl **100** *SC* **100.1.5** *P* **70** *L* **7** # 2402

Hajduczenia, Marek Bright House Network

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

"The asymmetric-rate 10GPASS-XR-D type PMD, transmitting in continuous mode and receiving in burst mode, is defined in this clause." - what data rates can we then support?

SuggestedRemedy

if the supported data rate is asymmetric, it should be nailed down and listed rather than up to 10Gb/s downstream and up to 10Gb/s downstream. Can we nail it down and update the numbers across the whole draft?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add additional statement:
"The data rate of a 10GPASS-XR PHY is dependent on network configuration (see Table 56-1)."

Cl **100** *SC* **100.2.6** *P* **72** *L* **35** # 2403
Hajduczenia, Marek Bright House Network

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

We specify modulation formats for transmitters only - does that imply that a receiver on both ends of the link needs to support the very same modulation formats well? Should that be specified?

SuggestedRemedy

Add specifications for supported modulation formats for CNU and CLT receivers.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Resolved in comment 2599

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

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

"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."

Response *Response Status* **C**

ACCEPT.

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

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

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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Remove

Cl **45** *SC* **45.2.1.121** *P* **43** *L* **41** # 2406
Hajduczenia, Marek Bright House Network

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

"Transmit timing offset adjustment." - full stop not needed at the end of the description of 1.1924.15:0 and 1.1925.15:0

SuggestedRemedy

Remove "." at the end of both descriptions

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.121.1** *P* **43** *L* **49** # 2407
Hajduczenia, Marek Bright House Network

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

Missing space in "PHY timing offset(1.1924.15:0 & 1.1925.15:0)"

SuggestedRemedy

Insert the missing space

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

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

"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"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Chang efrom:
A negative value causes the timing to be delayed, resulting in later times of transmission at the CNU.
To:
A negative value causes the timing of CNU transmissions to be delayed.

Cl **45** *SC* **45.2.1.122** *P* **44** *L* **10** # 2409
Hajduczenia, Marek Bright House Network

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

Resize the "Bit(s)" column so that "1.1926.15:8" fits into a single line of text

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

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

"Relative TX Power offset adjustment" - why is it relative and what is "adjustment"

SuggestedRemedy

Change to "TX Power offset"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change table description cell to "TX Power adjustment"

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

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

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

Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.127** *P* **22** *L* **15** # 2412
Hajduczenia, Marek Bright House Network

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

need a comma before "and" in a serial list

SuggestedRemedy

Change "Clause 100, Clause 101 and Clause 102" to "Clause 100, Clause 101, and Clause 102"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **01** *SC* **1.4.160a** *P* **22** *L* **32** # 2413
Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **A** *CP Def*

"an effective delay between symbol payloads" ... what is a "symbol payload"? This is the only instance in the whole draft.

SuggestedRemedy

Either define what it is, or use terms used in PCS clause for EPoC.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See topic CP Def

Change: "A redundant set of samples appended to the beginning of an OFDM symbol to introduce an effective delay between symbol payloads, thus mitigating intersymbol interference. The k redundant CP samples attached at the beginning of the symbol are identical to the last k samples of the same symbol. The associated effective delay, (k x the OFDM sampling rate), is used primarily to combat multipath propagation effects."

To:
"A redundant set of samples prepended to an OFDM symbol. The k redundant CP samples attached at the beginning of the symbol are identical to the last k samples of the same symbol prior to applying windowing. "

Cl **01** *SC* **1.4.160a** *P* **22** *L* **32** # 2414

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **A** *CP Def*

"The k redundant CP samples attached at the beginning of the symbol are identical to the last k samples of the same symbol." - this is not really important to the definition, but might need to be explained / included where the actual cyclix prefix is shown relatve to the frame structure.

SuggestedRemedy

Remove from definition and move into location where the use of a cyclix prefix is defined in PCS / PMD Clause

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 2413
see topic CP Def

Cl **01** *SC* **1.4.280a** *P* **22** *L* **39** # 2415

Hajduczenia, Marek Bright House Network

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

OFDM channel definition does not read right and contains unnecessary details.

SuggestedRemedy

Change to read: "A data transmission channel carrying a number of closely-spaced orthogonal QAM subcarriers. The total data capacity of the OFDM channel is divided into individual QAM subcarriers, where each subcarrier is modulated with low data rate."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change from:
A data transmission channel in which a large number of closely-spaced in frequency, orthogonal QAM subcarriers are transmitted. Each of the QAM subcarriers carries a small percentage of the total payload at a low data rate.
to:
"A data transmission channel in which the transmitted data is carried over a large number of orthogonal QAM subcarriers. Thus individual QAM subcarriers carry a small percentage of the total payload at a low data rate."

Cl **01** *SC* **1.4.331a** *P* **22** *L* **50** # 2416

Hajduczenia, Marek Bright House Network

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

Definition of QAM symbol is very confusing.

SuggestedRemedy

do we really need ", or, in OFDM, that modulate each of OFDM subcarriers" ?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Remove the definition.

Cl **45** *SC* **45.2.1** *P* **28** *L* **19** # 2417

Hajduczenia, Marek Bright House Network

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

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 jave clearly marked rows being inserted or modified.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add table continuation.

Cl **00** *SC* **45.2.1** *P* **28** *L* **0** # 2418

Hajduczenia, Marek Bright House Network

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

Seems that somebody did not change the template correctly: "IEEE P802.3xx Task Force name Task Force"

SuggestedRemedy

Please update the master template for pages in the draft. There are multiple instanced of this problem.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Changed to Cl 00

Cl **45** *SC* **45.2.1.6** *P* **30** *L* **45** # 2419

Hajduczenia, Marek Bright House Network

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

is there any reason why this editorial note is marked in yellow highlight?

SuggestedRemedy

Remove the highlight.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.107** *P* **33** *L* **52** # 2420

Hajduczenia, Marek Bright House Network

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

"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.

Response *Response Status* **C**

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"

Cl **45** *SC* **45.2.1.107.1** *P* **34** *L* **23** # 2421

Hajduczenia, Marek Bright House Network

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

"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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add editors note that states ""every 8th" is confusing. Replace with a formula and update SD FEC Decoding (101)."

Cl **45** *SC* **45.2.1.107.2** *P* **34** *L* **29** # 2422

Hajduczenia, Marek Bright House Network

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

font is messed up in "102.4) on the coaxial cable distribution network. When read as a zero, bit 1.1900.1 indicates that the PHY has not completed PHY Discovery on the coaxial cable distribution network." - words "coaxial cable distribution network" are inserted in smaller font than the rest of the text

SuggestedRemedy

Fix font size / type

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.107** *P* **34** *L* **8** # 2423

Hajduczenia, Marek Bright House Network

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

"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.

Response *Response Status* **C**

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* **A**

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.

Response *Response Status* **C**

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** *P* **35** *L* **20** # 2425

Hajduczenia, Marek Bright House Network

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

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.

Response *Response Status* **C**

REJECT.

Vote to accept
For: 2
Against 6
Abstain 4

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

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

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

SuggestedRemedy

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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to "10GPASS-XR"

Cl **45** *SC* **45.2.1.109** *P* **36** *L* **6** # 2427
Hajduczenia, Marek Bright House Network

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

Extra lines 6-8

SuggestedRemedy

Remove

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.109** *P* **36** *L* **4** # 2428
Hajduczenia, Marek Bright House Network

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

Statement does not read right: "The assignment of bits in the DS OFDM channel frequency control register 1 through 5 are shown in
Table 45–78c."

SuggestedRemedy

Change to "The assignment of bits in the DS OFDM channel frequency control register 1 through 5 >>is<< shown in
Table 45–78c."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

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

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

Response *Response Status* **C**

ACCEPT.
It is as written; 5 separate channels (1-5).
Add crossreference to 101.4.3.11

Cl **100** *SC* **100.2.8.1** *P* **73** *L* **31** # 2430
Hajduczenia, Marek Bright House Network

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

No need for lengthy titles: "Definitions and assumptions for defining OFDM channel power"

SuggestedRemedy

Change to "OFDM channel power definitions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.8.1** *P* **73** *L* **34** # 2431
Hajduczenia, Marek Bright House Network

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

This section defines the terms and concepts used whenspecifying the CLT RF output requirements.

SuggestedRemedy

We use the term "subclause" and not "section" - there are at least 20 instances in the document were changes ought to be made.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Consider making this an "00" for Editors to review where text "section" is used and make appropriate change to "subclause".

Cl **100** *SC* **100.2.8.1** *P* **73** *L* **34** # 2432

Hajduczenia, Marek Bright House Network

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

Text "For an
OFDM channel there is a) the number of equivalent 6 MHz channels (N eq), b) the encompassed spectrum, c)
the occupied bandwidth, and d) the modulated spectrum." is not needed - this section just adds definitions, as outlined in the previous sentence

SuggestedRemedy

Remove this text

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Removal of this text would remove the definition for Neq.

Suggest remedy: add editors note to beginning of subclause 100.2.8:

EDITORS NOTE (to be removed prior to publication): This subclause needs to be thoroughly reviewed and cleaned up for Draft 1.2. Additionally, Neq, Neq', and Neq'', need to be well defined.

Cl **100** *SC* **100.2.8.1** *P* **73** *L* **44** # 2433

Hajduczenia, Marek Bright House Network

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

Several problems with Equation 100-1:
1) "." ahead of the equation.
2) lengthy names of parameters
3) missing definition of ceilign symbol

SuggestedRemedy

1) remove "." at the head of the equation
2) use the following variable names: O>>B<< for occupied bandwidth, C>>B<< for channel bandidth, C>>S<< for channel size
3) copy definition of ceiling from 77.2.2.4

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment #2670.
Add definition of ceiling symbols.

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* **C**

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* **48** # 2435

Hajduczenia, Marek Bright House Network

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

A pretty convoluted way to express definitions. Also, we do not put examples in the middle of the definition: "The encompassed spectrum in MHz is 204.8 MHz, minus the number of subcarriers in the band edge exclusion sub-band for the upper and lower band edges (combined), multiplied by the subcarrier spacing in MHz. For example, with subcarrier spacing of 50 kHz and 150 lower band edge subcarriers and 152 upper band edge subcarriers (for a total of 302 subcarriers in the two band edge exclusion sub-bands), the encompassed spectrum = 204.8 - 302*(0.05) = 189.7 MHz. The encompassed spectrum is also equal to the center frequency of the highest frequency modulated subcarrier minus the center frequency of the lowest frequency modulated subcarrier in an OFDM channel, plus the subcarrier spacing."

SuggestedRemedy

Reword to "The encompassed spectrum is equal to the width of the OFDM channel (expressed in MHz) less subcarriers in the band edge exclusion sub-band for the upper and lower band edges (combined), multiplied by the subcarrier spacing (expressed in MHz). The encompassed spectrum may be also expressed as the difference between the center frequency of the highest frequency modulated subcarrier minus the center frequency of the lowest frequency modulated subcarrier in an OFDM channel, plus the subcarrier spacing (all expressed in MHz). For example, provided the OFDM channel of 204.8 MHz, subcarrier spacing of 50 kHz and 150 lower band edge subcarriers and 152 upper band edge subcarriers (a total of 302 subcarriers in two band edge exclusion sub-bands), the encompassed spectrum is equal to 204.8 - 302 x 0.05 = 189.7 MHz."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Reword to
"The encompassed spectrum is the difference between the center frequency of the highest active subcarrier and the lowest active subcarrier in an OFDM channel, plus the subcarrier spacing (all expressed in MHz). "

For example wording see 2675

Cl **100** *SC* **100.2.8.1** *P* **74** *L* **21** # 2436

Hajduczenia, Marek Bright House Network

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

"This standard requires that the CLT is terminated with a 75 Ohm load per Table 100-1" - what is this doing in the section of definitions? if the CLT termination requirements are already covered in Table 100-1, why repeat it?

SuggestedRemedy

Remove this text

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.8.1.1** *P* **75** *L* **23** # 2437

Hajduczenia, Marek Bright House Network

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

100.2.8.1.1 should be like 100.2.8.2 - no need to make this a subclause of 100.2.8.1

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Assume suggested remedy is to change from H5 to H4 level.

Cl **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* **C**

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:"

Cl **100** *SC* **100.2.8.1.1** *P* **74** *L* **41** # 2439

Hajduczenia, Marek Bright House Network

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

Text in line 41-44 is not really bringing into the description. Why is there?

SuggestedRemedy

Remove lines 41-47

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Combine para at line 41 with previous para.
Change fm:
"The condition for these requirements is all Neq' commanded to the same average power, except for the Single Channel Active Phase Noise, Diagnostic Carrier Suppression, OFDM Phase Noise, OFDM Diagnostic Suppression, and power difference requirements, and except as described for Out-of-Band Noise and Spurious Requirements."
to:
"These requirements are all tested under the condition where all Neq' [channels] are commanded to the same average power, with the exception of the following: Single Channel Active Phase Noise, Diagnostic Carrier Suppression, OFDM Phase Noise, OFDM Diagnostic Suppression, and power difference requirements, and as described for Out-of-Band Noise and Spurious Requirements."

Cl **100** *SC* **100.2.8.1.1** *P* **75** *L* **2** # 2440

Hajduczenia, Marek Bright House Network

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

Several issues with the way Table 100-1 is structured:
1) typically, we have a separate column for units - see Table 75-5 for example of that
2) missing spaces and extra spaces between number
3) row "Signal Type" is meaningless - should be removed
4) "(4K FFT)" is unnecessary - remove
5) " - number of continuous pilot tones" - if that is needed, it should be moved to the Parameter name
6) for "Level" parameter, "adjustable" is meaningless - it is defined in Table 100-2 anyway. Change to "see Table 100-2"
7) given that table 100-2 is mandatory, support for 8192-QAM and 16384-QAM is optional and should be removed from the table.
8) "Average over center 400 kHz subcarriers within gap" shoudl be moved to the parameter name, and not have it in the values
9) Notes in 802.3 specs are referenced in a different way - we do not "See Notes 4,6", look at Table 75-5 for format reference.
10) Parameters which define values in ranges, such as "Inband Spurious, Distortion, and Noise:" usually come with a graphical representation of the values in specific ranges. Please insert a chart for such parameter and point to it from within the table. Drawing is illustrative of course.
11) "[CW not processed via FFT]" - what does this mean?

SuggestedRemedy

Apply changes per comment

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
1) Accept
2) n/a
3) Accept
4) Accept
5) Accept
6) Accept
7) Resolved in cmt 2599
8) Accept
9) Accept, modifying to superscripts
10) Reject.
11) Move the three phase noise rows to new section on Phase noise requirements.

Cl **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* **C**

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.

Cl **100** *SC* **100.2.8.2** *P* **77** *L* **13** # 2442

Hajduczenia, Marek Bright House Network

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

Text in 100.2.8.1.1 already covers a requirement: "A CLT shall output an OFDM RF modulated signal with the characteristics defined in Table 100-1,
Table 100-2, and Table 100-3." - text in line 16, page 77 is not needed (repeated).

SuggestedRemedy

Remove "A CLT shall generate an RF output with power capabilities as defined in Table 100-2"

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.8.2** *P* **77** *L* **18** # 2443

Hajduczenia, Marek Bright House Network

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

Probably the requirement in line 17 shoudl be clarified: "The CLT shall be capable of adjusting OFDM channel RF power on a per channel basis as stated in Table 100-2." - it is not clear what it really means - "shall be capable" ...

SuggestedRemedy

Change to "The CLT shall adjust the RF power per OFCM channel per Table 100-2."

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.8.2** *P* **77** *L* **23** # 2444

Hajduczenia, Marek Bright House Network

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

Several issues with the way Table 100-2 is structured:
1) typically, we have a separate column for units - see Table 75-5 for example of that
2) missing spaces and extra spaces between number
3) "Required power in dBmV per OFDM channel:" - unnecessary, remove
4) what does it mean: "below required power level specified below maintaining full fidelity over the 8 dB range" - it this matters (really), it should be placed into a section on measurement and testing requirements, and not within the table which is supposed to provide numeric values
5) what does this mean: "May: required power (in table below) to required power - 8 dB, independently on each channel." and how do we test it?
6) what does "Strictly monotonic" mean?
7) "Diagnostic carrier suppression modes" should be described in a separate section rather than making them part of this table - it is unclear what they are here for at all
8 entry for RF output port muting should contain just the number. The measurement confition - all the text you have right now - should go into the section on measurement and testing

SuggestedRemedy

Address individual comments on table 100-2

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
1) Accept
2) Accept
3) Remove "Required power per OFDM channel for" from left two table cells.
4) Change row 3 value from "≥ 8 dB below required power level specified below maintaining full fidelity over the 8 dB range" to " at least 8 dB below the required power level specified in the two rows above, maintaining full fidelity over the range"
5) Remove row 4. On row 3 add "For each OFDM channel"
6) Reject
7) Remove these rows from this table
8) Accept move Port muting rows to new section/table on testing.

Cl **100** *SC* **100.2.1** *P* **70** *L* **29** # 2445

Hajduczenia, Marek Bright House Network

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

EDITORS NOTE (to be removed prior to publication): at this time, it is not clear what data format will be used
between the bottom of PMA and top of PMD (across PMD service interface). Text will be expanded when
more information on this interface is available.

SuggestedRemedy

This is not true anymore - data across PMA service interface will be serial and not block oriented. Remove the editorial note.

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.1.2** *P* **71** *L* **3** # 2446

Hajduczenia, Marek Bright House Network

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

This primitive defines the transfer of TBD data from the Clause 101 PMA to the Clause 100 PMD.

SuggestedRemedy

TBD should be replaced with "1 bit"
Also replace "a TBD" with "a continuous stream of bits" in line 6.
Also replace "The tx_unitparameter represents TBD." with "The tx_bit parameter can take one of two values: ONE or ZERO."
Remove the editorial note in lines 8-10.

Similar changes to be applied to 100.2.1.3

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.8.3** *P* **79** *L* **50** # 2447

Hajduczenia, Marek Bright House Network

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

This text (starting in line 50 and ending on the top of the next page) seems like a set of definitions and should go into the subclause 100.2.8.1 and not be here.

SuggestedRemedy

Move to 100.2.8.1 and simplify the wording to break out actual definitions.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor to move para starting at line 50 towards the beginning of the section and pull out the equations into a numbered equations.

Cl **100** *SC* **100.2.8.3** *P* **80** *L* **35** # 2448

Hajduczenia, Marek Bright House Network

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

There are two equations in Table 100-3 - move them into main text, put references on them and then reference inside of teh table (if needed)

Also, do we need to denote this parameter as "N*" ? Coudl we come up with a notation that does not require special characters?

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This is addressed in comment #2658

Cl **100** *SC* **100.2.8.3** *P* **80** *L* **48** # 2449

Hajduczenia, Marek Bright House Network

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

Complex equations should not break between lines - this impedes readability

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Ask Editor's to see if column widths can be altered to permit these equations on one line. Otherwise, it is what it is, and readable.

Cl **100** *SC* **100.2.9** *P* **81** *L* **50** # 2450

Hajduczenia, Marek Bright House Network

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

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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

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

Cl **100** *SC* **100.2.10** *P* **83** *L* **17** # 2451

Hajduczenia, Marek Bright House Network

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

100.2.10 PMD receive function - what is the intent of this function?

SuggestedRemedy

Remove 100.2.10 PMD receive function altogether. We need CLT Tx spec, CNU Tx spec, CLT Rx and CNU Rx specs. Please revise the outline of the clause.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Includes 100.2.10.1

Cl **100** *SC* **100.2.11.1** *P* **83** *L* **25** # 2452

Hajduczenia, Marek Bright House Network

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

What does it mean: "The OFDM signals and CNU interfaces shall have the characteristics and limitations defined in Table 100-4"

SuggestedRemedy

Probably need to revise to read "The CNU receiver shall meet electrical parameters per Table 100-4."

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.11.1** *P* **83** *L* **36** # 2453

Hajduczenia, Marek Bright House Network

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

Issues with definitions included in Table 100-4:
1) Variable Bit Loading should be removed - this should be changes into test requirements
2) remove "assuming negligible power outside this range" - if that means anything, add in the form of a note to the parameter
3) "Note: Applies when lower frequency boundary is 108 MHz" and "Note: Applies when upper frequency boundary is 1.794 GHz" should be converted into notes to specific values

SuggestedRemedy

Fix the issues per comment

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.11.2** *P* **84** *L* **14** # 2454

Hajduczenia, Marek Bright House Network

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

"The required level for CNU downstream post-FEC error ratio is defined as less than or equal to 10-6 PER (packet error ratio) with 1500 byte Ethernet packets. " - is this intended to be a requirement?

SuggestedRemedy

If this is intended to be a requirement, we need to convert to "shall"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to:
"The required level for CNU downstream post-FEC error ratio shall be less than or equal to 10–6 FLR (frame loss ratio) with 1500 byte Ethernet packets."

Cl **100** *SC* **100.2.11.2.1** *P* **84** *L* **20** # 2455

Hajduczenia, Marek Bright House Network

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

What is "implementation loss" and where it is defined? This is the only location where it is used and ti is subject in a shall statement.

SuggestedRemedy

Clarify what it is, or reword so that a vague term is not used.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change:
Implementation loss of the CNU shall be such that the CNU achieves the required error rate when operating
at a CNR as shown in Table 100–5, under input load and channel conditions as follows:"
to:
"CNU FLR shall be less than or equal to the required loss ratio when operating at a CNR as shown in Table 100–5, under input load and channel conditions as follows:"

Change PER to FLR in entire clause.

Cl **100** *SC* **100.2.1.4** *P* **71** *L* **36** # 2456

Hajduczenia, Marek Bright House Network

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

"A signal for transmitter control is generated as described in TBD for the Clause 101 PCS" - this needs a bit more clarity to the language

SuggestedRemedy

Change to "A signal for transmitter control is generated by the Data Detector function - see TBD.".

I believe that the signal will be generated by the Data Detector function (whatever it is for EPoC).

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.1.4** *P* **71** *L* **36** # 2457

Hajduczenia, Marek Bright House Network

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

"Clause 101 transfers this signal across towards the Clause 100 without any changes. " - wording - clause does not transfer anything.

SuggestedRemedy

Change to "Clause 101 PCS transfers this signal across towards the Clause 100 PMD without any changes."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.1.2** *P* **71** *L* **16** # 2458

Hajduczenia, Marek Bright House Network

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

EDITORS NOTE (to be removed prior to publication): data rate has to be somehow related to modulation depth. Right now it is marked as TBD

SuggestedRemedy

Remove the editorial note in lines 16-17
Change text in line 12: "at a nominal signaling speed of TBD GBd" to read "at the nominal speed in the function of the aggregate OFDM channel capacity, as defined by TBD." - TBD should likely to point where we describe the use of CVlause 45 registers for modulation profiles for individual subcarriers.

Similar change to 100.2.1.3

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Per comment except
Change text in line 12: "at a nominal signaling speed of TBD GBd" to read "at the nominal speed in the function of the aggregate OFDM channel capacity, as defined by TBD (see {ref}).
EDITORS NOTE (to be removed prio to publication): needs to be tied back to data rate variables and Cl 45 registers"

Cl **100** *SC* **100.2.5** *P* **72** *L* **32** # 2459

Hajduczenia, Marek Bright House Network

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

"The PMD_SIGNAL.request(tx_enable) message is defined for all CNU PMDs specified in Clause 100" - I thought we only specified one PMD

SuggestedRemedy

Change to "The PMD_SIGNAL.request(tx_enable) message is defined for the CNU PMD specified in Clause 100"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.6.1** *P* **73** *L* **3** # 2460

Hajduczenia, Marek Bright House Network

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

"In baseline channel conditions, as defined in Annex 100A ... " - does this make this Annex normative or informative?

SuggestedRemedy

Mark Annex 100A accordingly

Response *Response Status* **C**

REJECT.
Annex 100A is already marked normative.

Cl **100** *SC* **10.2.6.1** *P* **73** *L* **3** # 2461

Hajduczenia, Marek Bright House Network

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

"a 192 MHz OFDM channel shall target a 1.6 Gb/s data rate at MAC/PLS" - what does it really mean?

SuggestedRemedy

Change to "a 192 MHz OFDM channel shall support the data rate of 1.6 Gb/s at MAC/PLS" or whatever other data rate that is assumed to be achievable. "shall target" is meaningless

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to:
"a 192 MHz OFDM channel supports a data rate of at least 1.6 Gb/s at MAC/PLS"

Cl **100** *SC* **100.2.6.1** *P* **73** *L* **4** # 2462

Hajduczenia, Marek Bright House Network

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

"The MAC/PLS date rate shall scale linearly with the number of OFDM channels, in the same baseline channel conditions in each channel." - this is not testable. No need for "shall" statement here

SuggestedRemedy

"The MAC/PLS date rate scales linearly with the number of OFDM channels, in the same baseline channel conditions in each channel."

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.6.1.1** *P* **73** *L* **8** # 2463

Hajduczenia, Marek Bright House Network

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

100.2.6.1.1 is likely supposed to be at the same level as 100.2.6.1

SuggestedRemedy

Change 100.2.6.1.1 to 100.2.6.2
Insert TBD in this subclause and remove all empty lines in this Clause (100)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Refer to Comment #2664 that suggests remedy affecting these sub clauses.

Remove all empty lines as per remedy.

Cl **100** *SC* **100.2.7.1** *P* **73** *L* **18** # 2464

Hajduczenia, Marek Bright House Network

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

The CLT transmitter and CNU receiver shall support a range that includes from 54 MHz to 1212 MHz. Equipment may be adapted to all or part of this frequency band to suit regional requirements. Equipment conforming to this standard shall clearly mark downstream frequency ranges.

A bunch of unnecessary requirements ... The first shall is already covered in Table 100-1, which is already mandatory. A separate section on PMD marking and labelling is where the second "shall" needs to be placed in

SuggestedRemedy

Change the text to read: "The CLT transmitter and CNU receiver is expected to support a frequency range from 54 MHz to 1212 MHz. Equipment may be adapted to all or part of this frequency band to suit regional requirements. Equipment conforming to this standard needs to be clearly mark the supported downstream frequency ranges."

Apply similar changes to 100.2.7.2

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change the text to read: "The CLT transmitter and CNU receiver is expected to support a frequency range from 54 MHz to 1218 MHz. Equipment may be adapted to all or part of this frequency band to suit regional requirements. Equipment conforming to this standard needs to clearly mark the supported downstream frequency ranges."

Apply similar changes to 100.2.7.2

Cl **100** *SC* **100.2.7.2.1** *P* **73** *L* **28** # 2465

Hajduczenia, Marek Bright House Network

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

Subclause 100.2.7.2.1 is empty and should be marked with TBD.

SuggestedRemedy

Insert TBD into thsi subclause. It is not clear what specific text should go in here. Consider adding an editorial note which outlines the necessary text.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Comment #2666, was adopted, this subsection is removed. No TBD needed.

Cl **100** *SC* **100.2.8.2** *P* **78** *L* **50** # 2466

Hajduczenia, Marek Bright House Network

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

Meaingless requirements that are not testable: "An N
eq-channel per RF port CLT shall comply with all requirements operating with all Neq channels on the
RF port, and with all requirements for an N
eq'-channel per RF port device operating with Neq' active chan
nels on the RF port for all values of N
eq' less than Neq, where Neq' is the full set of modulated or active chan
nels."

SuggestedRemedy

The use of Neg, Neg prime is very confusing. Furthermore, what the actual purpose of this statement?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Note: this subclause and definitions for Neq, Neq', Neq'' need to be cleaned up. Previous comment added editor's note for this subclause.
Editors note added to section 100.2.8 to check whole section.

Cl **100** *SC* **100.2.8.3** *P* **79** *L* **3** # 2467

Hajduczenia, Marek Bright House Network

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

What is "N"' in this text? "In cases where the N' combined channels ... "

SuggestedRemedy

Per comment

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editors note added to section 100.2.8 to check whole section.

Note: this subclause and definitions for Neq, Neq', Neq'' need to be cleaned up. Previous comment added editor's note for this subclause.

Cl **100** *SC* **100.2.8.3** *P* **79** *L* **4** # 2468

Hajduczenia, Marek Bright House Network

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

Terminology: "command" may have some meaning in DOCSIS-land, but it does not have any definition in 802.3. What does it mean? Either define it well, ot cease to use terms meaningless to readers.

SuggestedRemedy

Per comment

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to "set"

Cl **103** *SC* **103** *P* **201** *L* **1** # 2502

Hajduczenia, Marek Bright House Network

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

Tile contains "2014" for some reason. "103. 2014Multipoint MAC Control for EPoC".

SuggestedRemedy

Fix it - there are more instanced in the draft where "2014" appears without any reason.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.1** *P* **201** *L* **17** # 2503

Hajduczenia, Marek Bright House Network

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

"The EPoC topology is similar to the P2MP topology of EPON with the optical line terminal being replaced by a cable line terminal (CLT), the optical network units replaced by cable network units (CNU) and operating over a coaxial network rather than an optical network." Acroyms already defined in previous para

SuggestedRemedy

Remove acronym expansions - already defined in previous para.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.1** *P* **201** *L* **46** # 2504
Hajduczenia, Marek Bright House Network

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

Missing full stop

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.1.2** *P* **205** *L* **32** # 2505
Hajduczenia, Marek Bright House Network

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

Font in "Multipoint Transmission Control 103.2.2", "Control Parser 103.2.2" and "Control Multiplexer 103.2.2" seems to be different than other font in the drawing.

SuggestedRemedy

Align font for all elements in the drawing.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.1.5** *P* **206** *L* **27** # 2506
Hajduczenia, Marek Bright House Network

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

Formatting got messed up: compare text from lines 27-37 with 802.3-2012, 77.1.5, page 659

SuggestedRemedy

Please fix the formatting.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.3.2.1** *P* **224** *L* **1** # 2507
Hajduczenia, Marek Bright House Network

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

Incorrect format of NOTE

SuggestedRemedy

Please apply proper styles to NOTEs in text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.3.2.3** *P* **224** *L* **34** # 2508
Hajduczenia, Marek Bright House Network

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

EPOC should be EPoC

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.3.4.2** *P* **240** *L* **24** # 2509
Hajduczenia, Marek Bright House Network

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

"VALUE: 0x002FAF08 (50 ms, default value)" got shifted to left side of the page. Compare where it is set in mpcp_timeout variable above.

SuggestedRemedy

Align formatting

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.3.5.2** *P* **244** *L* **25** # 2510
Hajduczenia, Marek Bright House Network

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

Is there any reason why text in BurstOverhead variable is marked in yellow?

SuggestedRemedy

Remove the special color from the text and trailing " character as well.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The text is highlighted to denote that it needs updates. See Pg 3 line 13 "Yellow highlighted text requires other updates"

Cl **103** *SC* **103.3.6.1** *P* **253** *L* **10** # 2511
Hajduczenia, Marek Bright House Network

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

Lines 10 and 11 should have a format of NOTE ...

SuggestedRemedy

Apply the proper format of NOTE

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **103** *SC* **103.3.6.2** *P* **254** *L* **30** # 2512
Hajduczenia, Marek Bright House Network

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

Emoty lines around Table 103-2. Also table is missing "continued" in title on second page.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Google and I have no idea what "Emoty" means.
Continued will be added to the table.

Cl **103** *SC* **103.3.6.3** *P* **257** *L* **3** # 2513
Hajduczenia, Marek Bright House Network

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

Extra blank lines around Table 103-3 and after item g) under the said table.

SuggestedRemedy

Remove empty spaces.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100A** *SC* **100A** *P* **273** *L* **1** # 2514
Hajduczenia, Marek Bright House Network

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

Extra 2014 in the title, again

SuggestedRemedy

Remove

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

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

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.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor to update para and character styles per current template

Cl **103** *SC* **103.2.2** *P* **210** *L* **18** # 2516

Hajduczenia, Marek Bright House Network

Comment Type **ER** *Comment Status* **R**

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 refrences 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.

Response *Response Status* **U**

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

Cl **103** *SC* **103.3.6.4** *P* **258** *L* **48** # 2517

Hajduczenia, Marek Bright House Network

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

"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?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
This will be capitalized.

Cl **100A** *SC* **CV.2** *P* **273** *L* **10** # 2518

Hajduczenia, Marek Bright House Network

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

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.

Response *Response Status* **C**

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.

Cl **103** *SC* **103.1** *P* **201** *L* **24** # 2519

Hajduczenia, Marek Bright House Network

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

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

SuggestedRemedy

Remove.

Response *Response Status* **C**

ACCEPT.

Cl **103** *SC* **103.1** *P* **201** *L* **33** # 2520

Hajduczenia, Marek Bright House Network

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

"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."

Response *Response Status* **C**

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* **A**

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.

Response *Response Status* **C**

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* **R**

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.

Response *Response Status* **C**

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.

Cl **103** *SC* **103.1.2** *P* **204** *L* **1** # 2523

Hajduczenia, Marek Bright House Network

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

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

Response *Response Status* **C**

ACCEPT.

Cl **103** *SC* **103.2.2** *P* **211** *L* **25** # 2524

Hajduczenia, Marek Bright House Network

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

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.

Response *Response Status* **C**

ACCEPT.

Cl **103** *SC* **103.3.3** *P* **224** *L* **50** # 2525

Hajduczenia, Marek Bright House Network

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

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 ponter where the process is described in detail.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Where Discovery Response is discussed insert a statement that CNU's that have not completed PHY Discovery will not respond to discovery window.

Cl **103** *SC* **103.3.5** *P* **243** *L* **3** # 2526

Hajduczenia, Marek Bright House Network

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

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.

Response *Response Status* **C**

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* **A**

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

Response *Response Status* **C**

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* **A**

"E" ?

SuggestedRemedy

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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Remove.

Cl **103** *SC* **103.2.2.7** *P* **221** *L* **1** # 2529

Hajduczenia, Marek Bright House Network

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

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 CLause 101 has not been discussed, and the model adopted from Clause 77 will present a number of challenges, as discussed at the last meeting.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add editors notes to Figure 103–12 and Figure 103–13 and beginning of 103.2.2 that these figures and associated variables and functions need updating.

Cl **103** *SC* **103.3.2.4** *P* **224** *L* **36** # 2530

Hajduczenia, Marek Bright House Network

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

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

Response *Response Status* **C**

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

Cl **103** *SC* **103.3.3** *P* **224** *L* **49** # 2531

Hajduczenia, Marek Bright House Network

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

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 upstrea 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 acomplish 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.

Response *Response Status* **C**

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.

Cl **103** *SC* **103.4** *P* **261** *L* **38** # 2532

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **A** *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.

Response *Response Status* **C**

ACCEPT.
See comment 2635

Cl **100A** *SC* **CV.2** *P* **273** *L* **46** # 2533

Hajduczenia, Marek Bright House Network

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

Is there any need to show OLT in this drawing? It is not clear where CCDN is, where CLT and CNU are located. The purpose of this figure is very questionable at this time.

SuggestedRemedy

Either demonstrate target CCDN architectures, with CNU and CLT in target locations and all passive devices in target places, or remove altogether. It is not clear what this figure is for right now. Note that this figure does not demonstrate any performance, does not set reference points, and does not really define any topology which would be normative for Clause 100.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editors will proposes and additional figure with test points for US/DS Tx/Rx.

Cl **100** *SC* **100A** *P* **273** *L* **1** # 2534

Hajduczenia, Marek Bright House Network

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

The purpose of this Annex is unclear - 802.3 does not typically specify channel in such a detail, but rather we point to external documents that already provide normative description of the channel.
In this case, I would suggest we point to definition of the said channel (I do nto think downstream and upstream tables were developed for EpoC specifically) and avoid documenting stuff that does not really have a place in 802.3 standards.

SuggestedRemedy

Remove Annex 100A.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add an editors note in the new test section to include a reference to Annex 100A or move contents of 100A to the test section.

Cl **102** *SC* **102.1.7** *P* **175** *L* **16** # 2535

Leo, Montreuil Broadcom

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

We need a figure to illustrate the symbol duplication process

SuggestedRemedy

Attachment has the figure.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Attachment is titled Symbol duplication figure1 (docx) or OFDMA_Initial_ranging (visio)

Cl **00** *SC* **0** *P* **72** *L* **37** # 2596
Remein, Duane Huawei Technologies

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

It would be good to be explicitly about OFDM channels in all cases.

SuggestedRemedy

Replace "channel" with "OFDM channel" wherever appropriate (i.e., where it refers to an EPoC OFDM channel and is not preceded with OFDM or OFDM already.

Response *Response Status* **C**

ACCEPT.

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

Comment Type **T** *Comment Status* **A** *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."

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.1.4** *P* **68** *L* **12** # 2598
Remein, Duane Huawei Technologies

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

Figure 100-2 NCP Generation should be FCP Generation not NCP

SuggestedRemedy

per comment

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.6** *P* **72** *L* **34** # 2599
Remein, Duane Huawei Technologies

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

Modulation formats also include BPSK and other optional formats.

SuggestedRemedy

List all potential modulation formats for US & DS indicating required / optional/ not supported for both MAC data path and PHY Link data path. Place new table in 100.2.6 (pg 72 ln 37) and replace text in 100.2.6 with "The EPoC PHY transmitter shall suport the mandatory modulation formats listed in Table (REF) and may support the optional formates." Remove listing in Table 100-1 (pg 75 ln 21) and ref. new table.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
As per remein_3bn_11_1114.pdf and replace all "NS" with "NA" and in last collumn replace "O" with "NA". For QPSK row change all entries to "NA"
Add footnote "This modulation format is require only for for low density pilots." apply to QPSK - 32-QAM under column CLT Tx/CNU Rx

For US make 2K-QAM to 8K-QAM O

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

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

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)

Response *Response Status* **C**

ACCEPT.

Cl **101** *SC* **101.4.2.1.2** *P* **124** *L* **24** # 2601
Remein, Duane Huawei Technologies

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

Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **101.3.3.1.4** *P* **117** *L* **36** # 2602

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **A** *Fec Counters*

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

SuggestedRemedy

Add to MDIO Mapping table (see remein_3bn_14_1114.pdf)

Response *Response Status* **C**

ACCEPT.

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

Remein, Duane Huawei Technologies

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

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.5** *P* **87** *L* **14** # 2604

Remein, Duane Huawei Technologies

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

100.5 Channel characteristics
100.5.1 Coaxial cabling model
100.5.2 Coaxial cable
100.5.3 Coaxial connectors
100.5.4 Medium dependent interface (MDI)
Only need MDI as the rest s/b covered in the Channel Model

SuggestedRemedy

Remove sections 100.5.x except 100.5.4. Promote 100.5.4 to 100.5

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.116.1** *P* **41** *L* **38** # 2605

Remein, Duane Huawei Technologies

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

Not needed: EDITORS NOTE (to be removed prior to publication): we should be clear how PHY Disc start is interpreted at both the CLT (origination pt) and CNU (transmission starts at timestamp + offset)

SuggestedRemedy

remove note, with next draft this should be well covered.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.11.3** *P* **85** *L* **5** # 2606

Remein, Duane Huawei Technologies

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

100.2.11.3 FEC codeword error rate not needed here s/b CL 101. Same for 100.2.12.2 Codeword error rate.

SuggestedRemedy

Remove sections, already in 101.3.3.2 (currently blank, see related comment on 101.3.3.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.2.6** *P* **114** *L* **25** # 2607

Remein, Duane Huawei Technologies

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

EDITORS NOTE (to be removed prior to publication): the phrase “first codeword of the DS frame is ambiguous. is this coincident with the Timestamp or the first subcarrier of the OFDM column containing the PHY Link Preamble or sometime else?

SuggestedRemedy

Remove note, the description is correct. Change "initialized" to "initializes" on line 21

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.3.2** *P* **120** *L* **26** # 2608
Remein, Duane Huawei Technologies

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

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.

Response *Response Status* **C**

ACCEPT.

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

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

Where is DS Timestamp generation described? Need text.

SuggestedRemedy

See 102.2.5.2 in remein_3bn_10_1114.

Response *Response Status* **C**

ACCEPT.

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

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

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.

Response *Response Status* **C**

ACCEPT.
Figure added per cmt 2535.

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

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

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.

Response *Response Status* **C**

ACCEPT.
use "TBD" for now.

Cl **101** *SC* **101.4.3.1** *P* **125** *L* **50** # 2612
Remein, Duane Huawei Technologies

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

Editors note on number of channels is not longer needed.

SuggestedRemedy

Remove Editors note.

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* **A**

1Change (4.8828125 ns) to

SuggestedRemedy

(1/204.8MHz)

Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **101.4.3.11** *P* **149** *L* **3** # 2614
Remein, Duane Huawei Technologies

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

Reference should be table 101-14

SuggestedRemedy

per comment

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* **A**

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

Response *Response Status* **C**

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

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

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)

Response *Response Status* **C**

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

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

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.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See Figure 102-1 and related text in remein_3bn_10b_1114.

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

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

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.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See Figure 102-2 and related text in remein_3bn_10b_1114.

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

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

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.

Response *Response Status* **C**

ACCEPT.

Cl **102** *SC* **102.4.1.4** *P* **189** *L* **50** # 2620

Remein, Duane Huawei Technologies

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

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.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Create ad text ref to the new figure also.

Cl **101** *SC* **101.4.5** *P* **159** *L* **33** # 2621

Remein, Duane Huawei Technologies

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

Figure 101–29 needs to be converted to native framemaker format.

SuggestedRemedy

per comment see remein_3bn_19_1114.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.4.2.7.3** *P* **139** *L* **14** # 2622

Remein, Duane Huawei Technologies

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

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.

Response *Response Status* **C**

ACCEPT.

Cl **102** *SC* **102.1.1** *P* **168** *L* **10** # 2623

Remein, Duane Huawei Technologies

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

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.

Response *Response Status* **C**

ACCEPT.

Cl **102** *SC* **102.1.2** *P* **169** *L* **6** # 2624

Remein, Duane Huawei Technologies

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

Response *Response Status* **C**

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

Cl **102** *SC* **102.4.1.3** *P* **189** *L* **11** # 2625

Remein, Duane Huawei Technologies

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

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."

Response *Response Status* **C**

ACCEPT.

Cl **102** *SC* **102.4.1.5** *P* **191** *L* **33** # 2626

Remein, Duane Huawei Technologies

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

Figure 102-16 title is incorrect

SuggestedRemedy

Change to "PHY Discovery Preamble generator."

Response *Response Status* **C**

ACCEPT.

Cl **102** *SC* **102.4.1.1** *P* **188** *L* **9** # 2627

Remein, Duane Huawei Technologies

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

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

Response *Response Status* **C**

ACCEPT.

Cl **102** *SC* **102.4.1.4** *P* **190** *L* **1** # 2628

Remein, Duane Huawei Technologies

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

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."

Response *Response Status* **C**

ACCEPT.

Cl **102** *SC* **102.2.1.2** *P* **177** *L* **43** # 2629

Remein, Duane Huawei Technologies

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

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
Cl 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 Cl 101. See remein_3bn_12_1114.pdf.

Response *Response Status* **C**

ACCEPT.

Cl **103** *SC* **103.2.2.7** *P* **219** *L* **36** # 2630
Remein, Duane Huawei Technologies

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

Missing text in Figures 103-10 & 103-11.

SuggestedRemedy

Revel text below note:"Refer to Annex 31A for list of supported opcodes and timestamp opcodes."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.2.3.1.2** *P* **183** *L* **32** # 2631
Remein, Duane Huawei Technologies

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

Figure 102-13 needs to be converted to FrameMaker native format

SuggestedRemedy

Per comment, see remein_3bn_19_1114.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

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

In this statement about Response Frame we still need to specify RF for Fine Ranging as CNUs 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.

Response *Response Status* **C**

ACCEPT.

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

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

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."

Response *Response Status* **C**

ACCEPT.

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

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

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.

Response *Response Status* **C**

ACCEPT.

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

Comment Type **T** *Comment Status* **A** *103.4*

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

SuggestedRemedy

Remove section 103.4 and editors note.

Response *Response Status* **C**

ACCEPT.
See cmt 2532

Cl **45** *SC* **45.2.1.116** *P* **41** *L* **29** # 2636

Remein, Duane Huawei Technologies

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

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.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.122** *P* **44** *L* **5** # 2637

Remein, Duane Huawei Technologies

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

Table 45–78o—power offset bit definitions missing "PHY"

SuggestedRemedy

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

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.122.1** *P* **44** *L* **21** # 2638

Remein, Duane Huawei Technologies

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

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.

Response *Response Status* **C**

ACCEPT.
Note this is included in remein_3bn_15_1114.pdf

Cl **45** *SC* **45.2.1.122** *P* **44** *L* **22** # 2639

Remein, Duane Huawei Technologies

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

Response *Response Status* **C**

ACCEPT.

Cl **101** *SC* **101.1** *P* **89** *L* **5** # 2640

Remein, Duane Huawei Technologies

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

Need to expand mapping table for variable to Cl 45 registers

SuggestedRemedy

See remein_3bn_14_1114.pdf

Response *Response Status* **C**

ACCEPT.

Cl **101** *SC* **101.3.1** *P* **96** *L* **11** # 2641

Remein, Duane Huawei Technologies

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

Link to Cl 76 can be live

SuggestedRemedy

per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **101** *SC* **101.3.3.1.2** *P* **115** *L* **25** # 2642

Remein, Duane Huawei Technologies

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

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.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add text in draft that this is for testing purposes.
Update Fig 101-12 to account for this variable (ML & MH)

Cl **45** *SC* **45.2.1.122** *P* **44** *L* **46** # 2643

Remein, Duane Huawei Technologies

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

Response *Response Status* **C**

ACCEPT.

Cl **101** *SC* **101.3.3.1.7** *P* **119** *L* **9** # 2644

Remein, Duane Huawei Technologies

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

Response *Response Status* **C**

ACCEPT.
See cmt 2668

Cl **101** *SC* **101.4.2.2.1** *P* **125** *L* **8** # 2645

Remein, Duane Huawei Technologies

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

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."

Response *Response Status* **C**

ACCEPT.

Cl **101** *SC* **101.4.3.1** *P* **125** *L* **43** # 2646

Remein, Duane Huawei Technologies

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

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

SuggestedRemedy

Remove the parenthetical.

Response *Response Status* **C**

ACCEPT.

Cl **101** *SC* **101.4.3.9** *P* **144** *L* **31** # 2647

Remein, Duane Huawei Technologies

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

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)."

Response *Response Status* **C**

ACCEPT.

Cl **101** *SC* **101.4.3.10** *P* **144** *L* **40** # 2648

Remein, Duane Huawei Technologies

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

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)

Response *Response Status* **C**

ACCEPT.

Cl **101** *SC* **101.4.3.10** *P* **144** *L* **46** # 2649

Remein, Duane Huawei Technologies

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

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)

Response *Response Status* **C**

ACCEPT.

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

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

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.

Response *Response Status* **C**

ACCEPT.
Att Mark

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

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

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

SuggestedRemedy

See remein_3bn_13_1114.pdf

Response *Response Status* **C**

ACCEPT.

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

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

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.

Response *Response Status* **C**

ACCEPT.

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

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

Response *Response Status* **C**

ACCEPT.

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

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

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."

Response *Response Status* **C**

ACCEPT.

Cl **102** *SC* **102.3.3** *P* **186** *L* **50** # 2655

Remein, Duane Huawei Technologies

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

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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Per comment, verify each described FEC in Cl 101 & 102 is used. Add Editors note to remove FEC description for any codes not used.

Cl **100** *SC* **100.2.8.1.1** *P* **74** *L* **46** # 2656

Laubach, Mark Broadcom Corporation

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

editors note no longer needed

SuggestedRemedy

remove editors note

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add a section on Test modeled after Cl 75

Cl **100** *SC* **100.2.8.1.1** *P* **78** *L* **32** # 2657

Laubach, Mark Broadcom Corporation

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

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

SuggestedRemedy

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

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.8.1.1** *P* **80** *L* **37** # 2658

Laubach, Mark Broadcom Corporation

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

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.

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.11.2.1** *P* **84** *L* **36** # 2659

Laubach, Mark Broadcom Corporation

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

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.

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.8.2** *P* **77** *L* **28** # 2660

Laubach, Mark Broadcom Corporation

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

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: ')

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.1** *P* **66** *L* **1** # 2661

Laubach, Mark Broadcom Corporation

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

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.

Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **101.3.2.5.3** *P* **108** *L* **40** # 2662

Laubach, Mark Broadcom Corporation

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

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

Response *Response Status* **C**

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 **100** *SC* **100.1.4** *P* **68** *L* **2** # 2663

Laubach, Mark Broadcom Corporation

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

Update figure for the following:
1) "+" was mistakenly put at bottom of PMA when it should be in PMD and part of PMD Functions (implementation dependent)
2) Scrambler and FCP (old NCP) require use of PMA start of frame for alignment, should be in PMA

SuggestedRemedy

1) Remove multiple channel summation lines and "+". Replace with individual paths from each channel to PMD Functions. Combining is implementation dependent.
2) Move Scrambler and FCP (old NCP) into Symbol Mapper of PMA. Scrambler can become a subfunction of the downstream symbol mapper, FCP provides and to the PHY Link for the FCP field. The Scrambler and FCP changes are linke to the approval of the text changes in comment XXXX, also by Mark Laubach. Figure in laubach_3bn_10_1114.pdf (fm)

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.6.1** *P* **73** *L* **1** # 2664

Laubach, Mark Broadcom Corporation

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

Need to repurpose and update 100.2.6.1 and 100.2.6.1.1 for downsteam and upstream data rate calculations based on decisions at last meeting.

SuggestedRemedy

Retitle 100.2.6.1 as new 100.2.7 "Data Rates". Create sections 100.2.7.1 Downstream, and 100.2.7.2 Upstream. Use text from laubach_3bn_11_1114.pdf

Note: the draft text is based on laubach_3bn_08_0914.pdf pages 7 and 9.

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.7.1** *P* **73** *L* **16** # 2665

Laubach, Mark Broadcom Corporation

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

frequencies ranges should point to preferred table for both downstream and upstream.

SuggestedRemedy

Section 100.2.7.1 first paragraph, change "The CLT transmitter and CNU receiver shall support a range that includes from 54 MHz to 1212 MHz." to "The CLT transmitter and CNU receiver shall support a range included in the frequency band of 54 MHz to 1212 MHz as defined in Table 100-2."

Section 100.2.7.2 first paragraph, change "The CNU transmitter and CLT receiver shall support a range that includes from 5 MHz to 234 MHz." to "The CNU transmitter and CLT receiver shall support a range that included in the frequency band of 5 MHz to 234 MHz as defined in Table 100-xx.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
"The CLT transmitter and CNU receiver shall support a range that includes from 54 MHz to 1218 MHz." to "The CLT transmitter and CNU receiver shall support a range included in the frequency band of 54 MHz to 1218 MHz as defined in Table 100-2."

Cl **100** *SC* **100.2.7.2.1** *P* **73** *L* **28** # 2666

Laubach, Mark Broadcom Corporation

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

Subsection no longer needed, subcarrier nulling is defined elsewhere.

SuggestedRemedy

Remove subsection "100.2.7.2.1 Carrier Nulling"

Response *Response Status* **C**

ACCEPT.

Cl **101** *SC* **101.3.2.6** *P* **113** *L* **39** # 2667

Laubach, Mark Broadcom Corporation

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

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

Response *Response Status* **C**

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* **A** *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.

Response *Response Status* **C**

ACCEPT.
The editor believes this fix is shown in laubach_3bn_18_1114.pdf. Author to confirm.
See cmt 2644

Cl **101** *SC* **101.4.3.5.4** *P* **133** *L* **54** # 2669

Laubach, Mark Broadcom Corporation

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

Step 7 is normative.

SuggestedRemedy

Remove the word "Informational"

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.8.1** *P* **73** *L* **44** # 2670

Laubach, Mark Broadcom Corporation

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

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.

Response *Response Status* **C**

ACCEPT.

Cl **101** *SC* **101.4.4.3.2** *P* **150** *L* **45** # 2671

Laubach, Mark Broadcom Corporation

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

"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."

Response *Response Status* **C**

ACCEPT.

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

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

Text and figure for DS framing

SuggestedRemedy

see remein_3bn_16_1114.pdf

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.100** *P* **36** *L* **26** # 2673
Leo, Montreuil Broadcom

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

0 0 0 = 0windowing disabled

SuggestedRemedy

Replace by: "0 0 0 = 0 samples (windowing disabled)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Editor change from E to T

Cl **100** *SC* **100.2.8.1** *P* **73** *L* **44** # 2674
Leo, Montreuil Broadcom

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

Why there is a dot in front ". Occupiedbandwidth"?

SuggestedRemedy

If it is an error, remove dot.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This is also suggested in another comment.

Cl **100** *SC* **100.2.8.1** *P* **73** *L* **51** # 2675
Leo, Montreuil Broadcom

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

There is up to 3800 active subcarriers out 4096 subcarriers. At least 296 subcarriers have zero bit loading. That is 148 on each side.

SuggestedRemedy

The example should use the max number of subcarriers. That is 3800 subcarriers for an encompassed spectrum of 190 MHz.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor changed from E to T

Note that this is similar to the change to Page 73, lines 7-12 made in previous comment round.

"For example, provided the OFDM channel of 204.8 MHz, subcarrier spacing of 50 kHz and 148 lower band edge subcarriers and 148 upper band edge subcarriers (a total of 302 subcarriers in two band edge exclusion sub-bands), the encompassed spectrum is equal to 789.05 - 600.00 + 0.050 = 190.00 MHz"

See also cmt 2435

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

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

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.

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.8.1.1** *P* **75** *L* **11** # 2677
Leo, Montreuil Broadcom

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

In Table 100-1, Channel bandwidth cover a range of 24 to 192 MHz. However, min encompassed spectrum is specified.

SuggestedRemedy

Change "Minimum encompassed spectrum = 22 MHz" to "Encompassed spectrum = 22 to 190 MHz".

Response *Response Status* **C**

ACCEPT.
Editor changed from E to T

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

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

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

SuggestedRemedy

A15 to A8 should be lower case a15 to a8.

Response *Response Status* **C**

ACCEPT.

Cl **100** *SC* **100.2.8.1.1** *P* **76** *L* **24** # 2679
Leo, Montreuil Broadcom

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

0 KHz to 100 KHz is wrong

SuggestedRemedy

Should it be 10 KHz to 100 KHz?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "0 kHz" to "10 kHz".
Editor changed from ER to TR.

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

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

Step 3 and 4 are infomational

SuggestedRemedy

Remove step 3 and 4

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Keep 3 worded as "Known region of interference"

Cl **100** *SC* **100.2.8.1** *P* **74** *L* **7** # 2681
Leo, Montreuil Broadcom

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

"The occupied bandwidth is a multiple of 6 MHz, with a minimum of 24 MHz, and consists of all 6 MHz channels ..."
The min occupied bandwidth is 24 MHz and the max is 192 MHz. Do we need to specify that bandwidth is in multiple of 6 MHz?

SuggestedRemedy

Remove the multiple of 6 MHz requirement.
Note: This change may impact how power is calculated in section 100.2.8.1.1

Response *Response Status* **C**

REJECT.
The occupied bandwidth is calculated per equation 100-1 which produces results in increments of 6 MHz. Removing the "multiple of 6 MHz" here, does not change this behaviour.

Cl **100** *SC* **100.2.8.1.1** *P* **75** *L* **32** # 2682
Leo, Montreuil Broadcom

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

In Table 100-1, what is the allowable degradation of 1.5 dB

SuggestedRemedy

Need clarification

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete phrase

Cl **102** *SC* **102.1.7** *P* **175** *L* **10** # 2683
Kliger, Avi Broadcom

Comment Type **E** *Comment Status* **D** *Sym Dup*

same as comment #4.

SuggestedRemedy

Remove the 102.1.7 from here and add it to the PHY Discovery channel section

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Assuming comment #4 refers to cmt 2696, 2698 or 2694
Add to 102.4.1.4 PHY Link Discovery Response
at pg 190 line 18
"The PHY duplicates symbols of the upstream PHY Discovery response transmission. This duplication is accomplished by duplicating the time domain samples at the output of the iFFT in the upstream data path for these signals, and adding cyclic prefix and windowing. Control for the duplication process is conveyed using the TxType in the CNU (see Figure 102–4)."

Cl **102** *SC* **102.2.3.1** *P* **181** *L* **26** # 2684
Kliger, Avi Broadcom

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

subclause title is DS fixed header - however header is not fixed.

SuggestedRemedy

change title to "DS header"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See Cmt 2616 and remein_3bn_02b_1014.pdf (pg 2).

Cl **102** *SC* **102.3.2.1** *P* **185** *L* **44** # 2685
Kliger, Avi Broadcom

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

US header is not fixed

SuggestedRemedy

Change title to US header

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See Cmt 2616 and remein_3bn_02b_1014.pdf

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

Comment Type **ER** *Comment Status* **R**

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.

Response *Response Status* **C**

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

Comment Type **ER** *Comment Status* **A** *Fig 102-5*

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

SuggestedRemedy

change "A" to "a' where required

Response *Response Status* **C**

ACCEPT.

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

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

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

Response *Response Status* **C**

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

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

Response *Response Status* **C**

ACCEPT.

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

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

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

Response *Response Status* **C**

ACCEPT.

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

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

"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"

Response *Response Status* **C**

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

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

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

SuggestedRemedy

change being to begin

Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **102.4.3.1** *P* **192** *L* **29** # 2693
Kliger, Avi Broadcom

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

Do we really need the two options?

SuggestedRemedy

change numbet of probe symbols to be always 6

Response *Response Status* **C**

ACCEPT.
Changed to Cl 00 as this also impacts Cl 45

Cl **00** *SC* **102.1.2** *P* **169** *L* **16** # 2694
Kliger, Avi Broadcom

Comment Type **TR** *Comment Status* **A** *Fig 102-3/4*

Symbol duplication block shown in Figure 102-3 is not performed in the downstream direction only in the upstream direction. Block diagram doesn't show the symbol mapper (transition from bit domain to frequency domain)

SuggestedRemedy

Change block title to "symbol mapping"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Changed fm Cl 102 pg 168 to Cl 00 and page to 169

Also see proposed changes in Cmt 2624 and updated figures in remein_3bn_19b_1114.pdf

Change block title to "Symbol Mapper"
Will also change title for section "102.1.7 Symbol Mapper" and add text in this section that reads "EDITORS NOTE (to be removed prior to publication); text for this section needed."

Note that this will also require a change to Cl 100 block diagrams and/or text of Clause 101 to include this function in Cl 101.
Add Cl 100 Pg 69 ln 53 "EDITORS NOTE (to be removed prior to publication): US Block diagram needs to reflect symbol duplication for PHY Link Discovery Response message."
Add Cl 101 pg 158 ln 26 "EDITORS NOTE (to be removed prior to publication): Cyclic prefis and windowing function needs to reflect symbol duplication for PHY Link Discovery Response message."

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

Comment Type **TR** *Comment Status* **A** *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".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use Symbol Mapper
See cmt 2624

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

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

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

Response *Response Status* **C**

ACCEPT.

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

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

The factor 1/sqrt(10) is nly correct for QAM-16.

SuggestedRemedy

reference the table of factors instead of 1/sqrt(10)

Response *Response Status* **C**

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* **A** *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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See cmt 2683

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

Comment Type **TR** *Comment Status* **R**

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

SuggestedRemedy

A place holder at this time

Response *Response Status* **C**

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* **A**

"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"

Response *Response Status* **C**

ACCEPT.

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

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

"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

Response *Response Status* **C**

ACCEPT.

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

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

Fine Ranging doesnt carry data, this FEC is not necessary

SuggestedRemedy

Remove this subclause

Response *Response Status* **C**

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

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

"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

Response *Response Status* **C**

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"

Cl **102** *SC* **102.4.1.4** *P* **190** *L* **3** # 2704

Kliger, Avi Broadcom

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

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"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See cmt 2628

Cl **102** *SC* **102.4.3** *P* **192** *L* **32** # 2705

Kliger, Avi Broadcom

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

probe usage is implementation specific

SuggestedRemedy

change sentence to: "The CLT may use the received probing symbol to ... "

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **102** *SC* **102.4.2** *P* **191** *L* **48** # 2706

Kliger, Avi Broadcom

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

FR purpose was to provide better accuracy to measurments of power and timing offset than PDR before probe could be transmitted, under the assumptions that PDR are send in frames that also contain data, usiing a relatively small number of subcarriers and with a low transmission power to not interfere with the data, hence recievedd 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 OFMD 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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

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

Cl **100** *SC* **100.1.4** *P* **69** *L* **30** # 2707

Kliger, Avi Broadcom

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

No pilots or marker are used with probes

SuggestedRemedy

move probe generator to after the pilot and marker inerstion box

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.8.2** *P* **77** *L* **32** # 2708

Kliger, Avi Broadcom

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

Neq"

SuggestedRemedy

Change to Neq'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: this subclause and definitions for Neq, Neq', Neq" need to be cleaned up. Previous comment added editor's note for this subclause.

Cl **100** *SC* **100.2.11.1** *P* **83** *L* **43** # 2709

Kliger, Avi Broadcom

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

Level Range (24 MHz min occupied BW) shis the Input level range of a single OFDM received signal. This is as opposed to previous field "Total Input Power" that includes all type of signals.

SuggestedRemedy

Change to: OFDM Channel Input Level Range

Response *Response Status* **C**

ACCEPT.
Changed type fm "E" to "T"

Cl **101** *SC* **101.4.4.8.4** *P* **156** *L* **47** # 2710

Kliger, Avi Broadcom

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

Subclause includes a text on rotation of the marker sequence that is not use in the text

SuggestedRemedy

Withdraw or make this text for information only

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The text is require to enaure interoperability. If one vendor rotate without zeros (as described) and another rotates with then they will not be compatable.

Cl **101** *SC* **101.4.5** *P* **159** *L* **20** # 2711

Kliger, Avi Broadcom

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

Mapping is done after scrambing the output of the LDPC encoder
Use "QAM symbols" instead of "QAM subcarriers"

SuggestedRemedy

Change sentence to:
"After LDPC encoding and scrambling for downstream and upstream transmissions, the output bit stream of the scrambler must be mapped to QAM symbols ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **100** *SC* **100.2.6** *P* **72** *L* **37** # 2712

Kliger, Avi Broadcom

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

List of constellatio0ns include only constellations above 256-QAM and 16-QAM

SuggestedRemedy

Add 64-QAm and 128-QAM to the list of constellations

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
This subclause is being converted to a table as per a comment based on remein_3bn_11_1114.pdf. These constellation are included in that table.
See comment 2599

Cl **100** *SC* **100.2.6** *P* **72** *L* **46** # 2713
Kliger, Avi Broadcom

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

List of constellatio0ns include only constellations above 256-QAM and 16-QAM

SuggestedRemedy

Add QPSK, 8-QAM, 32-QAM, 64-QAm and 128-QAM to the list of constellations

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
This subclause is being converted to a table as per a comment based on remein_3bn_11_1114.pdf. These constellation are included in that table.
See comment 2599

Cl **100** *SC* **100.2.8.1.1** *P* **75** *L* **32** # 2714
Kliger, Avi Broadcom

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

"Allowable degradation: 1,5 dB" - is not clear, degradation in what and on what conditions it is allowed?

SuggestedRemedy

Add more details

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See 2682

Cl **100** *SC* **100.2.8.1.1** *P* **76** *L* **23** # 2715
Kliger, Avi Broadcom

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

Lines 23 to 36 - It is not stated what is this requirement. Is it CW leakage to the inband OFDM signal?

SuggestedRemedy

Add explanation on what is required

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See 2440

Cl **101** *SC* **101.3.2.4** *P* **103** *L* **18** # 2716
Kliger, Avi Broadcom

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

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

Response *Response Status* **C**

ACCEPT.

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

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

Table allows any repeat value between 0 to 31 and ny start value between 0 to 63. This amount of flexibility is unneccessary 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

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use 3 bits for Repeat and add a code for 1,2,4,8, 16.
Use 4 bits (0-15) for Start

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

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

PDR should be transmitted un-equalized

SuggestedRemedy

change sentence to:

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

Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **100.2.11.1** *P* **84** *L* **5** # 2719

Leo, Montreuil
Broadcom

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

The upstream frequencies are up to 234 MHz. The diplexer needs about 25% transition bandwidth. The available frequency for the downstream on a 6 MHz grid is 294 MHz.

SuggestedRemedy

Change "> 6 dB (258 MHz – 1218 MHz)" to "> 6 dB (294 MHz – 1218 MHz)"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
In addition to suggested remedy search the draft for upper freq. range of 1212 and change to 1218 (check cl 45).