

CI 00 SC 0 P 175 L 27 # 3212
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

EDITORS NOTE (to be removed prior to publication): the above variable definition of DS_FreqCh(n), taken from 45.2.1.109 should be moved to CI 100 and referenced in the above para. The details in CI 45 should be removed to avoid duplicate definitions and a cross reference to the location in CI 100 provided. A complementary definition for the US OFDMA channel center frequency is also needed in CI 100.

SuggestedRemedy

Move DS_FreqCh(n) definition to 100.2.7.1
 Change definition in 101.4.2.10.1 to read: "See 100.2.7.1"

Change text of 45.2.1.109.1 from
 "Register bits 1.1902.15:0 specify the center frequency, in steps of 50 kHz, of subcarrier 0 for the first OFDM channel. Subcarriers are numbered from 0 to 4095 with subcarrier 0 at the lowest frequency. This definition equates to a subcarrier 0 center frequency of from 54.0 to 3,276.75 MHz in 50 kHz steps. The minimum value for this register is 1080. See 101.4.2.12 for additional details."

To:
 "Register 1.1902 specifies the center frequency for the first OFDM channel. This register is a reflection of the DS_FreqCh(1) defined in 100.2.7.1."

Similarly change 45.2.1.109.2 thru 45.2.1.109.5 to read:
 "Register 1.190x specifies the center frequency for the second OFDM channel. This register is a reflection of the DS_FreqCh(x) defined in 100.2.7.1." Replacing x and second with the appropriate numbering.

Proposed Response Response Status O

CI 00 SC 0 P 209 L 10 # 3222
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

EDITORS NOTE (to be removed prior to publication): not all variables need to be included in CI 45. We need to determine how to index variables that need to be communicated over the PHY Link that are not included in CI 45. Current "rule" is:
 If $1.1900 \leq \text{RegAdd} \leq 1.1999$ Then $\text{Index} = \text{RegAdd} - 1.1900 * 1000$ (i.e., 0-99)
 as of Draft 1.3 38 indexes in this range were in use.
 If $12.0000 \leq \text{RegAdd}$ Then $\text{Index} = (\text{RegAdd} - 12.0000) * 1000 + 100$ (i.e., 100 +)

SuggestedRemedy

For variables defined in CL 45 MMD 1 use register address minus 1900 per current rule. This will result in indices of 0 - 38 for currently defined registers.
 For variables not defined in CI 45 use index of 500-999
 For variables defined in CI 45 MMD 12 use register address + 1000. Thus registers 12.0000 to 12.10241 will use indices 1000 to 11241.
 Update Tables 100-1, 101-1, 102-3 and 102-13.
 Remove editors note.

Proposed Response Response Status O

Cl 00 SC 0 P 235 L 19 # 3235
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

No such variable as NxtCNU_ID, Shouldn't ref Cl 45 as normative.

SuggestedRemedy

Change 3 instances of NxtCNU_ID to AllwdCNU_ID,
Strike references to Cl 45 in this para: "(see 45.2.1.117)", "(see 45.2.1.120)" and "(see 45.2.1.121)"

Add "variables" to very end of para so it reads: "... write the CNU PHYTimingOffset and PHYPowerOffset variables."

Add the following definitions to 102.4.1.7.2

AllwdCNU_I

TYPE: 15-bit integer

This variable is used to indicate to the 10GPASS-XR PHY a valid CNU_ID value. The value may be assigned to a new CNU when the associated CNU_ID assigned flag is set to zero, when the flag is set to one it is an indication that this value has already been assigned to a CNU and it should not be use for another CNU.

DS_OFDM_ID

TYPE: 3-bit integer

This variable is a pointer to one of the five possible OFDM channels in the downstream EPoC network. Thus when DS_OFDM_ID is set to a value of one variables DS_ModTypeSC(n) reflect the OFDM descriptor for OFDM channel one. When DS_OFDM_ID is set to a value of two variables DS_ModTypeSC(n) reflect the OFDM descriptor for OFDM channel two, etc.

In 45.2.1.117.2 pg 45 In 13 change:

"See 102.4.1.6 for additional details on the use of these bits."

to:

"These bits are a reflection of the AllwdCNU_I variable defined in 102.4.1.7.2."

In 45.2.7a.1 pg 49 In 51 add the following:

"These bits are a reflection of the DS_OFDM_ID variable defined in 101.4.2.3.5."

Proposed Response Response Status O

Cl 00 SC 0 P 24 L 20 # 3238
Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Align capitalization:

Coax Cable Distribution Network

coax cable distribution network

Proper noun or not? I think not

SuggestedRemedy

Use coax cable distribution network in all cases Excepting Fig 100-2, 100-3, 100-4 & 100-5 where upper case is used exclusively.

Proposed Response Response Status O

Cl 00 SC 0 P 24 L 31 # 3241
Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Align capitalization

Cyclic Prefix

cyclic prefix

Proper noun or not? I think not (not eh term is used in 802.3bx as cyclic prefix)

SuggestedRemedy

Convert all instances to cyclic prefix excepting cases where it is all caps in figures (in Fig 100-2 use all caps)

Proposed Response Response Status O

CI 00 SC 0 P 24 L 37 # 3242
Remein, Duane Huawei Technologies

Comment Type E Comment Status X
Align capitalization
Modulation Error Ratio or modulation error ratio?
Also we should not define the abbreviation in the Definitions clause

SuggestedRemedy
Use modulation error ratio exclusively.
Change
1.4.258a Modulation Error Ratio (MER): to
1.4.258a modulation error ratio:

Add to 1.5 Abbreviations
MER modulation error ratio

Proposed Response Response Status O

CI 00 SC 0 P 244 L 7 # 3254
Remein, Duane Huawei Technologies

Comment Type E Comment Status X
Variables listed in Table 102-13 needs to be aligned with those named in Table 102-1 (and CI 100 & 101).

SuggestedRemedy
See remain_3bn_16_0315.pdf for update to Table 102-13.

Add to Tables 101-1 & 102-1

Proposed Response Response Status O

CI 00 SC 0 P 44 L 16 # 3217
Remein, Duane Huawei Technologies

Comment Type T Comment Status X
PHY Discovery is now included in the EPoC Probe Control Header message. Therefore we don't need the PHY Discovery start variable to CL 45 Register 1913 & 1914

SuggestedRemedy
Remove PHY Discovery control register from CI 45 (mark Register 1913 & 1914 as reserved in Table 45-3 and remove 45.2.1.116)
Remove PHY Discovery start and DiscStrt from
Table 102-3 pg 210 ln 7-11 and
Table 102-13 pg 244 ln 38

Proposed Response Response Status O

CI 00 SC 0 P 49 L 47 # 3232
Remein, Duane Huawei Technologies

Comment Type E Comment Status X
Inconsistent register name
pg 31 ln 14 10GPASS-XR FEC success counter
pg 48 ln 47 10GPASS-XR FEC codeword success counter
pg 48 ln 49 10GPASS-XR FEC codeword counter success
pg 49 ln 5 10GPASS-XR FEC codeword counter
and in table 101-1 (3x)
pg 113 ln 20 10GPASS-XR FEC success count & 10GPASS-XR FEC codeword success counter

Likewise in 45.2.1.127
pg 31 ln 16 10GPASS-XR FEC fail counter
pg 49 ln 16 10GPASS-XR FEC codeword fail counter
pg 49 ln 18 10GPASS-XR FEC codeword counter fail
pg 49 ln 27 10GPASS-XR FEC codeword counter fail
and in table 101-1
pg 113 ln 24 10GPASS-XR FEC fail count, 10GPASS-XR FEC codeword fail counter & Fec codeword fail count

SuggestedRemedy
Consistently use
10GPASS-XR FEC codeword success counter
10GPASS-XR FEC codeword fail counter

Proposed Response Response Status O

CI 00 SC 0 P 68 L 24 # 3261
 Remein, Duane Huawei Technologies
 Comment Type ER Comment Status X
 18 instances of "Editor's Note"
 SuggestedRemedy
 Change to "EDITORS NOTE"
 Proposed Response Response Status O

CI 00 SC 0 P 80 L 53 # 3253
 Remein, Duane Huawei Technologies
 Comment Type T Comment Status X
 Two names for US cp and windowing (US_Nrp => USNrp). Names can be aligned with DS (CI 45, 101, 102 and possibly others)
 SuggestedRemedy
 Change all instance of "US_Nrp" to "USNrp" (4x; CI 100 pg 80 ln 53, CI 101 pg 112 ln 29, CI 102 pg 233 ln 29 & Fig 102-29 pg 234 ln 16) and "US_Ncp" to "USNcp" (8x; CI 100 pg 81 ln 6, Fig 100-6 pg 94 ln 24, CI 101 pg 112 ln 30, CI 102 pg 233 ln 28, Fig 102-21 pg 234 ln 15, 16, 17, 22)
 Proposed Response Response Status O

CI 00 SC 0 P 83 L 33 # 3280
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 Consider changing TxEnable to tx_enable, aligns variable with similar clauses that use an underscore, e.g. Clause 76. There are differences in settings from clause 75 "enable" and "disable" to clause 76 using "on" and "off".
 SuggestedRemedy
 Change "TxEnable" to "Tx_Enable" where applicable in clauses. Change values from "ENABLE" and "DISABLE" to "ON" and "OFF" respectively to match use in Clause 76.
 Proposed Response Response Status O

CI 01 SC 1 P 24 L 5 # 3234
 Remein, Duane Huawei Technologies
 Comment Type ER Comment Status X
 Renumber Clause per 802.3bx D2.1 plus editorial updates see related comments on 1.4.135a through 1.4.258a
 SuggestedRemedy
 See remain_3bn_15_0315 and remain_3bn_15_0315CMP
 Proposed Response Response Status O

CI 100 SC 100 P 74 L 1 # 3297
 Laubach, Mark Broadcom
 Comment Type ER Comment Status X
 All tables, make sure that table footnotes are FM footnotes.
 SuggestedRemedy
 As per comment.
 Proposed Response Response Status O

CI 100 **SC 100.1.1** **P 74** **L 15** # **3290**
 Laubach, Mark Broadcom

Comment Type **T** **Comment Status** **X**

Figure 67-2a does not exist. Remove cross reference until such a time the TF approves a new figure for Clause 67..

SuggestedRemedy
 Delete ", as shown in Figure 67-2a".

Proposed Response **Response Status** **O**

CI 100 **SC 100.1.2** **P 74** **L 15** # **3201**
 Remein, Duane Huawei Technologies

Comment Type **ER** **Comment Status** **X**

Cross references to the amendment, such as "Figure 67-2a" should be live using cross-reference format Clause, section, Figure #, Equation # or Table #. Those to objects in the standard and not included in the amendment should be in character style "External"

SuggestedRemedy
 Correct all cross references styles.

Proposed Response **Response Status** **O**

CI 100 **SC 100.1.3** **P 76** **L 50** # **3202**
 Remein, Duane Huawei Technologies

Comment Type **E** **Comment Status** **X**

This editors note has served it's purpose:
 "EDITORS NOTE (to be removed prior to publication): US Block diagram needs to reflect symbol duplication for PHY Link Discovery Response message."

SuggestedRemedy
 remove

Proposed Response **Response Status** **O**

CI 100 **SC 100.1.3** **P 76** **L 9** # **3255**
 Remein, Duane Huawei Technologies

Comment Type **T** **Comment Status** **X**

In Fig 100-2 & 100-3 we illustrate a "RATE ADAPTATION" functional block. In CI 101.3.2 (pg 120 In 4) this is referred to as "an Idle control character deletion function performing the function of data rate adaptation". In section 5 of the standard (76.3.2 Fig 76-7 & 76-8) this is referred to as "Idle Deletion". We should be consistent with the standard.

See related comment against 101.3.2 pg 120 In 4

SuggestedRemedy
 Change "RATE ADAPTATION" to "IDLE DELETION" in Figure 100-2 & 100-3 and to "IDLE INSTERTION" in Figure 100-4 & 100-5

Proposed Response **Response Status** **O**

CI 100 **SC 100.1.4** **P 80** **L 14** # **3203**
 Remein, Duane Huawei Technologies

Comment Type **T** **Comment Status** **X**

Text to address Editors note:
 EDITORS NOTE (to be removed prior to publication): need to evaluate adding data rate for OFDM/A (reference point MDI) as part of the definition.

SuggestedRemedy
 To the end of 1st para in this section add:
 "The 10GPASS-XR-D and 10GPASS-XR-U PMDs both have a variable rate that is determined when configured. See Equation (100-1) and Equation (100-2) for additional information on the 10GPASS-XR-D and 10GPASS-XR-U data rates respectively."
 Remove editors note In 14.

Proposed Response **Response Status** **O**

CI 100 SC 100.1.5 P 81 L 37 # 3279
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 Problems in Table 100-1.
 Register numbers to index numbers wrong in new table "1024+100" should be 1124, not 2124, etc.
 SuggestedRemedy
 Editor's discretion to verify and update all index numbers in the table.
 Change color all magenta text to black text in Table 100-1.
 Proposed Response Response Status O

CI 100 SC 100.2.1.1 P 82 L 50 # 3317
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 Update to place stake in ground. I've heard from implementers that PMD jitter should be negligible. These values are the same as for 10GEAPON.
 SuggestedRemedy
 1) Change subclause text to: "The PMD shall introduce a transmit delay variation of no more than 0.5 time_quanta, and a receive delay variation of no more than 0.5 time_quanta. A description for the time_quantum can be found in 77.2.2.1."
 2) Remove editor's note.
 Proposed Response Response Status O

CI 100 SC 100.2.1.2 P 83 L 12 # 3204
 Remein, Duane Huawei Technologies
 Comment Type E Comment Status X
 Use of appropriate(ly) is inappropriate.
 "... the appropriately formatted stream of I / Q value pairs ..."
 The appropriate format is clearly stated in the previous para (32-bit signed int).
 The same issue exists in 100.2.1.3, 100.2.2, & 100.2.3.
 Note that this interface is not exposed and therefore is not normative, rather this is properly stated as a behavior.
 SuggestedRemedy
 strike " appropriately formatted" (5x).
 Proposed Response Response Status O

CI 100 SC 100.2.10.2 P 104 L 5 # 3301
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 "Table 7-12" need to be updated to correct table cross reference.
 SuggestedRemedy
 Change both Table refs from "7-12" to "100-12".
 Proposed Response Response Status O

CI 100 SC 100.2.5 P 84 L 42 # 3205
 Remein, Duane Huawei Technologies
 Comment Type E Comment Status X
 This points to 102.2.1.2 & 102.3.1.2 which points here, very circular.
 "Modulation format for PHY Link is specified in 102.2.1.2 and 102.3.1.2."
 SuggestedRemedy
 Change to read:
 "See 102.2.1.2 and 102.3.1.2 for a description of downstream and upstream PHY Link modulation respectively."
 Proposed Response Response Status O

CI 100 SC 100.2.6 P 84 L 44 # 3220
 Remein, Duane Huawei Technologies
 Comment Type T Comment Status X
 Is DS & US data rate calculated at CNU or configured? If configured then add to Table 102-13 and 102-1. If calculated then this should be specified in CI 100.
 SuggestedRemedy
 NOT FINAL
 Question sent to Mark
 Proposed Response Response Status O

CI 100 SC 100.2.6.1 P 84 L 53 # 3227
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Another pesky CI 45 ref.
 "The CLT calculates the downstream PMA data rate after any configuration update that changes the downstream profile descriptor for any channel or the Cyclic Prefix size. See 45.2.7a.1 and Table 45–191c."

SuggestedRemedy

Strike:
 "or the Cyclic Prefix size. See 45.2.7a.1 and Table 45–191c."
 Note that changing the CP (or window size) causes a network restart and this will presumably cause a recalculation of data rate.

Proposed Response Response Status O

CI 100 SC 100.2.6.1 P 84 L 53 # 3208
 Remein, Duane Huawei Technologies

Comment Type ER Comment Status X

Eradicate CI 45 ref.
 "The CLT calculates the downstream PMA data rate after any configuration update that changes the downstream profile descriptor for any channel or the Cyclic Prefix size. See 45.2.7a.1 and Table 45–191c."

SuggestedRemedy

Change to:
 "The CLT calculates the downstream PMA data rate after any configuration update that changes the downstream profile descriptor variables DS_ModTypeSC(n) or for any change to the cyclic prefix size DS_Ncp. See 101.4.2.3.5 and 101.4.2.11.1."

Proposed Response Response Status O

CI 100 SC 100.2.6.1 P 85 L 18 # 3207
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

We shouldn't ref CI 45 but rather the definition of the variable set DS_ModTypeSC(n).
 "Note in Table 45-191b that the DS Modulation Type values binary 0011 (3 decimal) through 1110 (14 decimal) directly represent data bits per active subcarrier"

SuggestedRemedy

Change to read:
 "Note that in the definition of DS_ModTypeSC(n) the values binary 0011 (3 decimal) through 1110 (14 decimal) directly represent the number of data bits per active subcarrier (see 101.4.2.3.5)."
 Ln

Proposed Response Response Status O

CI 100 SC 100.2.6.2 P 85 L 32 # 3209
 Remein, Duane Huawei Technologies

Comment Type ER Comment Status X

Eradicate CI 45 ref.
 "The CLT calculates the upstream PMA data rate after any configuration update that changes the upstream profile descriptor for the channel or the Cyclic Prefix size. See 45.2.7a.2 and Table 45–191c."

SuggestedRemedy

Change to:
 "The CLT calculates the upstream PMA data rate after any configuration update that changes the upstream profile descriptor variables US_ModTypeSC(n) or for any change to the cyclic prefix size US_Ncp. See 101.4.3.4.4 and 101.4.3.14.1."

Proposed Response Response Status O

CI 100 SC 100.2.6.2 P 85 L 50 # 3296
Laubach, Mark Broadcom

Comment Type ER Comment Status X

Fix upstream frame data load equation to move "RE" to italics.
Look at other italics stuff.

SuggestedRemedy

As commented. Editor to review FM equations and text for consistent use of italics.

Proposed Response Response Status O

CI 100 SC 100.2.6.2 P 85 L 9 # 3206
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

There is a variable for "Cycle Prefix Time" used here in the Cycle Prefix Time equation.
Same issues exists for US at line 43

SuggestedRemedy

Change Equations to read:
"DS_Frame_Length = 128 x DS_Extended_OFDM_Symbol (usec)" (ln 7)
"DS_Extended_OFDM_Symbol = 20 + DS_Ncp (usec)" (no subscripts, ln 9)
"US_Frame_Length = (256 + 6) x US_Extended_OFDM_Symbol(usec)" (ln 41)
"US_Extended_OFDM_Symbol = 20 + US_Ncp (usec)" (no subscripts, ln 43)
Ln 5 replace "Extended_OFDM_Symbol" with "DS_Extended_OFDM_Symbol" and "Cycle Prefix size" with "downstream cyclic prefix size DS_Ncp"
Ln 38 replace "Extended_OFDM_Symbol" with "US_Extended_OFDM_Symbol" and "Cycle Prefix size" with "upstream cyclic prefix size US_Ncp"
be sure to use italics for all variable names.

Proposed Response Response Status O

CI 100 SC 100.2.6.2 P 86 L 1 # 3210
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

We shouldn't ref CI 45 but rather the definition of the variable set DS_ModTypeSC(n).
"Note in Table 45–191d that the US Modulation Type values binary 0011 (3 decimal) through 1110 (14 decimal) directly represent data bits per active subcarrier."

SuggestedRemedy

Change to read:
"Note that in the definition of US_ModTypeSC(n) the values binary 0011 (3 decimal) through 1110 (14 decimal) directly represent the number of data bits per active subcarrier (see 101.4.3.4.4)."

At pg 85 line 46 replace
"the value is the US Modulation Type value minus" with
"the value is the US_ModTypeSC(n) value minus"

Proposed Response Response Status O

CI 100 SC 100.2.8 P 86 L 31 # 3236
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Add definition of DS_ChCnt to CI 100 and in tables 100-1
(related comment against 102 on DS_ChCnt)

SuggestedRemedy

Add section
100.2.8.6 Variables
DS_ChCnt
TYPE: 3-bit integer
This variable indicates the number of downstream OFDM channels in use. The value of DS_ChCnt is between 1 and 5.

Proposed Response Response Status O

CI 100 SC 100.2.8.2 P 87 L 43 # 3248
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Check that we specify min/max active subcarriers (was Table 101-12 in D1.2)
Pg 157 In 1 DS Min in Table 101-8 (40 SC)
Pg 87 In 43 DS Max as encompassed spectrum in Table 100-3

pg 182 In 23 US min - Table 101-13 (40 SC)
US Max - as max encompassed in Table 101-13

SuggestedRemedy

Impacts CI 101 & possibly 100
Rationalize Tables 101-8 with Table 100-3 and Table 101-13 with expected new table in 100 addressing CNU RF output requirements

Proposed Response Response Status O

CI 100 SC 100.2.8.2 P 88 L 48 # 3228
Remein, Duane Huawei Technologies

Comment Type ER Comment Status X

Footnotes do not appear to be connected to the Table but appear as separate text.

SuggestedRemedy

For all table sin this clause ensure the table footnotes are part of the table and not separate text of style "footnote". Footnotes not called out in individual table cells can be attached to the table title or column heading as appropriate.

Proposed Response Response Status O

CI 100 SC 100.2.8.4 P 90 L 1 # 3288
Laubach, Mark Broadcom

Comment Type T Comment Status X

Remove the "all" context from the table footnote to avoid confusion with the rest of the use of ceiling in this Clause, except where indicated. Format all table footnotes in Clause 100 to use Framemaker footnotes (to tables).

SuggestedRemedy

Change "All equations are Ceiling(Power, 0.5) dBc. Use " to "This equation produces values in 0.5 dBc steps. To calculate use ". Update all table footnotes in Clause 100 as FM footnotes, where applicable.

Proposed Response Response Status O

CI 100 SC 100.2.8.4 P 90 L 2 # 3309
Laubach, Mark Broadcom

Comment Type T Comment Status X

"OFCM" is incorrect. This will be caught in the Downstream Electrical sanity check, but wanted to make sure it is attended to.

SuggestedRemedy

Change to "OFDM".

Proposed Response Response Status O

CI 100 SC 100.2.8.4 P 90 L 5 # 3273
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Two tables labeled "CLT RF output requirements"; Table 100-3 & 100-5

SuggestedRemedy

Change title for 100-5 to "CLT RF output power requirements"

Proposed Response Response Status O

CI 100 SC 100.2.8.5 P 91 L 26 # 3274
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Unique instances of DS_Ncp and DS_Nrp.

SuggestedRemedy

change to DSNcp and DSNrp respectively.

Proposed Response Response Status O

CI 100 SC 100.2.9.1 P 94 L 11 # 3229
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X
 "Ncp" should be USNcp at CI 100 pg 94 ln 12,

SuggestedRemedy
 per comment

Proposed Response Response Status O

CI 100 SC 100.2.9.4 P 95 L 31 # 3289
 Laubach, Mark Broadcom

Comment Type T Comment Status X
 For 3, the relationship in the equation should be greater than.

SuggestedRemedy
 Change "P1.6r <LT> P1.6Min" to "P1.6r <GT> P1.6Min"; i.e. change less-than symbol to greater-than symbol.

Proposed Response Response Status O

CI 100 SC 100.2.9.7 P 102 L 35 # 3281
 Laubach, Mark Broadcom

Comment Type T Comment Status X
 New upstream table, fix "see subclause 10.2.7.2".

SuggestedRemedy
 Change cross reference to "100.2.7.2".

Proposed Response Response Status O

CI 100 SC 100.3.3 P 108 L 52 # 3325
 Laubach, Mark Broadcom

Comment Type T Comment Status X

1) Subclauses through 100.3.3 to 100.6 have no text. If no text is provided by end of this March meeting, remove these subclauses.

2) Subclause 100.7 is "EEE capability" and needs text.

3) Consider removing subclauase or adding an editor's note to remove subclass "100.8 Timesync capability" if no text is provided by the May meeting; i.e. in general, any empty subclauses with no text at the close of the May meeting should be removed.

SuggestedRemedy

1) as per comment.
 2) Add the following text: "For the 10GPASS-XR-U PHY the CNU shall enable Energy-Efficient Ethernet (EEE) capability to conserve energy by deactivating power-consuming PMD Functions (e.g. RF power amplifier) between bursts using PMD_SIGNAL.request() (see 100.2.1.4)."

Page 82, Line 30. Add sentence to paragraph: "PMD functions are implementation dependent and include digital-to-analog conversion, analog-to-digital conversion, interpolation, analog filtering, frequency conversion, and/or RF power amplification."

For 3) as per what TF decides.

Proposed Response Response Status O

CI 100 SC 101.3.2.5.4 P 132 L 46 # 3262
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X
 This empty section is a duplicate heading with 101.3.2.5.6 (which has details)

SuggestedRemedy
 Remove section heading and Editor's Note.

Proposed Response Response Status O

Cl 100A **SC 100A.0.0** **P 323** **L 1** # **3314**
 Laubach, Mark Broadcom

Comment Type **T** **Comment Status** **X**

Fix all table footnotes to normative alpha format and use FM table footnote indenting.

SuggestedRemedy
 Editor's discretion to fix Tables as per comment.

Proposed Response **Response Status** **O**

Cl 101 **SC 101.1.3** **P 112** **L 26** # **3252**
 Remein, Duane Huawei Technologies

Comment Type **T** **Comment Status** **X**

Probe Duration (and therefore PrbDur) are no longer used.

SuggestedRemedy
 remove row from Table 101-3

Proposed Response **Response Status** **O**

Cl 101 **SC 101.1.1** **P 111** **L 25** # **3259**
 Remein, Duane Huawei Technologies

Comment Type **E** **Comment Status** **X**

Cl 101 also uses the floor function symbols (see Eq 101-3)

SuggestedRemedy
 Add definition of floor symbol (copy from Cl 100.1.1 pg 74 ln 25)

Proposed Response **Response Status** **O**

Cl 101 **SC 101.1.3** **P 113** **L 13** # **3318**
 Laubach, Mark Broadcom

Comment Type **T** **Comment Status** **X**

Lines 13 through 28. We need a set of counters for the DS (CNU receiver) and a set of counters for the US (CLT receiver).

SuggestedRemedy
 Add a second set of counters and distinguish US and DS. Variable names Page 145 Line 27 through 36 should be updated for DS as well as names in state diagram on Page 148, lines 6-8, 31, and 34.

Proposed Response **Response Status** **O**

Cl 101 **SC 101.1.2** **P 111** **L 30** # **3321**
 Laubach, Mark Broadcom

Comment Type **T** **Comment Status** **X**

Time to put a stake in the ground. Also, fix xref to point to 10G EPON subclause as the time_quantum in 64.2.2.1 does not point to the 10GEPON MPCP clause. This subclause will likely be amended to include any (de)jitter effects and impact of upstream symbol mapper operation. Will do so in a later contribution. For now, all functional processing implementations should adhere to the same combined delay variation as 10GEPON (Section 76.1.2.).

SuggestedRemedy
 Change "TBD" to "1". Change "64.2.2.1" to "77.2.2.1".

Proposed Response **Response Status** **O**

Cl 101 **SC 101.2.4.2** **P 117** **L 10** # **3282**
 Laubach, Mark Broadcom

Comment Type **T** **Comment Status** **X**

Consider taking out all RS text as EPoC does not modify the RS. Clause 101.2.4.2, keep title and first sentence and references. Do for Tx and Rx.

SuggestedRemedy
 Page 117, Line 10 Clause 101.2.4.2, keep title and first sentence and references. Remove subclauses 101.2.4.2.1 through 101.2.4.2.3.
 Page 117, Line 46, keep title and add new first paragraph "The receive function of the EPoC RS is described in <green>65.1.3.3</green> with the exceptions as noted in <green>76.2.6.1.3</green>. The XGMII receive function is described in <green>46.3.2</green>." Remove remainder of text in this subclause, and subclauses 101.2.4.3.1 through 101.2.4.3.3.

Proposed Response **Response Status** **O**

CI 101 SC 101.3 P 119 L 29 # 3266
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

The PCS section has gotten a bit disjointed and is poorly organized, with duplicate sections. Recommend reording section.
 Made technical due to extent of change.

SuggestedRemedy

Recommend new outline as illustrated in remain_3bn_13_0315.pdf

Proposed Response Response Status O

CI 101 SC 101.3.2 P 120 L 4 # 3256
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

This statement can be better worded: "the EPoC PCS includes an Idle control character deletion function performing the function of data rate adaptation and a FEC overhead compensation followed by a 64B/66B encoder, and a mandatory FEC encoder."

(also see related comment against 100.1.3, pg 76 ln 9)

SuggestedRemedy

Change to read:

"the EPoC PCS includes an Idle Deletion function that performs data rate adaptation and FEC overhead compensation, followed by a 64B/66B Encoder, and a FEC Encoder / Data Detector."

In CI 101 replace:

15 instances of "Idle control character deletion process" with "Idle Deletion process"

14 instances of "FEC encoder" with "FEC Encoder"

12 instances of "64B/66B encoder" with "64B/66B Encoder"

Proposed Response Response Status O

CI 101 SC 101.3.2.1 P 120 L 18 # 3257
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

This statement is self contradictory:

"to decrease the data rate between the MAC and PHY, while maintaining the effective data rate unchanged (data rate adaptation sub-process)"

SuggestedRemedy

Change to read:

"to decrease the data rate between the MAC and PHY (data rate adaptation sub-process)"

Proposed Response Response Status O

CI 101 SC 101.3.2.1 P 120 L 35 # 3258
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

This statement is conflicts with the preceding sentence which states that, once Idle Deletion is complete no excess Idles remain in the data stream:

"sufficient number of excess Idle control characters are present in the data stream, so that the minimum IPG between two adjacent frames is preserved once all excess Idle control characters are removed"

SuggestedRemedy

Strike first "excess" so the statement reads:

"sufficient number of Idle control characters are present in the data stream, so that the minimum IPG between two adjacent frames is preserved once all excess Idle control characters are removed"

Proposed Response Response Status O

CI 101 SC 101.3.2.1.2 P 121 L 17 # 3260
Remein, Duane Huawei Technologies

Comment Type T Comment Status X
countVector defined twice, here and in 101.3.3.3.2 with different definitions
101.3.2.1.2
TYPE: 16-bit unsigned integer
Counts the number of 72-bit vectors transmitted after the removal of Idle characters as part of data rate adaptation and FEC overhead compensation.
101.3.3.3.2
TYPE: 16-bit unsigned integer
This variable represents the number of 72-bit vectors stored in the FIFO_II at the given moment of time.

SuggestedRemedy
Change variable name in 101.3.2.1.2 to countVectorT and in Fig 101-2 (4x)

Proposed Response Response Status O

CI 101 SC 101.3.2.1.2 P 122 L 15 # 3283
Laubach, Mark Broadcom

Comment Type T Comment Status X
Consider replacing with DS_DataRate. Do sanity check on OFDM symbol rate, etc. Why is PLC separated out in this?

SuggestedRemedy
Replace PMD_Rate lines 16 through 22 with DS_DataRate variable definition with cross reference to 100.2.6.1 as appropriate.

Proposed Response Response Status O

CI 101 SC 101.3.2.5.1 P 129 L 48 # 3284
Laubach, Mark Broadcom

Comment Type T Comment Status X
We removed the legacy TDD CLT Tx data detection from figure in earlier comment rounds. This subclause is not needed.

SuggestedRemedy
Remove subclause 101.3.2.5.1.

Proposed Response Response Status O

CI 101 SC 101.3.2.5.10 P 137 L 33 # 3267
Remein, Duane Huawei Technologies

Comment Type E Comment Status X
Ref (see 101.4.1.2.1) should be associated with PMA_UNITDATA.request not DS_DataRate

Same issues at pg 145 line 51

SuggestedRemedy
move to just after PMA_UNITDATA.request

Proposed Response Response Status O

CI 101 SC 101.3.2.5.12 P 138 L 32 # 3268
Remein, Duane Huawei Technologies

Comment Type E Comment Status X
Blank section.

SuggestedRemedy
Remove

Proposed Response Response Status O

CI 101 SC 101.3.2.5.2 P 131 L 15 # 3264
 Remein, Duane Huawei Technologies

Comment Type TR Comment Status X

This para has little to do with LDPC encode process and more rightly belongs in 101.3.2.2 (which points to CI 49).

"The 64B/66B encoder produces a stream of 66-bit blocks as shown in Figure 101-6 (see 49.2.4.3 for more details); each 66-bit block is composed of 2 bits of sync header and 64 bits of data. These 66-bit blocks are converted to 65-bit blocks by removing the redundant first bit (i.e., sync header bit <0>) in each 66-bit block received from the 64B/66B encoder and are then delivered to the FEC encode and Data Detector input process. The FEC encoder accumulates BQ (see Table 101-2) of these 65-bit blocks to form the payload portion of the FEC codeword." In addition the referenced material in CI 49 includes a scrambler within the 64/66B encoder and is not appropriate for EPoC as we scramble in the PMA layer.

Similar text with similar issues lives in 101.3.2.5.6 pg 135 ln 9

See related comments against wording in 101.3.2.5.2 & 101.3.2.5.6

SuggestedRemedy

Remove the para's from 101.3.2.5.2 & 101.3.2.5.6

Change 101.3.3.2 to read:

"The EPoC PHY utilizes a 64B/66B decoder based on that described in 49.2.11 with several important differences. The EPoC 64B/66B encoder does not include a scrambler function and the output is a 65B block with a single synch header bit as illustrated in Figure 101-11. The state diagram found in Figure 49-16 is followed. The 66-bit blocks produced by the Clause 49 64B/66B encoder are shortened to 65-bits by removing the redundant first bit (i.e., sync header bit <0>). These 65-bit blocks are then delivered to the PMA as described in 101.4.1.2."

Proposed Response Response Status O

CI 101 SC 101.3.2.5.2 P 131 L 15 # 3263
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

The para beginning "The 64B/66B encoder produces a stream of 66-bit blocks as shown in Figure 101-6 ..." does not describe the LDPC encoding process.

SuggestedRemedy

Remove the para and reword this section to read:

"The process of padding FEC codewords and appending FEC parity octets in the 10GPASS-XR CLT PCS transmit path is illustrated in Figure 101-6. First the FEC encoder accumulates BQ 65-bit blocks (see Table 101-2) to form the payload portion of the FEC codeword. Next, the FEC encoder calculates the CRC40 (see 101.3.3) over the aggregated BQ 65-bit blocks, placing the resulting 40 bits of CRC40 code immediately after the BQ 65-bit blocks, forming the payload portion of the FEC codeword. Finally, the FEC encoder appends BP (see Table 101-2) padding bits (with the binary value of "0") to the payload of the FEC codeword as shown in Figure 101-6. The resulting FP bits are then passed to the LDPC-encoder. The LDPC-encoder generates FR bits of parity. After encoding, the encoder deletes the BP bits of padding and constructs the output codeword with a length of (FP - BP) + FR bits; i.e., (14400 - 60) + 1800 = 16140 bits. For transmit processing in the downstream direction, the codeword size is a constant and is represented by constant FEC_DS_CodeWordSize (see 101.3.2.5.2).

Proposed Response Response Status O

CI 101 SC 101.3.2.5.3 P 132 L 17 # 3265
 Remein, Duane Huawei Technologies

Comment Type TR Comment Status X

It is not clear from Fig 101-6 and Fig 101-11 which sync header bits are added to the data stream. In Figure 76-12 and from the text in 2nd para of 101.3.2.5.2 "LDPC encode process within CLT (downstream)" it is clear. Figure 101-6 should match it's descriptive text.

SuggestedRemedy

Replace with illustration in remain_3bn_12_0315.pdf and remain_3bn_14_0315.pdf respectively (available in visio)

Proposed Response Response Status O

CI 101 SC 101.3.2.5.5 P 132 L 51 # 3302
Laubach, Mark Broadcom

Comment Type T Comment Status X

Need to change as the generation of the PMD_SIGNAL.request() was moved into the CNU PMA Pilot Insertion function (the reference point in the processing where it is known if an RB is going to be used (turned on with energy in a subcarrier) in an RB Frame prior to passing to IDFT.

SuggestedRemedy

Remove subclause 101.3.2.5.5.
Page 135, line 12 remove "and Data Detector input".
Page 137, line 45 change "Data Detector" to "PMA Client function".
Page 138, line 38 remove the redundant ", FEC encode and Data Detector output process," from CLT paragraph.
Page 138, line 42 remove "and Data Detector" from CNU paragraph.
Page 77, line 14, move "DATA DETECTOR" Pilot Insertion box, line 31.

Note that this comment will likely overlap with other CNU transmit changes entered by comment or by presentation.

Proposed Response Response Status O

CI 101 SC 101.3.3.1 P 141 L 49 # 3285
Laubach, Mark Broadcom

Comment Type T Comment Status X

Did the Annex 101B go away already? We think we said to get rid of it.

SuggestedRemedy

Remove "Annex 101B gives an example of LDPC (FC, FP) FEC decoding." sentence.

Proposed Response Response Status O

CI 101 SC 101.3.3.1.3 P 144 L 20 # 3245
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

"If CRC40ErrCtrl is set to enable and the calculated value"
We typically use TRUE or FALSE

SuggestedRemedy

change "enable" to "TRUE"

Proposed Response Response Status O

CI 101 SC 101.3.3.1.7 P 148 L 38 # 3287
Laubach, Mark Broadcom

Comment Type T Comment Status X

Figure 101-13, "CTC" to "CRC"

SuggestedRemedy

As per comment.

Proposed Response Response Status O

CI 101 SC 101.3.3.2 P 149 L 24 # 3269
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

The reference to CI 49.2.11 64B/66B decoding function needs some clarification as there are some difference in EPoC encoding (notably the lack of scrambling and single sync header bit).

SuggestedRemedy

Change 101.3.2.2 to read:

"The EPoC PHY utilizes a 64B/66B encoder based on that described in 49.2.11 with several important differences. The EPoC 64B/66B decoder does not include a descrambler function as described in 49.2.10 and the input is a 65B block with a single synch header bit. The state diagram found in Figure 49-17 is followed after the addition of sync header bit <0> as illustrated in Figure 101-11."

Proposed Response Response Status O

CI 101 SC 101.4.1.2.2 P 154 L 29 # 3303
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 Text change made for D1.3 incorrectly states operation of burstStart and burstEnd boolean operation.
 SuggestedRemedy
 Change "always a single FEC codeword of size FEC_DS_CodeWordSize bits, and the CLT transmits continuously, thus both burstStart and burstEnd are FALSE." to "composed of a single FEC codeword where in the CNU upstream, the burst may comprise of one or more concatenated FEC codewords (see 101.3.2.5.7)."
 Proposed Response Response Status O

CI 101 SC 101.4.1.2.3 P 154 L 35 # 3304
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 Fix the cross reference. Fix also in next subclause 101.4.1.2.4, Line 51.
 SuggestedRemedy
 Line 35, Change "101.x.x.x" to "100.2.6.2"
 Line 50, Change "101.x.x.x" to "101.4.2.7".
 Line 49, Change "PMA" to "PMA symbol mapper"
 Proposed Response Response Status O

CI 101 SC 101.4.1.2.3 P 154 L 35 # 3299
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 Fix reference to 100.x.x.x.
 SuggestedRemedy
 Cross reference to 100.2.6.2.
 Proposed Response Response Status O

CI 101 SC 101.4.1.3.1 P 155 L 7 # 3300
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 Why was upstream statement removed from the paragraph?
 SuggestedRemedy
 Consider returning last sentence of paragraph from previous Draft (modified): "In the upstream direction, the burst received by the CLT is variable in size and if comprised of one or more concatenated FEC codewords (see see 101.3.2.5.7)."
 Proposed Response Response Status O

CI 101 SC 101.4.2.1 P 155 L 42 # 3211
 Remein, Duane Huawei Technologies
 Comment Type TR Comment Status X
 This statement in CI 100 pg 108 ln 26
 "Channel loading consists of a single OFDM channel with no other signals"
 conflicts with the following requirement in CI 101:
 "OFDM channel 1 shall always be enabled."
 SuggestedRemedy
 Change requirement to read:
 "OFDM channel 1 shall always be enabled except during RxMER testing (see 100.3.2)."
 Proposed Response Response Status O

CI 101 SC 101.4.2.11 P 175 L 31 # 3293
 Laubach, Mark Broadcom
 Comment Type E Comment Status X
 Double check downstream DSNcp, DSNrp, USNcp, and USNrp and avoid subscription or underscores in this clause.
 Line 45, change "CP" to "DSNcp". - can't find this is D1.3 clean text.
 SuggestedRemedy
 Editor's discretion to correct in Clause 101.
 Proposed Response Response Status O

CI 101 SC 101.4.2.11 P 178 L 52 # 3306
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 Add a note to Figure 101-25 that Cyclic prefix and windowing: US is created in same fashion using USNcp and USNrp.
 SuggestedRemedy
 As per comment.
 Proposed Response Response Status O

CI 101 SC 101.4.2.2 P 156 L 26 # 3305
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 Xref should be 101-12. Before 101.4.2.3.
 SuggestedRemedy
 Change "10X-X" to crossref to Table 101-12.
 Proposed Response Response Status O

CI 101 SC 101.4.2.5 P 159 L 41 # 3246
 Remein, Duane Huawei Technologies
 Comment Type T Comment Status X
 The following can be worded better:
 "Downstream pilots are comprised of subcarriers modulated with a predefined pattern known to all CNUMs. The pilot information is conveyed via the Pilot Insertion function (see Figure 100-2)."
 The term pattern when associated with pilots typically refers to the order of the Pilots in the frame. It is not clear what pilot information is in this context.
 SuggestedRemedy
 Change to read:
 "Downstream pilots are comprised of subcarriers modulated with a predefined data sequence known to all CNUMs. The pilot data sequence is conveyed via the Pilot Insertion function (see Figure 100-2)."
 Proposed Response Response Status O

CI 101 SC 101.4.2.5.4 P 162 L 17 # 3298
 Laubach, Mark Broadcom
 Comment Type ER Comment Status X
 Investigate equation numbering mis-restart and correct.
 SuggestedRemedy
 As per comment, editor's discretion.
 Proposed Response Response Status O

CI 101 SC 101.4.2.5.4 P 162 L 3 # 3276
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 There are a number of "shall"s in this subclause, but the continuous pilot placement is normative in its entirety. Maybe one "shall" at the top?
 SuggestedRemedy
 Consider placing a single statement at the start of this subclause. Suggestion of adding a first sentence: "The CLT shall follow continuous pilot placement requirements and procedures as defined in this subclause in their entirety." If yes, then consider replacing the occurrences of "shalls" in the subclause with active replacements; e.g. "shall follow" to "follows" or equivalent at editor's discretion.
 Proposed Response Response Status O

CI 101 SC 101.4.2.5.4 P 162 L 3 # 3247
 Remein, Duane Huawei Technologies
 Comment Type T Comment Status X
 Duplicate requirements:
 "The CLT shall define a set of continuous pilots distributed as uniformly as possible (see below) over the entire OFDM spectrum in addition to the predefined continuous pilots described in 101.4.3.5.3." (Pg 162 ln 3)
 and
 "The CLT shall place continuous pilots (excluding the eight continuous pilots around the PHY Link) per the 8 Steps below after calculating a value for NCP using Equation (101-6)."
 (pg 162 ln 12)
 SuggestedRemedy
 Keep the latter and change the former to read:
 "The CLT defines a set of continuous pilots ..."
 Proposed Response Response Status O

CI 101 SC 101.4.3.10 P 191 L 1 # 3277
Laubach, Mark Broadcom

Comment Type T Comment Status X

This sub clause is duplicative of 101.4.3.8

SuggestedRemedy

Remove blank subclause 101.4.3.10.
Remove blank subclause 101.4.3.12 and add "and pre-equalization" to end of next subclause title.

Proposed Response Response Status O

CI 101 SC 101.4.3.13.1 P 191 L 28 # 3250
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Eq 101-24 and the subsequent para (below) are a bit confusing. How does Ck(i) and Ak(i) relate to EQ_CoeffR(k) and EQ_CoeffI(k)?
"where Ck(i) is the pre-equalizer coefficient of the k-th subcarrier as used in the last probe transmission, Ck(i+1) is the updated pre-equalizer coefficient of the k-th subcarrier and Ak(i) is the coefficient information received via the PHY Link update. "x" indicates a complex multiplication. The variables EQ_CoeffR(k) and EQ_CoeffI(k) are updates to the real and imaginary (respectively) coefficient values in the form of I+jQ where I and Q are both using 16-bit fractional two's complement notation (Q2.14 format)."

SuggestedRemedy

change to read:
"... and Ak(i) is the coefficient update, variables EQ_CoeffR(i) and EQ_CoeffI(i) (see 101.4.3.13.2), received via the PHY Link. The symbol "x" indicates a complex multiplication."
Note the removed info on update variables is in the subclause referenced.

Proposed Response Response Status O

CI 101 SC 101.4.3.14 P 192 L 33 # 3294
Laubach, Mark Broadcom

Comment Type E Comment Status X

Table 101-17 and 101-18 are using different fonts for table column headers.

SuggestedRemedy

As per comment, editor's discretion to remedy font issues.

Proposed Response Response Status O

CI 101 SC 101.4.3.3 P 179 L 47 # 3216
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

The following statement needs to be updated now that we have no time interleaver:
"Each Resource Block is composed of one subcarrier and has a duration identical to the time interleaver period as set using the RBSIZE variable, of either 8 or 16 symbols. See RB size parameter in the 10GPASS-XR US OFDM control register 45.2.1.110.1. Changing the Resource Block duration results in a network restart."

SuggestedRemedy

change to:
"Each Resource Block is composed of one subcarrier and has a duration of either 8 or 16 symbols and is set using the RBSIZE variable. Changing the Resource Block duration results in a network restart."

Proposed Response Response Status O

CI 101 SC 101.4.3.3 P 179 L 50 # 3307
Laubach, Mark Broadcom

Comment Type T Comment Status X

Change references or remove where pointing to Clause 45. Maybe point to Table 101-3 or do away with the reference entirely.

SuggestedRemedy

Suggest doing away with the reference to Clause 45.

Proposed Response Response Status O

CI 101 SC 101.4.3.4 P 182 L 29 # 3308
Laubach, Mark Broadcom

Comment Type T Comment Status X

Table 101-13.

Line 26: Upstream does not have exclusion band or contiguous group requirements. OFDM channel bandwidth is specified as minimum 10 MHz in Table 100-11, so "40" subcarriers here creates confusion.

Line 29: What is value for TBD? Note no corresponding percentage requirement in D3.1 upstream. CLT will control percentage needed for proper upstream receiver operation.

Page 157:

Also need to look at Table 101-8 want to borrow some terminology from D3.1 and update the table. Page 157, Line 5, we don't define "group" anywhere. Also need minimum size exclusion band.

SuggestedRemedy

Page 182:

Line 26: remove "Minimum number of active subcarriers in a contiguous group" row from table.

Line 29: remove "Maximum excluded spectrum in the encompassed spectrum" row from table.

Page 157:

Line 5: change "group" to "modulation band"

Line 5: Add new table row: Parameter: "Minimum number of subcarriers in an exclusion band" Limit: "20" Unit: <blank> or write in "subcarriers" where appropriate.

Page 156, Line 49. Insert "Exclusion bands separate contiguous modulation bands." before the last sentence.

Proposed Response Response Status O

CI 101 SC 101.4.3.6 P 184 L 37 # 3324
Laubach, Mark Broadcom

Comment Type T Comment Status X

laubach_3bn_10_0315.pdf (laubach_3bn_10_0315.fm) contains the upstream symbol mapper draft text as per TQ #148.

SuggestedRemedy

Insert the upstream symbol mapper draft text from laubach_3bn_10_0315.pdf for subclause 101.4.3.6.

Proposed Response Response Status O

CI 101 SC 101.4.3.9.3 P 188 L 11 # 3286
Laubach, Mark Broadcom

Comment Type T Comment Status X

Modify start burst marker 0xFFFF and 0xFFFF encoding to indicate first bit of first RE, all other values reserved.

SuggestedRemedy

Add new paragraph "The setting of 0xFF and 0xFF respectively in the two start burst markers designates that the first bit of data for the burst starts in the MSB bit of the first usable data resource element in the resource block immediately following the start burst marker. All other values and designations are reserved."

Proposed Response Response Status O

CI 101 SC 101.4.4.7 P 183 L 45 # 3249
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

These two sentences say the same thing in differing detail.

"Low Density Pilots contain data but at a bit loading lower than what the resource element would normally use. The Low Density Pilot resource element is modulated using the higher modulation order of either BPSK or 4 bits lower than the bit loading specified in the ModTypeSC(n) variable for that subcarrier. "

SuggestedRemedy

Keep the last sentence and strike the first.

Proposed Response Response Status O

CI 102 SC 102.1.8 P 209 L 20 # 3319
Laubach, Mark Broadcom

Comment Type T Comment Status X

Variables need to be added for FEC decode counters. There is no subclause for PHY Link FEC decoder.

SuggestedRemedy

Suggest adding: DSPL and USPL prefix for FecCodeWordCount, FecCodeWordSuccess, FecCodeWordFail, similar to Clause 101 names. Create a new subclause for PHY Link FEC decoder. Editor to create appropriate text (only, no SD required) that describes the above counter operation in CLT and CNU receivers.

Proposed Response Response Status O

Cl 102 **SC 102.2.3.1** **P 216** **L 33** # **3323**
 Laubach, Mark Broadcom

Comment Type **T** *Comment Status* **X**

The second and third paragraph here detail how the CNU does new profile activation, yet the subclause title doesn't reflect this.

SuggestedRemedy
 Suggest changing title "DS EPoC PHY Frame Header" to "DS EPoC PHY frame header and CNU new profile activation"

Proposed Response *Response Status* **O**

Cl 102 **SC 102.2.3.1** **P 216** **L 4** # **3310**
 Laubach, Mark Broadcom

Comment Type **T** *Comment Status* **X**

Need to update "{ref}".

SuggestedRemedy
 Update "{ref}" to a cross reference to any new CL 101 subclause on upstream timestamp insertion that may be adopted by the TF.

Proposed Response *Response Status* **O**

Cl 102 **SC 102.2.5** **P 221** **L 30** # **3221**
 Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **X**

Need to provide a variable and register to indicate the time required for CNU to respond to the DS PHY Link

SuggestedRemedy
 NOT FINAL

May not submit

Proposed Response *Response Status* **O**

Cl 102 **SC 102.2.6.5** **P 224** **L 12** # **3322**
 Laubach, Mark Broadcom

Comment Type **T** *Comment Status* **X**

Subclauses 102.2.6.5 Timers and 102.2.6.6 Messages have no text or TBD.

SuggestedRemedy
 Remove these textless subclauses if no text is provided in another comment.

Proposed Response *Response Status* **O**

Cl 102 **SC 102.4.1.4** **P 234** **L 24** # **3275**
 Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **X**

"NCP" should be USNcp Cl 102 Fig 102-21 pg 234 ln 24

SuggestedRemedy
 Per comment

Proposed Response *Response Status* **O**

Cl 102 **SC 102.4.1.7.3** **P 237** **L 42** # **3270**
 Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **X**

SC_Cnt cannot start at 0 and go to 4096

SuggestedRemedy
 Change 4096 to 4095

Proposed Response *Response Status* **O**

Cl 102 SC 102.4.1.7.7 P 237 L 14 # 3311
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 Figure CNU PHY Discovery Response Transmission control state diagram. Need to resolve the TBD in "rnd(TBD)".
 SuggestedRemedy
 Part of TBD resolution.
 Proposed Response Response Status O

Cl 102 SC 102.4.2.6 P 241 L 21 # 3251
 Remein, Duane Huawei Technologies
 Comment Type T Comment Status X
 Updates to Wideband probing SD & variables.
 SuggestedRemedy
 See remain_3bn_11_0315.pdf & remain_3bn_11_0315CMP.pdf
 Proposed Response Response Status O

Cl 102 SC 102.4.3 P 245 L 16 # 3218
 Remein, Duane Huawei Technologies
 Comment Type T Comment Status X
 Are the following variables needed at the CNU for Link-up declaration?
 Type2_Repeat
 Type2_Start
 Type1_Repeat
 Type1_Start
 SuggestedRemedy
 Add to Table 102-13 mark both PHY Discovery and Link-Up as "Y"
 Proposed Response Response Status O

Cl 102 SC 102.4.3 P 245 L 7 # 3219
 Remein, Duane Huawei Technologies
 Comment Type T Comment Status X
 In table 102-13 US_BlockTypeSC(0) through US_BlockTypeSC(TBD) are not used in draft.
 SuggestedRemedy
 strike row
 Proposed Response Response Status O

Cl 103 SC 103.0.0.0 P 251 L 1 # 3313
 Laubach, Mark Broadcom
 Comment Type T Comment Status X
 Rate calculations that were added were based on 10GEPON sub layer definitions, in EPoC, much of what was in the PMD is in our PMA.
 SuggestedRemedy
 Change "PMD" to "PMA" where appropriate to reflect correct sublayer for overheads, calculations, etc. Editor's discretion.
 Proposed Response Response Status O

Cl 103 SC 103.2.2.1 P 262 L 2 # 3244
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Two definitions for FEC CW size which are nearly identical. These need to be more clearly differentiated.

FEC_CODEWORD_SIZE

TYPE: integer

This constant represents the size of FEC codeword in octets (FEC_PAYLOAD_SIZE + FEC_PARITY_SIZE).

Value: 1987

FEC_CODEWORD_SIZE_FRAC

TYPE: real number

This constant represents the exact size of the FEC codeword in octets.

Value: 1760+2944/13

This is confusing.

SuggestedRemedy

NOT FINAL

Change definitions as show below

FEC_CODEWORD_SIZE

TYPE: integer

This constant represents the approximate size of the downstream FEC codeword in whole octets (FEC_PAYLOAD_SIZE + FEC_PARITY_SIZE).

Value: 1987

FEC_CODEWORD_SIZE_FRAC

TYPE: real number

This constant represents the exact size of the FEC codeword in whole and fractional octets.

Value: 1760+2944/13 (1760 +(1840*64/65/8)

Proposed Response Response Status O

Cl 103 SC 103.2.2.1 P 262 L 2 # 3237
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

derivation of values for FEC_PARITY_SIZE and FEC_PAYLOAD_SIZE can be less obfuscated.

SuggestedRemedy

NOT FINAL

Change value for
FEC_PARITY_SIZE from
"227" to

and for FEC_PAYLOAD_SIZE from
"1760" to "1760 (220 block of 64-bits as seen from the MAC Table 101-2)

Proposed Response Response Status O

CI 103 SC 103.2.2.1 P 262 L 3 # 3243
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

FEC_CODEWORD_SIZE, FEC_PARITY_SIZE and FEC_PAYLOAD_SIZE are only constants in the DS direction. In the US these will vary depending on OctetsRemaining

SuggestedRemedy

For DS change existing constant names, via global search & replace to:

DS_FEC_CW_Sz
 DS_FEC_PrtSz
 DS_FEC_PldSz

Change the definition of each of these constants by replacing
 "the size of FEC codeword" with
 "the size of the downstream FEC codeword"

Add new functions:

US_FEC_CW_Sz(OctetsRemaining)

This function returns an integer that represents the size of upstream FEC codeword in octets (FEC_PAYLOAD_SIZE + FEC_PARITY_SIZE) depending on the size of OctetsRemaining.

```
{
  If OctetsRemaining > 0 and OctetsRemaining < 192 then US_FEC_CW_Sz = 1120/8
  Elseif OctetsRemaining > 193 and OctetsRemaining < 800 then US_FEC_CW_Sz =
  floor(5940/8)
  Else US_FEC_CW_Sz = 16200/8
}
```

US_FEC_PrtSz(OctetsRemaining)

TYPE: integer

This function returns an integer that represents the size of upstream FEC codeword parity field in octets depending on the size of OctetsRemaining.

```
{
  If OctetsRemaining > 0 and OctetsRemaining < 192 then US_FEC_PrtSz = 280/8
  Elseif OctetsRemaining > 193 and OctetsRemaining < 800 then US_FEC_PrtSz =
  ceiling(900/8)
  Else US_FEC_PrtSz = 1800/8
}
```

US_FEC_PldSz(OctetsRemaining)

TYPE: integer

This function returns an integer that represents the size of upstream FEC codeword payload in octets depending on the size of OctetsRemaining.

```
{
  If OctetsRemaining > 0 and OctetsRemaining < 192 then US_FEC_PldSz = (840-40)/8
  Elseif OctetsRemaining > 193 and OctetsRemaining < 800 then US_FEC_PldSz =
  (5040-40)/8
  Else US_FEC_PldSz = (14400-40)/8
}
```

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
 COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
 SORT ORDER: Clause, Subclause, page, line

Proposed Response Response Status O

CI 103 SC 103.2.2.4 P 265 L 27 # 3312
 Laubach, Mark Broadcom

Comment Type T Comment Status X

Is CheckGrantSize(length) being used.

SuggestedRemedy

Removed if not being used.

Proposed Response Response Status O

CI 103 SC 103.3.3 P 275 L 51 # 3291
 Laubach, Mark Broadcom

Comment Type E Comment Status X

What is all the yellow highlight text mean?

SuggestedRemedy

Suggestion: Describe why text is highlighted in the editors note on Line 49, or remove highlight.

Proposed Response Response Status O

CI 45 SC 45 P 27 L 3 # 3233
 Remein, Duane Huawei Technologies

Comment Type ER Comment Status X

After consulting with the WG Secretary I believe that 802.3bx is sufficiently stable that we can make this change now so as to catch any editorial errors before WG ballot.
 EDITORS NOTE (to be removed prior to publication): Paragraph and register numbering will need to be reviewed and updated after release of 802.3 2015.

SuggestedRemedy

Renumber CI 45 as follows
 45.2.1.13a -> 45.2.1.14a
 Table 45-15b -> 45.17a
 45.2.1.107 -> 45.2.1.131 renumber subsequent subclauses as appropriate
 Table 45-78a -> Table 45-98a renumber subsequent Tables as appropriate
 Update Editorial notes as appropriate

Proposed Response Response Status O

CI 45
 SC 45

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 2/23/2015 11:26:09 AM

CI 45 SC 45.2.1 P 30 L 1 # 3239
 Remein, Duane Huawei Technologies

Comment Type ER Comment Status X

Align CI 45 numbering with 802.3bx draft.

SuggestedRemedy

Change 45.2.1.13b to 45.2.1.14a & renumber subsequent sections
 Change Table 45-15b to 17a
 Change 45.2.1.107 to 45.2.1.131 & renumber subsequent sections
 Change Table 45-78a to 45-98a & renumber subsequent sections
 (as shown in remain_3bn_17_0315.pdf)

Proposed Response Response Status O

CI 45 SC 45.2.1 P 31 L 8 # 3271
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

DS PHY data rate Register naming is inconsistent:
 Table 45-3 pg 31 ln 8 DS PHY data Rate
 45.2.1.123 pg 47 ln 20, 22 & 29 DS data rate (Also in Table 45-78q)
 Table 100-1 Pg 81 ln 8,11,13 DS PHY data rate & DS data rate
 Table 101-1 Pg 112 Ln 47, 50, 52 DS PHY data rate & DS data rate

Likewise US PHY data rate
 Table 45-3 pg 31 ln 10 US Phy data Rate
 45.2.1.124 pg 47 ln 49 US PHY data rate
 45.2.1.124 pg 47 ln 51 & pg 48 ln 1, 5 US data rate (also in Table 45-78r)
 Table 100-1 Pg 81 ln 15,18,20 US PHY data rate & US data rate
 Table 101-1 Pg 113 Ln 7, 9, 12 US PHY data rate & US data rate

SuggestedRemedy

Consistently use
 US PHY data rate &
 DS PHY data rate

Proposed Response Response Status O

CI 45 SC 45.2.1.107.1 P 36 L 24 # 3197
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Ref to 101.4.3.8 incorrect

SuggestedRemedy

change to 101.4.2.5.4

Proposed Response Response Status O

CI 45 SC 45.2.1.108 P 37 L 12 # 3198
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

this statement is slightly misguided
 "Sets the CLT output port to a muted state for text purposes"

SuggestedRemedy

change text to test

Proposed Response Response Status O

CI 45 SC 45.2.1.110.1 P 40 L 41 # 3213
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Duplicate definitions
 Register bit 1.1907:7 indicates the number of OFDM symbols in a Resource Block in the upstream direction. When this bit is set to a zero there are 8 symbols per Resource Block. When this bit is set to a one there are 16 symbols per Resource Block.

101.4.4.3.3 pg 182 ln 1

RBsize

TYPE: boolean

This variable determines the size of the upstream Resource Blocks. When RBsize is TRUE then Resource Block size is 16 symbols, When RBsize is FALSE then Resource Block size is 8 symbols.

EDITORS NOTE (to be removed prior to publication): This definition duplicates that in CI 45.2.1.110. Only one should be kept.

SuggestedRemedy

change 45.2.1.110.1 to read:

Register bit 1.1907:7 indicates the number of OFDM symbols in a Resource Block in the upstream direction. This bit is a reflection of RBsize defined in 101.4.4.3.3."

Proposed Response Response Status O

CI 45 SC 45.2.1.112.4 P 42 L 14 # 3214
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Type 1 Start is between 0 and 15 not 0 and 31

SuggestedRemedy

change 31 to 15

Proposed Response Response Status O

CI 45 SC 45.2.1.118 P 45 L 25 # 3240
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

R/O s/b RO (4x)

SuggestedRemedy
 per comment

Proposed Response Response Status O

CI 45 SC 45.2.1.119 P 46 L 2 # 3272
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Wording

"Register 1.1921.15 through 1.1921.0 represent the DS PHY Link frame count"
 and

"The assignment of bits in the DS PHY Link frame counter bit definition is shown in Table 45-78m"

SuggestedRemedy

Change to

"Register 1.1921 is the DS PHY Link frame counter"

and

"The assignment of bits in the DS PHY Link frame counter register is shown in Table 45-78m"

Proposed Response Response Status O

CI 45 SC 45.2.1.120 P 46 L 20 # 3230
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Wording:

"Registers 1.1923 through 1.1922 form ... "

SuggestedRemedy

change to:

"Registers 1.1923 and 1.1922 form ... "

Proposed Response Response Status O

CI 45 SC 45.2.1.120 P 46 L 27 # 3278
Laubach, Mark Broadcom

Comment Type T Comment Status X

Remove "bit definitions" from title.

This comment was captured during Clause 45 walking through on the socialization conference calls. I neglected to get more detail. So am unsure of the remedy, other than a suggestion to remove "bit definitions" from figure titles?

SuggestedRemedy

Proposed Response Response Status O

CI 45 SC 45.2.1.121 P 46 L 47 # 3231
Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Table title inconsistent with text.

SuggestedRemedy

Change from:
Table 45-78o—Phy power offset bit definitions
to
Table 45-78o—PHY power offset bit definitions

Proposed Response Response Status O

CI 45 SC 45.2.1.122 P 47 L 5 # 3224
Remein, Duane Huawei Technologies

Comment Type E Comment Status X

There is no Xref for:
This is used to provision a delay in the ranging response in the event there is an analogue optical segment between the CLT and the CNU's as described in {ref}.

SuggestedRemedy

Add
"EDITORIAL NOTE (to be removed prior to publication): the care and feeding of this register and it's associated variable is not defined anywhere in the draft."

Proposed Response Response Status O

CI 45 SC 45.2.1.125 P 2748 L 27 # 3316
Laubach, Mark Broadcom

Comment Type E Comment Status X

Line 27 and 50 "{ref}" needs to be defined.

Page 46, Line 19. same comment.

SuggestedRemedy

Proposed Response Response Status O

CI 45 SC 45.2.1.125 P 48 L 26 # 3223
Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Xref update for:
See {ref} for a definition of this register

SuggestedRemedy

Change {ref} to "variable FecCodeWordCount in 101.3.3.1.5 and Table 101-1"

Proposed Response Response Status O

CI 45 SC 45.2.1.126 P 48 L 50 # 3225
Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Xref update for:
See {ref} for a definition of this register.

SuggestedRemedy

Change {ref} to "variable FecCodeWordSuccess in 101.3.3.1.5 and Table 101-1"

Proposed Response Response Status O

CI 45 SC 45.2.1.127 P 48 L 20 # 3226
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X
 Xref update for:
 See {ref} for a definition of this register.

SuggestedRemedy
 Change {ref} to "variable FecCodeWordFail in 101.3.3.1.5 and Table 101-1"

Proposed Response Response Status O

CI 45 SC 45.2.7a.3 P 53 L 20 # 3215
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X
 This statement could be clearer:
 "Each number is a 16-bit signed fractional two's complement number."

SuggestedRemedy
 Change to "Each number is a 16-bit signed fractional number conforming to the Q2.14 format."

Proposed Response Response Status O

CI 45 SC 45.2.7a.4 P 54 L 12 # 3292
 Laubach, Mark Broadcom

Comment Type E Comment Status X
 "the" is spelled wrong in second line of second description in table.

Register numbering should start in 45.2.7a.4.1 "12.10240" not "12.240" Is correct in descriptions.

SuggestedRemedy
 Line 12: change "teh" to "the".
 Line 28: subtitle problem "12.240.2:0" should be "12.10240.2:0".
 Editor's discretion to review and correct any register numbering issues.

Proposed Response Response Status O

CI 45 SC 45.2.7a.5 P 54 L 37 # 3320
 Laubach, Mark Broadcom

Comment Type T Comment Status X
 The MER variables here are not reflected in any clause variable table (that I can find). MER values will be calculated as part of the CNU and CLT receive Pilot Processing, Equalization, and FFT functions in the PMA. Note to us that we may need to add some extra words into the FFT subclause to require MER calculation.

SuggestedRemedy
 Suggest adding MER variables into Table 101-1, page 112-114. Editor's discretion on naming and placement.

Proposed Response Response Status O

CI 45 SC 45.2.7a.5 P 54 L 48 # 3199
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X
 The referenced register should be 12.10241.
 "same bit structure as that of register 12.10242."

SuggestedRemedy
 change The remaining registers
 12.10242 to 12.10241

Proposed Response Response Status O

Cl 67 SC 67.1 P 67 L 27 # 3315
 Laubach, Mark Broadcom

Comment Type T Comment Status X

Need to resolve TBD's or not modify Clause 67. Nominal reach is first defined in ammendments to Table 56-1, page 63 as "2.9 km" with table footnote of "Maximal differential distance between CNU's. Reach may vary depending on the CCDN."

Note that Table 67.1 has not been updated with other EPON PHY standards that increase split ratio beyond 1:16, e.g. 1:32, 1:64. Since EPoC does not specify the maximum number of CNU's, the number of PHYs = CLT PHY + N * CNU PHYs is not readily quantifiable into this table format.

SuggestedRemedy

Consider 1 of 2 choices:
Choice 1: do not modify Clause 67 and remove from our draft.
Choice 2: try to fill in the TBD's with something that makes some sense:
Page 67, Lines 27 and 28, replace nominal reach TBDs with "2.9" and add a table footnote same as "i" from Table 56-1. Note now that this is duplicative of the changes to Table 56-1.
Page 67, Lines 27 and 28, replace number of PHYs TBD with "variable" and a new table footnote "Based on cable operator's CCDN configuration, the number of PHYs will be the CLT PHY plus each CNU PHY." or similar.

Proposed Response Response Status O

Cl 76 SC 67.6.3 P 69 L 21 # 3200
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Unlinked ref to 103.3.3.2

SuggestedRemedy

make it a live link (103.3.3.2 is correct).

Proposed Response Response Status O

Cl 76 SC 76 P 72 L 54 # 3295
 Laubach, Mark Broadcom

Comment Type ER Comment Status X

Fix master page copyright from 2013 to 2015.

SuggestedRemedy

As commented.

Proposed Response Response Status O