

CI 00 SC 0 P 00 L 0 # 1225  
 Remein, Duane Huawei Technologies  
 Comment Type ER Comment Status X  
 References to Clause 102 are incorrect because the clause was moved to 103.  
 SuggestedRemedy  
 Correct references  
 Proposed Response Response Status O

CI 00 SC 0 P 11 L 11 # 1227  
 Remein, Duane Huawei Technologies  
 Comment Type T Comment Status X  
 Now would be a good time to begin work on Clause 45  
 SuggestedRemedy  
 See remain\_3bn\_03\_0114.pdf for symopsis, remain\_3bn\_04\_0114.pdf (also availabl ein frame) for details.  
 Proposed Response Response Status O

CI 00 SC 0 P 38 L 1 # 1226  
 Remein, Duane Huawei Technologies  
 Comment Type T Comment Status X  
 We need to determine the applicability of this figure to clause 101, 102 and possibly 103  
 SuggestedRemedy  
 Include this or a subsequent version of this figure in clause 101, and 102, omit in CI 103  
 Proposed Response Response Status O

CI 100 SC 1.2.3.1 P 40 L 23 # 1230  
 Remein, Duane Huawei Technologies  
 Comment Type TR Comment Status X  
 The two para starting with "CLTs capable of generating NOFDM-channels of OFDM per RF port ..." seem unnecessarily wordy and complex. I gather what the text is trying to say is that multi-OFDM channel EPoC system must comply with all OFDM requirements, on a per CEA channel basis for all OFDM channels.  
 SuggestedRemedy  
 Reword the two paragraphs as:  
 "CLT's that support multiple OFDM channels shall comply with all electrical requirements on all OFDM channels or any sub-channel that is actively transmitting energy.  
 Proposed Response Response Status O

CI 100 SC 100.1.4 P 38 L 3 # 1357  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 Figure 1 was taken from the wrong file. This figure was to be used if the Task Force approved the NCP change into the data channel. Since that was not approved, the figure that was accepted as part of laubach\_3bn\_04c\_1113.docx  
 SuggestedRemedy  
 Use the figure from kliger\_3bn\_01b\_1113.vsd  
 Proposed Response Response Status O

CI 100 SC 100.2.2 P 40 L 12 # 1233  
 Remein, Duane Huawei Technologies  
 Comment Type T Comment Status X  
 We need to include a section on RF On/Off Times similar to 60.7.1.3.1 Laser On/Off timing measurement and 75.7.14 Laser on/off timing measurement.  
 It would be good to be consistent with nomenclature that exists in CI 103 (search for 75.7.14).  
 SuggestedRemedy  
 Add 100.2.3 "RF on/off timing measurement" to outline.  
 Proposed Response Response Status O

CI 100 SC 100.2.3.1 P 40 L 16 # 1358  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 "CEA" is neither defined or referenced before use.  
 SuggestedRemedy  
 1) Define and provide references with reference to North America.  
 2) Provide some statements about internationalization and where to go.  
 Proposed Response Response Status O

CI 100 SC 100.2.3.1 P 40 L 17 # 1229  
 Remein, Duane Huawei Technologies  
 Comment Type T Comment Status X  
 The para states that "the number of occupied CEA channels of an OFDM channel is the occupied bandwidth of the OFDM channel divided by 6 MHz."  
 The OFDM channel is 192 MHz therefore this number is 32. This relationship should be more clearly stated.  
 SuggestedRemedy  
 Change the para to read: There are 32 CEA channel in the OFDM channel. If the unclear term "occupied" means something other than one would surmise using common language then the term should be clearly defined before using it.  
 Proposed Response Response Status O

CI 100 SC 100.2.3.1 P 40 L 17 # 1228  
 Remein, Duane Huawei Technologies  
 Comment Type T Comment Status X  
 And what pray tell is a "CEA channels"? Need definition.  
 SuggestedRemedy  
 Define this term.  
 Proposed Response Response Status O

CI 100 SC 100.2.3.1 P 40 L 28 # 1231  
 Remein, Duane Huawei Technologies  
 Comment Type E Comment Status X  
 The paragraphs starting with "For an OFDM channel there is a) the occupied bandwidth, b) the encompassed spectrum, c) ..." and ending with "and the modulated spectrum is 189.7 MHz - 9.4 MHz = 180.3 MHz." appear to be more introductory (i.e., defining terms and explaining what each means).  
 SuggestedRemedy  
 Move these paragraphs to a new Section 100.1.6 OFDM structure.  
 Proposed Response Response Status O

CI 100 SC 100.2.3.1.1 P 42 L 12 # 1359  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 As a simplification and option reduction exercise for the Task Force, remove all references to 8K FFT and 40 usec symbols and their use throughout the P802.3bn specification for FDD mode. Consider also for TDD mode.  
 SuggestedRemedy  
 Remove 8K FFT, including 40usec symbols and all dependencies from the P802.3bn specification for FDD (and possibly including TDD) operating mode(s).  
 Proposed Response Response Status O

CI 100 SC N/A P L # 1232  
 Remein, Duane Huawei Technologies  
 Comment Type T Comment Status X  
 In Clause 75.7.14 there is the concept of laser on/off times. This idea needs to be carried forward to CI 100 but expressed in terms of RF  
 SuggestedRemedy  
 Add placeholder text to 100.3.10 for Laseron/off times.  
 Proposed Response Response Status O

CI 101 SC 101.1.1 P 57 L 19 # 1235  
Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Comment 1113 (copied below) from Draft 0.2 not implemented  
CI 00 SC 0 P 3 L 11 # 1113  
Comment Type E  
Marked text not being used consistently throughout the draft. Some Editors use colored text, some green highlighting, some red highlighting with no apparent consistency.  
SuggestedRemedy  
Pick one scheme and use it consistently.  
Reccommend:  
Magenta text for links that require updating  
Yellow highlighting for text that may require other updates.  
ACCEPT.  
Applicable to all editors

SuggestedRemedy

Implement as agree by the TF

Proposed Response Response Status O

CI 101 SC 101.2.1 P 58 L 6 # 1234  
Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Comment 1113 (copied below) from Draft 0.2 not implemented  
CI 00 SC 0 P 3 L 11 # 1113  
Comment Type E  
Marked text not being used consistently throughout the draft. Some Editors use colored text, some green highlighting, some red highlighting with no apparent consistency.  
SuggestedRemedy  
Pick one scheme and use it consistently.  
Reccommend:  
Magenta text for links that require updating  
Yellow highlighting for text that may require other updates.  
ACCEPT.  
Applicable to all editors

SuggestedRemedy

Implement as agreed by the TF

Proposed Response Response Status O

CI 101 SC 101.3.1 P 63 L 11 # 1236  
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

The statement "The EPoC PCS is specified to support the operation of up to 10 Gb/s in the downstream direction and up to 10 Gb/s in the upstream direction ..." appears to be in jeopardy and could be construed as intentionally misleading as it is unlikely we will approach the 10 Gbps mark in either US or DS.

This comment also applies to Sub-CI 101.3.4 pg 68 ln 2

This comment also applies to Sub-CI 101.4 pg 94 ln 3

SuggestedRemedy

Replace "10 Gb/s" with "TDB Gb/s" in two places in this statement.

Proposed Response Response Status O

CI 101 SC 101.3.1 P 63 L 15 # 1238  
Remein, Duane Huawei Technologies

Comment Type T Comment Status X

CRC40 should be included in the overview

SuggestedRemedy

Change the sentence reading "The FEC mechanism increases the available link budget." to "The FEC mechanism increases the available link budget and includes a CRC40 to ensure that mean time to false frame acceptance objectives are met."

Proposed Response Response Status O

CI 101 SC 101.3.1.1 P 63 L 22 # 1237  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

I don't see how this statement has any basis in truth "The EPoC PCS extends the 10GBASE-PR PCS described in Clause 76 to support TDD and FDD mode of operation over the point-to-multipoint coaxial medium architecture."  
 This is hardly and extension of CI 76.

SuggestedRemedy

Change the sentence to read "The EPoC PCS supports TDD and FDD mode of operation of the EPON protocol defined elsewhere in this standard over a point-to-multipoint coaxial medium architecture."

Proposed Response Response Status O

CI 101 SC 101.3.2 P 63 L 35 # 1239  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

BQ had not context yet.

SuggestedRemedy

Add a linked cross reference to Table 101-6 such as "This value is computed as a function of the contents of the BQ 65-bit blocks (see Table 101-6), forming the payload portion of the FEC codeword.

Proposed Response Response Status O

CI 101 SC 101.3.3 P 64 L 42 # 1240  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Hopefully we can agree on using a single FEC code for the Downstream for both TDD and FDD.

SuggestedRemedy

Reword the first sentence in this para to:  
 "The CLT 10GBASE-XR PCS operating on CCDN shall encode the transmitted data using LDPC (16200, 14400) code per Table 101-6."

Proposed Response Response Status O

CI 101 SC 101.3.3 P 64 L 44 # 1241  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

The selection mechanism for US FEC code has not been determined.

SuggestedRemedy

Make the text "7, as selected using register TBD." in the last sentence in this para as tentative (Yellow highlighted).

Proposed Response Response Status O

CI 101 SC 101.3.4 P 68 L 30 # 1374  
 Laubach, Mark Broadcom

Comment Type ER Comment Status X

Two comments in figure: 1) "64B/66B" should reflect 65B in some manner so as to indicate this specification is doing 65B encoding/decoding, 2) "FEC encode" should be "FEC/CRC" to reflect addition of CRC-40.

SuggestedRemedy

Change the labels to "64B/66B/65B" and "FEC/CRC", respectively, or similar.

Proposed Response Response Status O

CI 101 SC 101.3.4 P 69 L 14 # 1375  
 Laubach, Mark Broadcom

Comment Type ER Comment Status X

Two comments in figure: 1) "64B/66B" should reflect 65B in some manner so as to indicate this specification is doing 65B encoding/decoding, 2) "FEC encode" should be "FEC/CRC" to reflect addition of CRC-40.

SuggestedRemedy

Change the labels to "64B/66B/65B" and "FEC/CRC", respectively, or similar.

Proposed Response Response Status O

Cl 101 SC 101.3.4.3.5 P 78 L 28 # 1242  
 Remein, Duane Huawei Technologies  
 Comment Type E Comment Status X  
 wording "... simplifies allows ...".  
 SuggestedRemedy  
 remove "allows"  
 Proposed Response Response Status O

Cl 101 SC 101.3.4.3.5 P 78 L 31 # 1243  
 Remein, Duane Huawei Technologies  
 Comment Type TR Comment Status X  
 Where did this come from?  
 "The Start of Burst delimiter is followed by the 65-bit long FEC Selector delimiter (burstFecSelector constant, see TBD), which identifies the specific FEC code used by the CNU to encode data in the given burst. The FEC Selector delimiter is not part of the first FEC codeword."  
 I don't recall ever discussing a "FEC Selector" in the TF  
 SuggestedRemedy  
 Mark the para preliminary (Yellow highlight)  
 Proposed Response Response Status O

Cl 101 SC 101.3.4.3.6 P 79 L 52 # 1244  
 Remein, Duane Huawei Technologies  
 Comment Type TR Comment Status X  
 The final statement is incorrect (at least so far as the TF has discussed)  
 "Only one of the FEC codes defined in Table 101-7 is active at any time, as selected by register TBD."  
 SuggestedRemedy  
 Strike the statement.  
 Proposed Response Response Status O

Cl 101 SC 101.3.5.1.3.2 P 87 L 2 # 1362  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 Add variable for CNU RX FEC codeword CRC success counter.  
 SuggestedRemedy  
 CNU\_RX\_FEC\_CodeWord\_Fail  
 TYPE: 32-bit unsigned integer  
 This variable is incremented for every datain codeword received with successful CRC-40.  
 Proposed Response Response Status O

Cl 101 SC 101.3.5.1.3.2 P 87 L 2 # 1363  
 Laubach, Mark Broadcom  
 Comment Type T Comment Status X  
 Add variable for CNU RX MAC frame counter, only if this counter is not already present somewhere else in the PHY.  
 SuggestedRemedy  
 CNU\_RX\_FEC\_MAC\_Frame\_Count  
 TYPE: 32-bit unsigned integer  
 This variable is incremented for every received 64B/66B/65B decoded block where the Sync Header indicates Terminate.  
 Proposed Response Response Status O

Cl 101 SC 101.3.5.1.3.2 P 87 L 2 # 1360  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 Add variable for CNU RX FEC codeword counter.  
 SuggestedRemedy  
 CNU\_RX\_FEC\_CodeWord\_Count  
 TYPE: 32-bit unsigned integer  
 This variable is incremented for every datain codeword received.  
 Proposed Response Response Status O

Cl 101 SC 101.3.5.1.3.2 P 87 L 2 # 1361  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 Add variable for CNU RX FEC codeword CRC failed counter.  
 SuggestedRemedy  
 CNU\_RX\_FEC\_CodeWord\_Fail  
 TYPE: 32-bit unsigned integer  
 This variable is incremented for every datain codeword received with failed CRC-40.  
 Proposed Response Response Status O

Cl 101 SC 101.3.5.1.3.5 P 88 L 38 # 1365  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 Add codeword failed counter increment to block.  
 SuggestedRemedy  
 In DECODE\_FAILED add:  
 CNU\_RX\_FEC\_CodeWord\_Fail++  
 Proposed Response Response Status O

Cl 101 SC 101.3.5.1.3.5 P 88 L 31 # 1364  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 Add codeword counter increment to block.  
 SuggestedRemedy  
 In DECODE\_CALCULATE\_CRC40 add:  
 CNU\_RX\_FEC\_CodeWord\_Count++  
 Proposed Response Response Status O

Cl 101 SC 101.3.5.1.3.5 P 88 L 43 # 1367  
 Laubach, Mark Broadcom  
 Comment Type T Comment Status X  
 Add PHY MAC Frame counter, if not counted elsewhere.  
 SuggestedRemedy  
 In SEND\_DATA\_OUT, add the following or similar:  
 If Sync\_Header( tx\_coded<65:0> ) == Terminate; then  
 CNU\_RX\_FEC\_MAC\_Frame\_Count++  
 Proposed Response Response Status O

Cl 101 SC 101.3.5.1.3.5 P 88 L 38 # 1366  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 Add codeword success counter increment to block.  
 SuggestedRemedy  
 In DECODE\_SUCEESS add:  
 CNU\_RX\_FEC\_CodeWord\_Sucess++  
 Proposed Response Response Status O

Cl 101 SC 101.4 P 94 L 46 # 1250  
 Remein, Duane Huawei Technologies  
 Comment Type E Comment Status X  
 Errant figure number.  
 SuggestedRemedy  
 Figure titled "Figure 101-1—EPoC PCS functional block diagram, downstream path for TDD mode" should be figure 101-15. Renumber and check subsequent figure number in clause.  
 Proposed Response Response Status O

CI 101 SC 101.4.1 P95 L 33 # 1246  
 Remein, Duane Huawei Technologies  
 Comment Type T Comment Status X  
 Text for TDD PCS Overview sub-clause  
 SuggestedRemedy  
 Insert the following:  
 "The TDD PCS layer is identical to the FDD PCS layer with the following exceptions:  
 - The TDD CLT downstream PCS includes a Data Detector process, similar to that found in the FDD PCS described in 101.3.4.3.1, with exceptions as noted in 101.4.2.4.  
 - The TDD CLT downstream PCS includes the PMA\_SIGNAL.request as described for the CNU upstream PCS.  
 Proposed Response Response Status O

CI 101 SC 101.4.2.1 P95 L 37 # 1247  
 Remein, Duane Huawei Technologies  
 Comment Type T Comment Status X  
 Text for 101.4.2.1 Idle control character deletion process  
 SuggestedRemedy  
 Insert the following:  
 The Idle control character deletion process for FDD is identical to that for the FDD PCS described in 101.3.4.1  
 Proposed Response Response Status O

CI 101 SC 101.4.2.2 P95 L 39 # 1248  
 Remein, Duane Huawei Technologies  
 Comment Type T Comment Status X  
 Text for 101.4.2.2 64B/66B Encode  
 SuggestedRemedy  
 Insert the following:  
 The 64B/66B Encode for TDD is identical to that described for the FDD PCS described in 101.3.4.2  
 Proposed Response Response Status O

CI 101 SC 101.4.2.3 P95 L 40 # 1245  
 Remein, Duane Huawei Technologies  
 Comment Type E Comment Status X  
 Certainly we don't need another sub-clause describing 64B/66B Encode  
 SuggestedRemedy  
 Strike 101.4.2.3 64B/66B Encode  
 Proposed Response Response Status O

CI 101 SC 101.4.2.4 P95 L 43 # 1249  
 Remein, Duane Huawei Technologies  
 Comment Type T Comment Status X  
 Text for 101.4.2.5 FEC Encode and Data Detector process  
 SuggestedRemedy  
 Insert the following:  
 The FEC Encode and Data Detector process for TDD is identical to that described for the FDD PCS described in 101.3.4.3 with the following exceptions.  
 The downstream data detector for TDD mode includes the PMA\_SIGNAL.request output as described in 101.3.4.3.5 but, in the TDD downstream case, this signal is only turned OFF at the conclusion of the configured TDD\_DS\_frame time period.  
 Proposed Response Response Status O

CI 101 SC 101.5.1 P99 L 11 # 1298  
 Montreuil, Leo Broadcom  
 Comment Type TR Comment Status X  
 There are two type of signaling for the BM, a ternary signaling and a two level BPSK signal. Why do we need two type of signaling?  
 SuggestedRemedy  
 Should we drop one scheme?  
 Proposed Response Response Status O

CI 101 SC 101.5.1 P 99 L 3 # 1368  
 Laubach, Mark Broadcom

Comment Type ER Comment Status X

Header says "Intro" but jumps right into Burst Marker description. This is assumed to be by position an Introduction to the PMA, not a sub-functions.

SuggestedRemedy

Fix to provide separate intro, subsections, etc. Following block functions from PHY Path Diagram, etc.

Proposed Response Response Status O

CI 101 SC 101.5.1 P 99 L 5 # 1292  
 Montreuil, Leo Broadcom

Comment Type TR Comment Status X

Burst Markers (BM) are used to indicate Start and End of burst. How do we differentiate between Start and End? There are 4 profiles for BM but none specific for Start and End of burst.

SuggestedRemedy

Have specific BM for Start and End.

Proposed Response Response Status O

CI 101 SC 101.5.1 P 99 L 5 # 1369  
 Laubach, Mark Broadcom

Comment Type ER Comment Status X

While this is a good starting point for Burst Markers, it is premature given that Task Force has not made any technical decisions on the foundation architecture in which Burst Markers need to operate: Resource Block architecture, 1D-to-2D mapping, pilot distribution/insertion algorithm, interleaving, use of guard bands, etc.

SuggestedRemedy

Add and Editor's Note stating that the section on Burst Markers is a preliminary start and will be updated pending further Task Force decisions on: Resource Block architecture, 1D-to-2D mapping, pilot distribution/insertion algorithm, interleaving, use of guard bands, etc.

Proposed Response Response Status O

CI 101 SC 101.5.4 P 100 L 1 # 1295  
 Montreuil, Leo Broadcom

Comment Type TR Comment Status X

It is stated that the BM elements are interleaved with the data and Table 101-11 a mapping. If there is data, there are pilots. The upstream pilot structure and RB has not been decided. What do we do when a BM element fall into a pilot location?

SuggestedRemedy

Pilot locations are usually fixed and cannot be moved. We need a mapping that takes into account the pilot location. It is premature to decide on a mapping as the RB and pilot structure has not been decided.

Proposed Response Response Status W

Also applies to 101.5.5

CI 101 SC 101.5.4 P 99 L 40 # 1294  
 Montreuil, Leo Broadcom

Comment Type TR Comment Status X

If the BM size is larger than the RB, do we truncate the BM? Or span it across multiple RB? What is the rule?

SuggestedRemedy

Proposed Response Response Status O

CI 101 SC 101.5.4 P 99 L 40 # 1293  
 Montreuil, Leo Broadcom

Comment Type TR Comment Status X

It is premature to decide on BM mapping scheme as the time 1-D to OFDMA 2-D mapping has not been decided. Except for 1, 4 or 8 subcarriers, the Resource Block (RB) size has not been decided. Simulations have uncovered poor cross-correlation for some sequence alignment.

SuggestedRemedy

The BM ternary signaling scheme is a good idea and differentiates it from the data stream. We want to revisit the sequences and mapping when the RB size and 1-D to 2-D has been decided.

Proposed Response Response Status O



CI 101 SC 101.5.4 P 99 L 41 # 1370  
 Laubach, Mark Broadcom

Comment Type T Comment Status X

Based on previous TF decision in pietsch\_3bn\_01\_0513.pdf, resource block architecture will consist of N-subcarriers x M-symbols (frame width) that forms a frame. Within the frame, there will be other elements, a known pilot patterns all part of OFDM processing and then data. Burst Markers as presented as another form of modulated data (non an OFDM processing element and the modulation rate may be different than the data; e.g. ternary) that do not displace pilots or the other elements. The wording seems to indicate that burst markers may displace more than data, which doesn't seem consistent.

SuggestedRemedy

Recommend clarity and consistency with pietsch\_3bn\_01\_0513.pdf

Proposed Response Response Status O

CI 101 SC 101.5.5 P 100 L 1 # 1372  
 Laubach, Mark Broadcom

Comment Type ER Comment Status X

In Table 101-11, the arrows on "OFDM Symbols" and "subcarriers" that was in rahman\_syed\_3bn\_01\_1113.pdf are missing from the Table.

SuggestedRemedy

Add the arrows or enumerate the X and Y axis that this table represents.

Proposed Response Response Status O

CI 101 SC 101.5.5 P 100 L 23 # 1296  
 Montreuil, Leo Broadcom

Comment Type TR Comment Status X

It is mentioned that there are four sequences for four profiles. Do we need profiles? If yes, how many profiles do we need?

SuggestedRemedy

We need to decide how many profile we need first. Second, we need to decide how to signal the multiple profiles. There are alternate ways to signal the profile. For example, we could have two unique Nulls patterns, one for Start and another one for End. The multiple profiles could be indicated by the non-nulls BPSK symbols. To improve robustness, the Nulls pattern could be optimized as a 2-D pattern instead of a 1-D pattern (note: RBs are 2-D).

Proposed Response Response Status O

CI 101 SC 101.5.5 P 100 L 31 # 1373  
 Laubach, Mark Broadcom

Comment Type ER Comment Status X

The text in lines 31 through 44 were not present in rahman\_syed\_3bn\_01\_1113.pdf and therefore not approved by the Task Force. Why are they present in the draft?

SuggestedRemedy

Remove this unapproved text from the draft.

Proposed Response Response Status O

CI 101 SC 101.5.5 P 100 L 37 # 1299  
 Montreuil, Leo Broadcom

Comment Type TR Comment Status X

The ratio of Nulls (N) to non-nulls (P) is 1/4. Simulations show that at low SNR the robustness is limited by the false detection rate.

SuggestedRemedy

N/P = 1/2 appears to be optimal for the ternary sequence. Two sequences with N/P = 1/2 could be designed for Start and End marker. The profiles could be encoded in the P elements of BM.

Proposed Response Response Status O

CI 101 SC 101.5.5 P 99 L 52 # 1297  
 Montreuil, Leo Broadcom

Comment Type TR Comment Status X

Simulations indicate that BM sequences are optimized for the BM preceded and followed immediately by the OFDMA data stream. Because of the granularity of the RB and the 1-D to 2-D mapping, it is likely that we need to schedule idle time between OFDMA burst from different CNU.

SuggestedRemedy

We may need to design sequences that exploit the silence between burst to improve robustness and decrease the overhead.

Proposed Response Response Status O

**Cl 101**    **SC 101.5.5**                      **P 99**            **L 53**            # 1371  
 Laubach, Mark                              Broadcom

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

Does "Gold Sequence" needs some a reference or is it sufficiently well understood in the art?

**SuggestedRemedy**  
 Add reference if necessary.

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

**Cl 102**    **SC 102**                              **P 107**            **L 1**            # 1252  
 Remein, Duane                              Huawei Technologies

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

This clause does not follow the text mark-up conventions described in front matter.

**SuggestedRemedy**  
 Use prescribed mark-up.

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

**Cl 102**    **SC 102.1.1**                      **P 107**            **L 22**            # 1253  
 Remein, Duane                              Huawei Technologies

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

Missing Figure reference

**SuggestedRemedy**  
 Add figure reference to Figure 102-1

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

**Cl 102**    **SC 102.1.1**                      **P 108**            **L 6**            # 1254  
 Remein, Duane                              Huawei Technologies

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

If we adopt a fixed frame length for DS & US PHY Link in FDD then the following statement is extraneous and should be replaced.  
 "When operating in FDD mode, the PHY Link frame shall be longer than the one way transit time, including all PHY delays, to the logically most distant CNU in the network."

**SuggestedRemedy**  
 Replace with:  
 "When operating in FDD mode PHY Link frame shall be fix; the downstream length is 128 symbols long and the upstream length is TBD symbols long. This fixes the distance to the most distant CNU in the network to the greater of 128 or TDB symbol times."

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

**Cl 102**    **SC 102.2.1**                      **P 108**            **L 39**            # 1255  
 Remein, Duane                              Huawei Technologies

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

Editors note can be removed

**SuggestedRemedy**  
 remove note

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

Cl 102 SC 102.2.1.1 P 108 L 47 # 1256  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Run-on sentence (poorly worded at best:  
 "The allocated spectrum shall reside anywhere within a 24 MHz contiguous OFDM/OFDMA channel spectrum (i.e., 24 Mhz with no internal exclusion bands) and have at least 3 MHz of contiguous spectrum above and below it for a total band of 6 MHz, which includes eight pilot tone subcarriers placed symmetrically above and below the information sub-carriers."

note misspelled MHz

SuggestedRemedy

Change to:  
 "The allocated spectrum shall reside anywhere within a 24 MHz contiguous OFDM/OFDMA channel spectrum (i.e., 24 MHz with no internal exclusion bands) and have at least 3 MHz of contiguous spectrum above and below it for a total band of 6 MHz. This Phy Link band also includes eight pilot tone subcarriers placed symmetrically above and below the information sub-carriers."

Proposed Response Response Status O

Cl 102 SC 102.2.1.1 P 108 L 48 # 1257  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

What?  
 "No additional pilot tones area allowed within this 6 MHz band(see ref)"

SuggestedRemedy

change to "No additional pilot tones are allowed within this 6 MHz band (see ref)"

Proposed Response Response Status O

Cl 102 SC 102.2.2 P 109 L 34 # 1259  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Stray "PLC"

SuggestedRemedy

Replace with "PHY Link"

Proposed Response Response Status O

Cl 102 SC 102.2.2 P 110 L 1 # 1260  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Tables 102-1 and 102-2 are for DS only.

SuggestedRemedy

Add "DS" to table titles.

Proposed Response Response Status O

Cl 102 SC 102.2.3 P 109 L 48 # 1261  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Let's fix the timestamp size at 32 bits

SuggestedRemedy

Change "TBD(16-32)" to "32" here (pg 106 ln 48) and at pg 111 ln 30.

Proposed Response Response Status O

Cl 102 SC 102.2.3.1 P 111 L 1 # 1265  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

LDPC codes contain no positive indication that the encoded data is in error. A CRC should be added to the PHY Link to ensure the CNU Phy does not operate on errored PHY Link data.  
 Options include CRC8 (already part of EPON), CRC24-D (part of DOCSIS 3.1) or something new and different.  
 MULPI 3.1 uses a CRC24-D on their timestamp and one each on other message blocks but no CRC on the actual message (I believe this is formatted as a normal frame and therefore already has a CRC).

SuggestedRemedy

Restructure PHY Link frame as shown in remein\_3bn\_02\_0114.pdf slides 6, 7 & 8.

Proposed Response Response Status O

CI 102 SC 102.2.3.1 P 111 L 13 # 1262  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

I believe we've agreed on a CNU ID although we may need to agree on how big this field is. Surely 1024 CNU's is sufficient (10b field).

This comment also applied to US SD field (CI 102.3.4.1, pg 114 ln 33).

SuggestedRemedy

Change:  
 "TBD {48, 11, 10}" to "10"  
 "... address.{if we decide to use MAC Address for this field state so here, if not include and reference a table of Unicast/Broadcast values as illustrated below }" to "... address(see Table 102-3)." (active reference)  
 "{assigned / MAC}" to "assigned"

On pg 114 ln 33 Change:  
 "TBD {48, 11, 10}" to "10"  
 At the conclusion of the sentence add active reference "(see Table 102-3)"

Proposed Response Response Status O

CI 102 SC 102.2.3.1 P 111 L 30 # 1263  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Timestamp structure:  
 Total of 32 bits  
 bits 3:0 clocked at 16\*204.8 Mhz (phase)  
 bits 9:4 clocked at 204.8 Mhz and roll over to zero after reaching a value of 20 to produce a 10.24 MHz clock.  
 bits 32:10 clocked from the 10.24 MHz clock.

SuggestedRemedy

Change the second sentence of the para starting "The PHY Timestamp is a ..." from "The counter is clocked from the {204.8 MHz} OFDM clock."  
 To:  
 "The 32 bit timestamp is composed of three fields. The first field is composed of bits 3:0 and is clocked at a rate of 16 x 204.8 MHz (or 3.2768 GHz). The second field is composed of bits 9:4 and is clocked from 204.8 MHz; this field rolls over to zero after reaching a value of 20 to produce a 10.24 MHz clock. The final field, composed of bits 31:10, is clocked from the 10.24 MHz clock."

Proposed Response Response Status O

CI 102 SC 102.2.3.1 P 112 L 6 # 1264  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Missing Table reference at first and figure reference at the end of the following sentence:  
 "summarizes the use and meaning of the PHY Config ID bits and their operation is illustrated in ."

SuggestedRemedy

Add "Table 102-4 " to beginning and " Figure 102-5" finally.

Proposed Response Response Status O

CI 102 SC 102.2.3.2 P 112 L 54 # 1266  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

The "command sub-field" concept has been removed, this sentence is incorrect.

SuggestedRemedy

Change sentence from:  
 "The CLT shall only transmit the valid values of the command sub-field as given in Table 3."  
 To:  
 "The CLT shall only transmit the valid values of the PHY Instruction fields as given in Table 102-3, Table 102-4 and Table 102-5."

Proposed Response Response Status O

CI 102 SC 102.2.3.2 P 113 L 31 # 1267  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

This section is only describes DS PHY Instructions. In a read instruction there are no 16 bit Data fields so the sentence is incorrect:  
 "The 16 bit Data fields contain the data values to be written in or read from consecutive MDIO registers starting ..."

SuggestedRemedy

Change to read:  
 "The 16 bit Data fields contain the data values to be written in consecutive MDIO registers starting ..."

Proposed Response Response Status O

Cl 102 SC 102.2.4 P 113 L 42 # 1268  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

The list of items included in a PHY Discovery window should probably include the Discovery Window Start time.  
 Discovery Window Duration should not be Write/Verify (B'cast address)

SuggestedRemedy  
 Add between Discovery Preamble and CNU MAC Address the following line:  
 Write Discovery Window Start time

Change "Write/Verify" to "Write" before Discovery Window duration

Proposed Response Response Status O

Cl 102 SC 102.2.4 P 113 L 48 # 1269  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

the word "shall" should not be in italics

SuggestedRemedy  
 Change to normal font.

Proposed Response Response Status O

Cl 102 SC 102.2.4 P 113 L 51 # 1270  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

The requirement for CNU quiet time seems a bit misplaced. Really this is totally dependent on the PHY Discovery window and does not need this one way travel time requirement.

SuggestedRemedy  
 Reword the para as follows:  
 "Once the PHY Discovery window is open the CLT shall refrain from sending PHY Instructions to any single CNU over the DS PHY Link, which would elicit a Response (i.e., read and write/.verify instructions)from the CNU for the duration of the PHY Discovery window, to allow sufficient time for joining CNUs to respond."

Proposed Response Response Status O

Cl 102 SC 102.3.1 P 114 L 10 # 1271  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Editors Note can be removed.

SuggestedRemedy  
 remove note.

Proposed Response Response Status O

Cl 102 SC 102.3.2 P 114 L 15 # 1258  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

By now we should be able to adopt the following parameters for the US PHY-Link:  
 number of sub-carriers for information = 32/16  
 total bandwidth = 800 kHz

SuggestedRemedy  
 Change sentence from:  
 "In the US direction the PHY Link shall be allocated TBD kHz of spectrum for information." To  
 "In the US direction the PHY Link shall be allocated 800 kHz of spectrum for information (see Figure 102-3)."

Modify Fig 102-3 to indicate "(400kHz DS, 800kHz US)"

Proposed Response Response Status O

CI 102 SC 102.3.4.2 P 114 L 42 # 1273  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X  
 Should split the Opcode field into OPCODE and Count fields as was done in DS direction..

SuggestedRemedy  
 Pg 114 In 41 Change: "Each Response contains an OPCODE, an MDIO Address and up to 31 data fields."  
 To: "Each Response contains an OPCODE, a Data Count, an MDIO Address and up to 31 data fields."

Pg 114 Ln 45 Change: "The PHY Response OPCODE is an 8 bit field separated into two sub-fields; the Acknowledgement sub-field and the Data Count sub-field. The Acknowledgement sub-field is a 3 bit value that conveys the type of PHY Instruction to which the CNU is responding and the success or failure of the PHY Instruction Command. CNU's shall use the valid values of the Acknowledgement sub-field are given in ."  
 To: "The PHY Response OPCODE is an 3 bit 3 bit value that conveys the acknowledge type for PHY Instruction to which the CNU is responding and the success or failure of the PHY Instruction Command. CNU's shall use the valid values of the acknowledgement type are given in Table 102-6." (live link).

Proposed Response Response Status O

CI 102 SC 102.3.4.2 P 114 L 54 # 1272  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X  
 Make fields set to zero on Nack a requirement.

SuggestedRemedy  
 Pg 114 In 54 Change "should {shall?}" to "shall"  
 Pg 115 In 39 Change "should {shall?}" to "shall"

Proposed Response Response Status O

CI 102 SC 102.3.5 P 115 L 44 # 1274  
 Remein, Duane Huawei Technologies

Comment Type ER Comment Status X  
 Should be \_PHY\_ Discovery not just Discovery

SuggestedRemedy  
 In CL 102 globally replace "XXX Discovery" with "PHY Discovery" anywhere that "XXX " does not equal "PHY ".

Proposed Response Response Status O

CI 102 SC 102.3.5 P 115 L 46 # 1276  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X  
 Editorial clean-up

SuggestedRemedy  
 Remove the following: "{if we decide to use the MAC address instead of an ONU ID can set this to MAC address}"  
 "{assumes using CNU\_ID, if not combine 2nd &4thd bullets to read "the SA field is set to the CNU's MAC address}"

Proposed Response Response Status O

CI 102 SC 102.3.5 P 115 L 49 # 1275  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X  
 Let's fix the size of the local clock to 32 bits to align with the DS Timestamp.

SuggestedRemedy  
 Change: "the a TDB {16-32} bit local clock of the CNU"  
 To: "the a 32 bit local clock of the CNU"

Proposed Response Response Status O

**Cl 102 SC 102.3.6 P 116 L 1 # 1277**  
 Remein, Duane Huawei Technologies  
*Comment Type* T *Comment Status* X  
 Isn't it reasonable to use the same FEC in the US PHY-Link as the DS-PHY-Link?  
*SuggestedRemedy*  
 Remove this section (102.3.6) and move section 102.2.6 to a common section 102.2 Common PHY-Link (that covers both US & DS). Renumber existing sub-clauses.  
*Proposed Response* *Response Status* O

**Cl 102 SC 102.4 P 117 L 24 # 1279**  
 Remein, Duane Huawei Technologies  
*Comment Type* T *Comment Status* X  
 Table missing title  
*SuggestedRemedy*  
 Add title "Required parameters for PHY Discovery Response and Link-Up"  
*Proposed Response* *Response Status* O

**Cl 102 SC 102.4 P 117 L 10 # 1281**  
 Remein, Duane Huawei Technologies  
*Comment Type* T *Comment Status* X  
 IEEE typically doesn't use "must". Also missing table ref (ln 13)  
*SuggestedRemedy*  
 Change: "Before declaring a CNU is in the link-up state the CLT must ensure that a ... "  
 To: "Before declaring a CNU is in the link-up state the CLT shall ensure that a "  
 Add table Ref to Table 102-7 to end of the sentence.  
*Proposed Response* *Response Status* O

**Cl 102 SC 102.4 P 117 L 24 # 1278**  
 Remein, Duane Huawei Technologies  
*Comment Type* T *Comment Status* X  
 Add RF On Time and RF Off Time to Table 102-7  
*SuggestedRemedy*  
 Add to table 102-7  
 "RF On Time | TBD | (blank) | Y"  
 "RF Off Time | TBD | (blank) | Y"  
 (listed as: Parameter | MDIO Reg, | PHY Discovery | Link-Up )  
*Proposed Response* *Response Status* O

**Cl 102 SC 102.4 P 117 L 19 # 1282**  
 Remein, Duane Huawei Technologies  
*Comment Type* E *Comment Status* X  
 Missing Figure Ref  
*SuggestedRemedy*  
 Change "The PHY Discovery message exchange is illustrated in ."  
 To: "The PHY Discovery message exchange is illustrated in Figure 102-6."  
*Proposed Response* *Response Status* O

**Cl 102 SC 102.4 P 117 L 8 # 1280**  
 Remein, Duane Huawei Technologies  
*Comment Type* E *Comment Status* X  
 Can update reference for probing  
*SuggestedRemedy*  
 Ref section 102.5 Upstream wide band probing.  
*Proposed Response* *Response Status* O

CI 102 SC 102.4 P 118 L 37 # 1251  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Discovery can fail because:  
 1) the CNU cannot use the DS Profile

SuggestedRemedy

Add the following text at the end of CI 102.4  
 "In some instances the CNU may fail to achieve link-up status. This may happen for a number of reasons; for example the CNU may be unable to support the DS or US Profile due to network conditions. In these circumstances the CLT may take mitigating action outside the scope of this standard and attempt to bring up the CNU at a later time."

Proposed Response Response Status O

CI 102 SC 102.4 P 118 L 39 # 1283  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Change note in braces to Editors Note

SuggestedRemedy

Change to proper format.

Proposed Response Response Status O

CI 102 SC 103.3.3.1 P 157 L 31 # 1284  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

There are 5 references to "75.7.14" in the clause. This sub-clause speaks about laser on/off times which is not applicable to EPoC. The topic of RF on/off times needs to be addressed in CI 100 and the 5 references in CI 103 need to point to that material. The changes to CI 100 are addressed in another comment.

SuggestedRemedy

Change "75.7.14" to "100.x.y" in 5 places

Proposed Response Response Status O

CI 102 SC 2.3.1.1 Table 100-1 P 42 L # 1303  
 Leo, Montreuil Broadcom

Comment Type TR Comment Status X

I could not find in the document a list of Cyclic Prefix for downstream. There are 5 CP: 0.9375  $\mu$ s (192 \* Ts), 1.25  $\mu$ s (256 \* Ts), 2.5  $\mu$ s (512 \* Ts), 3.75  $\mu$ s (768 \* Ts) and 5  $\mu$ s (1024 \* Ts).

SuggestedRemedy

Add CP to the spec. To simplify the standard, should the 0.9375 us and the 5 us removed?

Proposed Response Response Status O

CI 102 SC 2.3.1.1 Table 100-1 P 42 L # 1304  
 Leo, Montreuil Broadcom

Comment Type TR Comment Status X

I could not find in the document a list of OFDM windows for downstream. There are 5 OFDM Window: 0  $\mu$ s (0 \* Ts), 0.15625  $\mu$ s (32 \* Ts), 0.3125  $\mu$ s (64 \* Ts), 0.625  $\mu$ s (128 \* Ts), 0.9375  $\mu$ s (192 \* Ts) and 1.25  $\mu$ s (256 \* Ts).

SuggestedRemedy

Add the OFDM window to the spec. Recommend removing the 0.15625 us window as it is not useful and too close to the 0 us case already in the table. Note: The 0.15625 us window is only in the downstream, not in the upstream.

Proposed Response Response Status O

CI 102 SC 2.3.1.1 Table 100-1 P 42 L # 1306  
 Leo, Montreuil Broadcom

Comment Type TR Comment Status X

I could not find in the document a list of OFDM Window for downstream. There are 8 OFDM window that have been approved: 0  $\mu$ s (0 \* Ts), 0.3125  $\mu$ s (64 \* Ts), 0.625  $\mu$ s (128 \* Ts), 0.9375  $\mu$ s (192 \* Ts), 1.25  $\mu$ s (256 \* Ts), 1.5625  $\mu$ s (320 \* Ts), 1.875  $\mu$ s (384 \* Ts) and 2.1875  $\mu$ s (448 \* Ts).

SuggestedRemedy

Add the OFDM windows to the spec. Recommend removing the 0.15625 us window as it is not useful and too close to the 0 us case already in the table. I also recommend reducing the number of windows and make it the same as downstream by removing the 1.5625  $\mu$ s (320 \* Ts), 1.875  $\mu$ s (384 \* Ts) and 2.1875  $\mu$ s (448 \* Ts).

Proposed Response Response Status O



**Cl 102** SC 2.3.1.1 Table 100-1 P 42 L # 1305  
 Leo, Montreuil Broadcom  
**Comment Type** TR **Comment Status** X  
 I could not find in the document a list of Cyclic Prefix for upstream. There are 16 CP that have been approved (to many to list here).  
**SuggestedRemedy**  
 Add CP to the spec. There are too many options for CP size. It is not useful and add complexity. I recommend reducing the options to: 0.9375  $\mu$ s (192 \*Ts), 1.25  $\mu$ s (256 \*Ts), 1.5625  $\mu$ s (320 \*Ts), 1.875  $\mu$ s (384 \*Ts), 2.1875  $\mu$ s (448 \*Ts), 2.5  $\mu$ s (512 \*Ts), 2.8125  $\mu$ s (576 \*Ts), 3.125  $\mu$ s (640 \*Ts), 3.75  $\mu$ s (768 \*Ts) and 5.0  $\mu$ s (1024 \*Ts).  
**Proposed Response** **Response Status** O

**Cl 102** SC 2.3.1.1 Table 100-1 P 42 L 1415 # 1301  
 Leo, Montreuil Broadcom  
**Comment Type** TR **Comment Status** X  
 The max number of subcarriers is not needed. What is important is the number of active subcarriers on line 17 and 18.  
**SuggestedRemedy**  
 Remove "Maximum Number of Subcarriers per FFT" from table 100-1.  
**Proposed Response** **Response Status** O

**Cl 102** SC 2.3.1.1 Table 100-1 P 42 L 1718 # 1302  
 Leo, Montreuil Broadcom  
**Comment Type** TR **Comment Status** X  
 The "Number of Data Subcarriers per FFT" is 3801 and 7601. There is problems of scalability when multiple OFDM blocks are used next to each other. Two blocks of 4K FFT is 7602 subcarriers.  
**SuggestedRemedy**  
 To solve this problem, I recommend setting the max to 3800 and 7600.  
 Note: If the 8K FFT is removed from spec, it will be 3800 for this item.  
**Proposed Response** **Response Status** O

**Cl 102** SC 2.3.1.1 Table 100-1 P 42 L 715 # 1300  
 Leo, Montreuil Broadcom  
**Comment Type** TR **Comment Status** X  
 The 25 KHz carrier spacing has large latency while providing minimal gain in throughput.  
**SuggestedRemedy**  
 Recommend removing the 25 KHz subcarrier spacing (8K FFT) for both downstream and upstream. We should instead focus on the 4K FFT.  
**Proposed Response** **Response Status** O

**Cl 103** SC 103 P 127 L 1 # 1376  
 Laubach, Mark Broadcom  
**Comment Type** ER **Comment Status** X  
 There is no real evident markup on this clause following page 19 Lines 26 through 40. Also, make sure all changes are viewable via a black and white printer, following IEEE practice.  
**SuggestedRemedy**  
 Fix this entire clause to show markup.  
**Proposed Response** **Response Status** O

**Cl 103** SC 103.1 P 127 L 35 # 1377  
 Laubach, Mark Broadcom  
**Comment Type** E **Comment Status** X  
 Somewhere in here, lines 35-49 or more need to summarize use of active and passive spectrum for FDD and TDD.  
**SuggestedRemedy**  
 Add some informative text to explain active vs passive media and spectrum, and use for FDD and TDD modes.  
**Proposed Response** **Response Status** O

Cl 103 SC 103.1 P 127 L 46 # 1378  
Laubach, Mark Broadcom

Comment Type ER Comment Status X

"This clause does not deal with" raises two comments 1) is there a clause that does deal with this, then provided references, and/or 2) perhaps it is mean to say indicate that the topics are outside the scope of this specification.

SuggestedRemedy

Replace the jargon "deal with" and provide references if necessary.

Proposed Response Response Status O

Cl 103 SC 103.1 P 128 L 40 # 1379  
Laubach, Mark Broadcom

Comment Type ER Comment Status X

Figure 103-2. There is a gray region to the right of the "US Transmitter ON". There is no label for this region or the same one to the far left.

SuggestedRemedy

Remove these regions from the figure or label them, conforming to description in the text. Add informative text as needed.

Proposed Response Response Status O

Cl 103 SC 103.1.1 P 129 L 13 # 1381  
Laubach, Mark Broadcom

Comment Type ER Comment Status X

f) which timestamp is this? Is this the MPCP timestamp or other 32-bit timestamp in the system?

SuggestedRemedy

Qualify/describe which timestamp this is in just this bullet.

Proposed Response Response Status O

Cl 103 SC 103.1.1 P 129 L 9 # 1380  
Laubach, Mark Broadcom

Comment Type TR Comment Status X

c) implies only one LLID per CNU, which appears then to be a restrictive statement.

SuggestedRemedy

Support one or more LLIDs per CNU

Proposed Response Response Status O

Cl 103 SC 103.1.2 P 131 L 7 # 1287  
Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Clause numbering change from 102 to 103 didn't make it into figure 103-3

SuggestedRemedy

Change references to CL 102 to 103 in both figures. Where possible make references live.

Proposed Response Response Status O

CI 103 SC 103.2.2.1 P 139 L 31 # 1285  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Comment 1091 against Draft 0.2 not implemented properly.

CI 00 SC 102.3.2.4 P 106 L 45 # 1091

Comment Type T

Why do we need to redefine "unit of time\_quanta" again ? It's already defined as a constant in 64.2.2.1.

SuggestedRemedy

Recommend referencing all constants to the original text specified in 802.3. Only new constants should have references in Clause 102. We should look at all constants, timers, messages, state diagrams where we are essentially defining (re-defining) the same constant, timer, message, state diagram, etc.

ACCEPT.

Reassigned to from Clause 102 to Clause "00" (applicable to entire draft ).

SuggestedRemedy

Replace the following definitions with xref's

The Editor should add a note to other parameter definitions which may be defined in existing std but are likely to change.

Pg 139 Ln 31; MAC\_Control\_type - This variable is defined in 64.2.2.1

Pg 140 Ln 5; localTime - This variable is defined in 64.2.2.2.

Pg 140 Ln 31; data\_rx - This variable is defined in 64.2.2.3.

Pg 140 Ln 36; data\_tx - This variable is defined in 64.2.2.3.

Pg 140 Ln 42; grantStart - This variable is defined in 77.2.2.3.

Pg 140 Ln 49; newRTT - This variable is defined in 64.2.2.3.

Pg 140 Ln 54; m\_sdu\_rx - This variable is defined in 77.2.2.3

Pg 141 Ln 4; m\_sdu\_tx - This variable is defined in 77.2.2.3

Pg 141 Ln 8; m\_sdu\_ctl - This variable is defined in 77.2.2.3

Pg 141 Ln 25; opcode\_rx - This variable is defined in 64.2.2.3.

Pg 141 Ln 25; opcode\_tx - This variable is defined in 64.2.2.3.

Pg 141 Ln 44; stopTime - This variable is defined in 64.2.2.3.

Pg 141 Ln 48; timestamp - This variable is defined in 64.2.2.3.

Pg 141 Ln 53; timestampDrift - This variable is defined in 64.2.2.3.

Pg 142 Ln 4; tqOffset - This variable is defined in 77.2.2.3

Pg 142 Ln 9; transmitAllowed - This variable is defined in 64.2.2.3.

Pg 142 Ln 17; transmitEnable - This variable is defined in 64.2.2.3.

Pg 142 Ln 24; transmitInProgress - This variable is defined in 64.2.2.3.

Pg 142 Ln 30; transmitPending - This variable is defined in 64.2.2.3.

Pg 144 Ln 29; transmissionPending() - This function is defined in 64.2.2.4.

Pg 145 Ln 3; packet\_initiate\_timer - This timer is defined in 64.2.2.5.

Pg 157 Ln 49; data\_rx - This variable is defined in 64.2.2.3.

Pg 157 Ln 51; data\_tx - This variable is defined in 64.2.2.3.

Pg 158 Ln 8; - insideDiscoveryWindow - This variable is defined in 64.3.3.2.

Pg 158 Ln 25; localTime - This variable is defined in 64.2.2.2.

Pg 158 Ln 28; m\_sdu\_ctl - This variable is defined in 77.2.2.3

Pg 158 Ln 30; opcode\_rx - This variable is defined in 64.2.2.3.

Pg 158 Ln 38; registered - This variable is defined in 64.3.3.2.

Pg 159 Ln 3; timestampDrift - This variable is defined in 64.2.2.3.

Pg 159 Ln 13; discovery\_window\_size\_timer - This timer is defined in 64.2.2.4.

Pg 159 Ln 19; mpcp\_timer - This timer is defined in 64.2.2.4.

Proposed Response Response Status O

CI 103 SC 103.2.2.3 P 142 L 40 # 1288  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Values are not specified for variables.

SuggestedRemedy

Remove "Value: {TBD}" here and in Line 49

Proposed Response Response Status O

CI 103 SC 103.2.2.4 P 144 L 39 # 1286  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Editors note should be removed

SuggestedRemedy

remove note

Proposed Response Response Status O

CI 103 SC 103.3.5.6 P 180 L 28 # 1289  
 Remein, Duane Huawei Technologies

Comment Type T Comment Status X

Figure 103-30 still contains a reference to confirmDiscovery(data\_rx[120:135]) in the PARSE GATE state. This function was removed in D0.3 via comment 1173. This instance of the function was missed. The operation statement is also missing a "then" (also true in 2012 STD).

Also some exit conditions mis-aligned (registered = TRUE, & gate\_accepted = TRUE)

SuggestedRemedy

Remove the reference in Figure 103-30 so the operation reads:  
 "if (discovery \* !registered) then gate\_accepted <= TRUE"

aligned (registered = TRUE, & gate\_accepted = TRUE)

Proposed Response Response Status O

CI 56 SC 1.3 P 28 L 10 # 1384  
 Laubach, Mark Broadcom

Comment Type E Comment Status X

Line 10 and 12, an example of distinguishing "coaxial cable"

SuggestedRemedy

Use "CCDN" or "coaxial network"

Proposed Response Response Status O

CI 56 SC 5.1.2 P 25 L 44 # 1383  
 Laubach, Mark Broadcom

Comment Type E Comment Status X

For both a) and b): If we are doing "up to" bit rates, then use the bit rates from the Task Force Objective. Somewhere there needs to be a statement that the bit rate will be dependent on deployment conditions and provisioning of the cable operator; i.e. based on plant conditions and RF spectrum assigned at deployment time.

SuggestedRemedy

Proposed Response Response Status O

CI 56 SC 56.1.2 P 25 L 17 # 1382  
 Laubach, Mark Broadcom

Comment Type ER Comment Status X

Avoid term "coaxial PMD", to avoid confusion with previous 802.3 coaxial PMDs where 802.3 "owned" the coax cable: 10Base2, 10Base5. In this standard, EPoC is another service offering on the network.

SuggestedRemedy

Uniformly substitute with "coaxial network PMD" or "CCDN PMD" or equivalent as a distinguishing qualifier. Do not use "coaxial cable".

Proposed Response Response Status O

CI 56 SC 56.1.2 P 25 L 45 # 1290  
 Remein, Duane Huawei Technologies

Comment Type E Comment Status X

Comment 1113 (copied below) from Draft 0.2 not implemented  
 CI 00 SC 0 P 3 L 11 # 1113

Comment Type E

Marked text not being used consistently throughout the draft. Some Editors use colored text, some green highlighting, some red highlighting with no apparent consistency.

SuggestedRemedy

Pick one scheme and use it consistently.

Recommend:

Magenta text for links that require updating

Yellow highlighting for text that may require other updates.

ACCEPT.

Applicable to all editors

SuggestedRemedy

Implement as agreed by the TF

Proposed Response Response Status O

CI 67 SC 6.1 P 35 L 48 # 1385  
 Laubach, Mark Broadcom

Comment Type ER Comment Status X

Is this an Editor's note?

SuggestedRemedy

Be consistent, add "Editors Note" or similar to distinguish.

Proposed Response Response Status O

Cl 67 SC 6.3 P 36 L 24 # 1386  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status X  
 Can hardly read what appears to be gray on a b&w printout.  
 SuggestedRemedy  
 make darker, bolder, whatever.  
 Proposed Response Response Status O

Cl 902 SC 902.1 P 107 L 8 # 1389  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status X  
 This paragraph can be updated to be more accurate.  
 SuggestedRemedy  
 Place holder. Either I'll provide with this comment or submit for next time.  
 Proposed Response Response Status O

Cl 67 SC 67.6.1 P 36 L 48 # 1291  
 Remein, Duane Huawei Technologies  
 Comment Type E Comment Status X  
 There appears to be an editors note that is improperly mareded.  
 This also applied to  
 67.6.2 pg 37 ln 8 and  
 67.6.3 pg 36 ln 19  
 SuggestedRemedy  
 Preface with "EDITORS NOTE (to be remove prior to publication); " as agreed  
 Proposed Response Response Status O

Cl 902 SC 902.1 P 107 L 9 # 1387  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 "typically", hmm, anything else is the PLC used for?  
 SuggestedRemedy  
 Remove "typically"  
 Proposed Response Response Status O

Cl 902 SC 902.1 P 107 L 12 # 1388  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 "simple" query response is not complete, broadcast is also used.  
 SuggestedRemedy  
 Replace with "broadcast combined with straightforward query response" or something similar.  
 Proposed Response Response Status O

Cl 902 SC 902.1.1 P 108 L 17 # 1390  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 Need to show Intial and Fine Ranging probe structures also. Adapt text to describe.  
 Provide editors notes and placeholders if awaiting on baseline.  
 SuggestedRemedy  
 Proposed Response Response Status O

CI 902 SC 902.1.1 P 108 L 6 # 1391  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 For both downstream and upstream PLC, add a standard CRC 32 to cover the information word of the PLC FEC codeword.  
 SuggestedRemedy  
 Add a standard CRC32 to cover the downstream and upstream FEC information word portion of each FEC codeword. Adapt all figures, text, etc. to indicate.  
 Proposed Response Response Status O

CI 902 SC 902.1.1 P 109 L 20 # 1393  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 Should include some informative description and text to indicate alignment of downstream PLC cycle with data channel, etc.  
 SuggestedRemedy  
 Editors can create.  
 Proposed Response Response Status O

CI 902 SC 902.1.1 P 112 L 29 # 1395  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 Spelling "frequency"  
 SuggestedRemedy  
 "frequency"  
 Proposed Response Response Status O

CI 902 SC 902.1.2 P 109 L 22 # 1392  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 Section and Figure 902-3 should be labeled as "Downstream". Upstream PLC path processing will also include Initial and Fine ranging block functions. In addition, downstream PLC has to include both NCP and Timestamp insertion functions as per the accepted PHY path block diagram.  
 SuggestedRemedy  
 Label as "downstream" as appropriate. Update Figure 902-3 to reflect components in approved downstream PHY path diagram, with augmentation as necessary for more detailed PLC funtions.  
 Proposed Response Response Status O

CI 902 SC 902.2.1.1 P 112 L 28 # 1394  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 Spelling "locater"  
 SuggestedRemedy  
 "located"  
 Proposed Response Response Status O

CI 902 SC 902.2.1.1 P 112 L 29 # 1396  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status X  
 "which determines" should be "that determines". Need to provide better text to describe why some of the normative decisions promote faster location identification and acquisition of the PLC channel  
 SuggestedRemedy  
 Place holder for this round, or will provide more in text comment round.  
 Proposed Response Response Status O

Cl 902 SC 902.2.1.1 P 112 L 36 # 1397  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status X  
 what does "for information" mean?  
 SuggestedRemedy  
 remove?.  
 Proposed Response Response Status O

Cl 902 SC 902.2.3 P 117 L 32 # 1401  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 Table 902-4 is informative  
 SuggestedRemedy  
 Add informative indication to table title.  
 Proposed Response Response Status O

Cl 902 SC 902.2.2 P 116 L 1 # 1398  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 Table 902-1 is normative  
 SuggestedRemedy  
 Add normative indication to table title.  
 Proposed Response Response Status O

Cl 902 SC 902.2.3 P 118 L 31 # 1402  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 is this an editors note?  
 SuggestedRemedy  
 Label as Editor's Note or remove.  
 Proposed Response Response Status O

Cl 902 SC 902.2.2 P 116 L 21 # 1399  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 Table 902-2 is informative  
 SuggestedRemedy  
 Add informative indication to table title.  
 Proposed Response Response Status O

Cl 902 SC 902.2.3 P 118 L 32 # 1403  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status X  
 Seems appropriate to add informative text here, if needed on relation of PLC channel to data channel  
 SuggestedRemedy  
 Add any text to promote informational clarity.  
 Proposed Response Response Status O

Cl 902 SC 902.2.3 P 117 L 1 # 1400  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status X  
 Table 902-3 is "normative"  
 SuggestedRemedy  
 Add normative indication to table title.  
 Proposed Response Response Status O

Cl 902 SC 902.2.4.1 P 119 L 41 # 1404  
 Laubach, Mark Broadcom  
 Comment Type T Comment Status X  
 Define what is in a profile  
 SuggestedRemedy  
 Definitions and normative text needed to explain and define profiles and requirements.  
 Otherwise, add editors note and ask for baseline.  
 Proposed Response Response Status O

Cl 902 SC 902.4 P 125 L 13 # 1407  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 "in and"  
 SuggestedRemedy  
 missing text between "in" and "and" should be filled in or fixed.  
 Proposed Response Response Status O

Cl 902 SC 902.4 P 125 L 26 # 1408  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 A "PHY Discovery Response" is better or also called an Initial Ranging Response.  
 SuggestedRemedy  
 Either replace with Initial Ranging or add a parenthetical.  
 Proposed Response Response Status O

Cl 902 SC 902.4 P 125 L 42 # 1409  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 which upstream channel (data or PLC) and what type of guard band, time and/or frequency? With 1D to 2D mapping, is this for the data channel? Efficiency of the PLC upstream isn't really a concern or something to optimize.  
 SuggestedRemedy  
 Add appropriate descriptive text to clarify data vs PLC and what type of guard band.  
 Proposed Response Response Status O

Cl 902 SC 902.4 P 125 L 43 # 1410  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 "notifies the CLT of the RF on/off times"... not clear why and/or how this is needed or used.  
 SuggestedRemedy  
 Provide informative lead in on this.  
 Proposed Response Response Status O

Cl 902 SC 902.4 P 125 L 8 # 1406  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status X  
 More enumeration needed to describe what goes on and achieved during EPoC Auto-Negotiation. What general items that must get set in a CNU can be listed.  
 SuggestedRemedy  
 Placeholder, or will expand later. Leave editors note.  
 Proposed Response Response Status O



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**Cl 902**    **SC 902.4**                      **P 125**            **L 4**                      # 1405  
Laubach, Mark                              Broadcom

**Comment Type**    **ER**            **Comment Status**    **X**  
PHY Discovery included in Auto-Negotiation

**SuggestedRemedy**  
Suggestion, rename: "PHY Auto-Negotiation Process", include discovery if needed as a subsection.

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

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**Cl 902**    **SC 902.4**                      **P 127**            **L 36**                      # 1411  
Laubach, Mark                              Broadcom

**Comment Type**    **ER**            **Comment Status**    **X**  
Is this an Editor's note" If so, label. Also add Initial Ranging to the statement.

**SuggestedRemedy**  
Add Editor's note label and "Initial Ranging and " to the note text.

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

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**Cl 902**    **SC 902.5**                      **P 127**            **L 38**                      # 1412  
Laubach, Mark                              Broadcom

**Comment Type**    **ER**            **Comment Status**    **X**  
Is Wide Band Probing part of the PLC since it needs to be coordinated with MPCP?

**SuggestedRemedy**  
Add Editors note that the mechanism for coordinating Wide Band probing with MPCP is still T.B.D. as well as any interoperation with the PLC.

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

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