

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl **FM** SC P1 L27 # 275  
 Marris, Arthur Cadence Design Systems  
 Comment Type **ER** Comment Status **D** bucket  
 802.3cd is published.  
 On page 10 the description of what this amendment does is missing.  
 SuggestedRemedy  
 Change 802.3cd-201x to 802.3cd-2018 here and on page 10  
 Also change "IEEE Std 802.3-201x" to "IEEE Std 802.3-2018" throughout the document.  
 Also on page 10 replace "This amendment includes [complete]" with appropriate text.  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl **FM** SC **FM** P1 L27 # 279  
 Wienckowski, Natalie General Motors  
 Comment Type **E** Comment Status **D** bucket  
 802.3cd has been published  
 SuggestedRemedy  
 Change: 802.3cd-201x  
 To: 802.3cd-2018  
 Also on P10 L43.  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl **FM** SC **FM** P9 L5 # 436  
 Powell, William Nokia  
 Comment Type **TR** Comment Status **A**  
 Current text still refers to 100 Gb/s EPON:  
 This introduction is not part of IEEE P802.3ca, IEEE Draft Standard for Ethernet.  
 Amendment: Physical Layer Specifications and Management Parameters for 25 Gb/s, 50 Gb/s, and 100 Gb/s Passive Optical Networks.  
 SuggestedRemedy  
 Change to:  
 This introduction is not part of IEEE P802.3ca, IEEE Draft Standard for Ethernet.  
 Amendment: Physical Layer Specifications and Management Parameters for 25 Gb/s and 50 Gb/s Passive Optical Networks.  
 Response Response Status **C**  
 ACCEPT.

Cl **FM** SC **FM** P10 L31 # 280  
 Wienckowski, Natalie General Motors  
 Comment Type **E** Comment Status **D** bucket  
 802.3-2018 has been published  
 SuggestedRemedy  
 Change: 802.3-201x  
 To: 802.3-2018  
 Also on P10 L37 & P10 L45.  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl **FM** SC **FM** P10 L38 # 282  
 Wienckowski, Natalie General Motors  
 Comment Type **E** Comment Status **D** bucket  
 802.3bt also added Annex 145C.  
 SuggestedRemedy  
 Change: Annex 145A, and Annex 145B.  
 To: Annex 145A, Annex 145B, and Annex 145C.  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

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**CI FM**      **SC FM**                      **P10**              **L49**              # **59**  
 Zimmerman, George                      CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco  
**Comment Type**    **E**              **Comment Status**    **A**                      *frontmatter*  
 802.3cg, 802.3cn, 802.3cq amendments before this are all missing, as well as the description of 802.3ca - It would be REALLY helpful to see what 802.3ca is intending to put into the standard....  
**SuggestedRemedy**  
 Copy 802.3cg, 802.3cm, 802.3cn, and 802.3cq descriptions from 802.3cn D2p1, and fill in a description for 802.3ca.  
**Response**                      **Response Status**    **C**  
 ACCEPT IN PRINCIPLE.  
  
 Update FrontMatter to the latest version available.  
  
 Include summary description of IEEE Std 802.3ca™-201x as follows:  
  
 Amendment X-This amendment to IEEE Std 802.3-2018 extends the operation of Ethernet Passive Optical Networks (EPONs) to multiple channels of 25 Gb/s providing both symmetric and asymmetric operation for the following data rates (downstream/upstream): 25/10 Gb/s, 25/25 Gb/s, 50/10 Gb/s, 50/25 Gb/s, and 50/50 Gb/s. This amendment specifies the 25 Gb/s EPON Multi-Channel Reconciliation Sublayer (MCRS), 25GBASE-PQ Physical Coding Sublayers (PCSs), Physical Media Attachments (PMAs), and Physical Medium Dependent sublayers (PMDs) that support both symmetric and asymmetric data rates while maintaining backward compatibility with already deployed 10 Gb/s EPON equipment. The EPON operation is defined for distances of at least 20 km, and for a split ratio of at least 1:32.

**CI FM**      **SC FM**                      **P10**              **L50**              # **64**  
 Anslow, Pete                      Ciena  
**Comment Type**    **E**              **Comment Status**    **D**                      *frontmatter; bucket*  
 The summary text for IEEE Std 802.3ca-20xx is missing  
**SuggestedRemedy**  
 Add suitable summary text  
**Proposed Response**                      **Response Status**    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
  
 See comment #59

**CI FM**      **SC FM**                      **P10**              **L52**              # **281**  
 Wienckowski, Natalie                      General Motors  
**Comment Type**    **E**              **Comment Status**    **D**                      *frontmatter; bucket*  
 Need to add a description of this ammendment  
**SuggestedRemedy**  
 Change: This amendment includes [complete]  
 To: This amendment includes changes to IEEE Std 802.3-2018 and adds Clause 141 through Clause 144 and Annex 142A. This amendment extends the operation of Ethernet Passive Optical Networks (EPONs) to multiple channels of 25 Gb/s providing both symmetric and asymmetric operation for the following data rates (downstream/upstream): 25/10 Gb/s, 25/25 Gb/s, 50/10 Gb/s, 50/25 Gb/s, and 50/50 Gb/s. This standard specifies the 25 Gb/s EPON Multi-Channel Reconciliation Sublayer (MCRS), 25GBASE-PQ Physical Coding Sublayers (PCSs), Physical Media Attachments (PMAs), and Physical Medium Dependent sublayers (PMDs) that support both symmetric and asymmetric data rates while maintaining complete backward compatibility with already deployed 10 Gb/s EPON equipment. Backward compatibility with deployed 1G-EPON and ITU-T G.984 GPON is maintained with 25GBASE-PQ for the specific case of 1G-EPON and GPON ONUs using reduced-band (40 nm) lasers. The EPON operation is defined for distances of at least 20 km, and for a split ratio of at least 1:32.  
**Proposed Response**                      **Response Status**    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
  
 See comment #59

**CI FM**      **SC FM**                      **P20**              **L46**              # **65**  
 Anslow, Pete                      Ciena  
**Comment Type**    **E**              **Comment Status**    **D**                      *bucket*  
 The TOC entries for Annex 31A and Annex 142A are mixed together and they both say (normative).  
**SuggestedRemedy**  
 Fix the TOC  
**Proposed Response**                      **Response Status**    **W**  
 PROPOSED ACCEPT.

Proposed Responses

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Cl 00 SC 0 P L # 63

Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type E Comment Status A

PICS Item PQG2510D2F3 value/comment implies that the requirement is labeling. There is no mention of labeling in the requirement itself (note c of Table 141-15). The requirement is a strict 'shall be able to tolerate without damage'. The PICS says the receiver either shall be able to tolerate, OR shall be labeled that it may be damaged. Also, this PICS item is a duplicate of PQG2510D2F2, because that PICS item includes ALL of the receiver requirements in the Table (and the damage requirement is one), so if the requirement allows labeling, the damage threshold needs to be removed from the table.

As best I can tell, IEEE Std 802.3 2018 handles these damage requirements both ways - either excepting with a label, or simply meeting the requirement.

The dominant way appears to be that the requirement is to tolerate the level specified (Clauses 88, 89, 95, 114, 115, 121, 122, and 124 follow this model, see, e.g., PICS 88.12.4.3, or Table 124-7 and PICS 124.12.4.3)

However, Clauses 60 and 75 specify that the requirement may be met, OR the PMD may be labeled. In this case, the requirement to withstand damage is actually to either meet the level OR label appropriately.

The same comment applies to ALL the PMD receiver damage threshold PICS.

SuggestedRemedy

Depending on the intent (see comment):  
Either delete the PICS for the damage threshold.

OR:

strip the damage threshold out of the table into the normative text, and rewrite the requirement in the normative text (in 141.5.2) as such. See, 60.6.2, 75.4.2, 75.5.2 for example text:

"Either the damage threshold of XXX shall be met, or, the receiver shall be labeled to indicate the maximum optical input power level to which it can be continuously exposed without damage."

(where XXX either specifies the separate table with the damage threshold or just puts the level inline in the text - whichever is more straightforward).

(same remedy applies to other receiver damage threshold PICS).

Response Response Status C

ACCEPT IN PRINCIPLE.

Delete all the PICS for the damage threshold and associated labelling (e.g., PQG2510D2F3)

Cl 00 SC 0 P0 L0 # 466

Thompson, Geoff GraCaSI S.A./Independent

Comment Type ER Comment Status A

In all illustrations of the ISO Reference Model, the right end of the Layer dividing line between MAC and Physical Layer is imprecisely placed.

SuggestedRemedy

Place right end of the dashed line precisely at the upper left corner of the MCRS box in all instances.

Response Response Status W

ACCEPT.

Cl 00 SC 0 P0 L0 # 467

Thompson, Geoff GraCaSI S.A./Independent

Comment Type ER Comment Status A

In all illustrations of the ISO Reference Model, the right end of the Layer dividing line between Data Link and Network Layer is imprecisely placed.

SuggestedRemedy

Place right end of the dashed line precisely at the upper left corner of the MPMC CLIENT box in all instances.

Response Response Status W

ACCEPT.

Cl 00 SC 0 P10 L49 # 58

Maguire, Valerie The Siemon Company

Comment Type E Comment Status D frontmatter; bucket

Information for Amendment 4: 802.3cg is missing.

SuggestedRemedy

Insert, "IEEE Std 802.3cg™-20xx Amendment 4—This amendment includes changes to IEEE Std 802.3-2018 and adds Clause 146 through Clause 148 and Annex 146A and Annex 146B. This amendment adds 10 Mb/s Physical Layer specifications and management parameters for operation over a single balanced pair of conductors."

Proposed Response Response Status W

PROPOSED ACCEPT.

See comment #59

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Cl 00 SC 0 P21 L46 # 429  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D frontmatter; bucket  
 This is too out of date: "other IEEE 802.3 amendment projects running in parallel (e.g., IEEE P802.3bj and IEEE P802.3bk)"  
*SuggestedRemedy*  
 Use an up-to-date example, refer to template maintainer to update if not already done  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See comment #59

Cl 1 SC 1.3 P22 L8 # 430  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 According to [https://www.itu.int/itu-t/workprog/wp\\_item.aspx?isn=13348](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13348) , G.652-2016 has removed G.652.A and G.652.C, leaving B and D. Yet several clauses will work with A or C; we should not give an impression that they don't.  
*SuggestedRemedy*  
 Choose whether you want to include types A and C for the new PMDs. If you do, add a new reference to G.562-2016, leaving G.652-2009 in place. If you don't, it may be simplest to continue with G.652-2009, which remains available.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Add a new reference to G.652-2016, leaving G.652-2009 in place. This will allow existing clauses to be pointed to the right location. Make all references to G.652 in .3ca dated 2016.

Cl 1 SC 1.3 P22 L13 # 66  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 IEEE references in the in-force standard do not have a date at the end of the title  
*SuggestedRemedy*  
 Delete ", 24 July 2017"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 1 SC 1.3 P22 L15 # 67  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 IEC references in the in-force standard have an em dash in front of "Part" with no spaces on either side. This is also true for other "-" separators in the title.  
*SuggestedRemedy*  
 For the IEC reference being added replace " - " before "Performance", "Part", and "Uncontrolled" with an em dash with no spaces before and after.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 1 SC 1.4 P22 L24 # 68  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket

The sorting order for definitions in 1.4 is defined at:  
[http://www.ieee802.org/3/WG\\_tools/editorial/requirements/words.html#sort](http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html#sort)  
 This order has not been correctly applied to the P802.3ca draft.  
 Also, definitions are usually presented in subclause order in amendments.

*SuggestedRemedy*

In 1.4, change the editing instructions and definition numbering as follows:  
 Insert the following new definitions after 1.4.90 "200GXS":  
 1.4.90a 25/10G-EPON: ...  
 1.4.90b 25/25G-EPON: ...  
 Insert the following new definition after 1.4.100 "25GBASE-T":  
 1.4.100a 25G-EPON: ...  
 Insert the following new definitions before 1.4.128aa "50GBASE-CR" as inserted by IEEE Std 802.3cd-2018:  
 1.4.128aaa 50/10G-EPON: ...  
 1.4.128aab 50/25G-EPON: ...  
 1.4.128aac 50/50G-EPON: ...  
 Insert the following new definition after 1.4.128ah "50 Gb/s Media Independent Interface (50GMII)" as inserted by IEEE Std 802.3cd-2018:  
 1.4.128ai 50G-EPON: ...  
 Insert the following new definitions after 1.4.244 "Energy-Efficient Ethernet (EEE)":  
 1.4.244a envelope: ...  
 1.4.244b envelope allocation: ...  
 1.4.244c envelope descriptor: ...  
 Insert the following new definitions after 1.4.245 "envelope frame":  
 1.4.245a envelope header: ...  
 1.4.245b envelope quantum: ...  
 1.4.245c EQT: ...  
 Insert the following new definition after 1.4.277 "Gigabit Media Independent Interface (GMII)":  
 1.4.277a GPON: ...  
 Change 1.4.278 as follows:  
 1.4.278 Grant: ...  
 Change 1.4.312 (re-numbered from 1.4.313 due to the deletion of 1.4.294 by IEEE Std 802.3bt-2018) as follows:  
 1.4.312 Logical Link Identifier (LLID): ...  
 Insert new definition for "MCRS channel" after 1.4.319 "maximum differential input" (re-numbered from 1.4.320 due to the deletion of 1.4.294 by IEEE Std 802.3bt-2018) as follows:  
 1.4.319a MCRS channel: ...  
 Insert new definition for "Nx25G-EPON" after 1.4.350 "NRZI" (re-numbered from 1.4.351 due to the deletion of 1.4.294 by IEEE Std 802.3bt-2018) as follows:

*Proposed Response* Response Status W  
 PROPOSED ACCEPT.

Cl 1 SC 1.4.90a P22 L45 # 432  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket

the maximum sustained throughput

*SuggestedRemedy*

a maximum sustained throughput (several times)

*Proposed Response* Response Status W  
 PROPOSED ACCEPT.

Cl 1 SC 1.4.244a P23 L18 # 459  
 Thompson, Geoff GraCaSI S.A./Independent  
 Comment Type ER Comment Status R

I believe that this is the first use of the term "envelope" in this context. Please refer to it as a "timing envelope" to distinguish it from an envelope frame.

*SuggestedRemedy*

Change the following text: "In the Multi-Channel Reconciliation Sublayer (MCRS, see Clause 143), an envelope encapsulates data belonging to a specific LLID being transmitted on a specific MCRS channel," TO READ: "In the Multi-Channel Reconciliation Sublayer (MCRS, see Clause 143), a timing envelope encompasses data belonging to a specific LLID being transmitted on a specific MCRS channel,"

*Response* Response Status W  
 REJECT.

When selecting the term "envelope", the TF has reviewed the base document to ensure there was no conflict of terms. In the existing body of IEEE Std 802.3, the word "envelope" mostly used in two contexts:

- 1) "envelope frame(s)" - always used as this combination of words
- 2) Envelope of a signal - always clear from the PMD focus of a given clause.

The TF felt that using the word "envelope" by itself in EPON-related clauses will not be confusing to readers. However, the term "timing envelope" may be confusing because the term "envelope" is not related to time, but rather it is related to a number of bits/octets being transmitted or received.

## Proposed Responses

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Cl 1 SC 1.4.244b P23 L22 # 460

Thompson, Geoff GraCaSI S.A./Independent

Comment Type ER Comment Status R

Per the previous comment, the general term "envelope" is already used elsewhere in 802.3. This will be a cause for confusion.

## SuggestedRemedy

Please refer to the PON use at this level as a "timing envelope" to distinguish it from other uses of the term envelope. The change is needed here and many places elsewhere throughout your draft. Please do a global search and examine each use of the term "envelope" for possible modification.

Response Response Status W

REJECT.

There are no other "envelopes" used in the standard today, so there is no confusion with other terms. The term itself is defined as a term (1.4.244a) and used consistently throughout the draft.

See comment #459.

Cl 1 SC 1.4.244b P23 L23 # 28

Hajduczenia, Marek Charter Communications

Comment Type ER Comment Status R can-vs-may

"can" used and not intended per Style Guide

## SuggestedRemedy

Change "A single GATE MPCPDU can carry up" to "A single GATE MPCPDU may carry up"

Response Response Status C

REJECT.

"Can" (i.e., "is able" or "is capable") is correct and is intended. "May" (i.e., "is allowed" or "is permitted") is semantically wrong here.

Cl 1 SC 1.4.244c P23 L26 # 461

Thompson, Geoff GraCaSI S.A./Independent

Comment Type TR Comment Status A

The parameters to not "describe" the timing envelope, they are its defining parameters.

## SuggestedRemedy

Change "describe" to "define".

Response Response Status W

ACCEPT IN PRINCIPLE.

See comment #433

Cl 1 SC 1.4.244c P23 L26 # 433

Dawe, Piers Mellanox

Comment Type T Comment Status A

I don't know what you mean by "tuple". As you don't bother to use the word anywhere else in this draft, and it doesn't appear in Section 1 with its 507 definitions, it can't be necessary.

## SuggestedRemedy

Change to "sequence".

Response Response Status C

ACCEPT IN PRINCIPLE.

Both tuple and sequence are wrong here as the ordered set assumes a set of homogenous elements. There is nothing ordered in envelope descriptor.

1.4.244c Envelope descriptor: A set of parameters consisting of LLID, StartTime, and EnvLength. An envelope descriptor defines a specific envelope pending transmission. Envelope descriptors are generated by the local MPCP sublayer and are passed to MCRS at the appropriate time to start the envelope transmission.

## Proposed Responses

## IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 1 SC 1.4.244d P23 L30 # 462

Thompson, Geoff GraCaSI S.A./Independent

Comment Type TR Comment Status A

The way this currently reads, every envelope and every frame gets this marker at which point it ceases to be a "special marker". The actual meaning and its distinctness need to be described.

*SuggestedRemedy*

Rewrite the definition text to actually be a distinguishing term that can be understood.

Response Response Status W

ACCEPT IN PRINCIPLE.

Change definition to read: An MCRS-specific marker that is inserted at the beginning of every envelope (Envelope Start Header) and in place of every frame preamble (Envelope Continuation Header). The envelope header includes fields that identify the LLID that sourced the encapsulated data and the length of the data (in units of EQ). Envelope headers also include CRC8 field used to detect bit errors.

Cl 1 SC 1.4.245a P23 L33 # 463

Thompson, Geoff GraCaSI S.A./Independent

Comment Type TR Comment Status A

This is very confusing. As far as I know, there is no quanta identified within the MAC sub-layer and above that is any finer grained than a MAC Frame. The text implies that the quantification (and identification thereof) exists in the higher layers. This is not true.

*SuggestedRemedy*

Rewrite so it is more obvious that the quantization only exists within the RS and below.

Response Response Status W

ACCEPT IN PRINCIPLE.

This is a fair observation. MAC and MAC Client are not aware of this quantization. The EPON-specific MAC Control and MAC Control Client (out-of-scope for 802.3) are aware of it, just like in previous EPON generations, the MAC Control and MAC Control Client were aware of quantization unit TQ (time quantum). Change the definition as shown below:

1.4.245a Envelope Quantum: A unit of information volume. Each envelope quantum represents 64 bits of data plus the layer-specific encoding. Thus, at the MAC >>>Control<<< sublayer and above, an envelope quantum is equal to 64 bits. Within the MCRS, an envelope quantum contains 72 bits (i.e., 64 bits of data and 8 bits of control). Within PCS, after the 64B/66B encoding, an envelope quantum contains 66 bits.

Cl 1 SC 1.4.245a P23 L35 # 112

Remein, Duane Futurewei Technologies, Inc.

Comment Type T Comment Status A

While the following statement is true for a short time it is not always true (after 267B/256B encoding and EQ would be 64.25 bits) "Within PCS, after the 64B/66B encoding, an envelope quantum contains 66 bits." The stand-a-alone term "EQ" is only used 2x in Cl 142 (pg/line 107/34, 124/17). In both cases the term refers to an observable 72 bit block from the xMII.

*SuggestedRemedy*

Remove the statement "Within PCS, after the 64B/66B encoding, an envelope quantum contains 66 bits."

Response Response Status C

ACCEPT IN PRINCIPLE.

If modified as proposed, the definition would be incomplete, since it mentions MAC and higher sublayers, MCRS, but would ignore PCS. It is better to extend the definition as follows: "Within PCS, after the 64B/66B encoding, an envelope quantum contains 66 bits, and after 256B/257B encoding, four envelope quanta are packed into a single 257-bit block."

Cl 1 SC 1.4.245b P23 L38 # 465

Thompson, Geoff GraCaSI S.A./Independent

Comment Type E Comment Status R

It seems like a really bad idea to make this term speed dependent so that the term will not be usable for a like instance at any other speed.

*SuggestedRemedy*

Change to bit times.

Response Response Status C

REJECT.

For the OLT to be able to schedule a mix of 25G and 10G upstream transmissions (for the 25G/25G and 25G/10G coexistence mode), the scheduler needs to have some common reference unit. The EQT was specifically introduced to not depend of bit times. A transmission time of 1 EQ in downstream direction is exactly 1 EQT. In the upstream direction, for ONUs transmitting at 25Gb/s, the transmission time of 1 EQ is also 1 EQT. But for ONUs transmitting at 10Gb/s, the transmission time of 1 EQ is 2.5 EQTs. In other words, EQT is a fixed interval, regardless of the line rate or bit times. It is correct that in some future EPON projects (which don't seem to end), the value of EQT may be different. We expect a future task force to deal with this by making this definition clause- or PON architecture-specific.

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**Cl 1**      **SC 1.4.278**                      **P22**                      **L31**                      # **431**

Dawe, Piers                                      Mellanox

**Comment Type**    **E**                      **Comment Status**    **A**

Contradictory statements about one or multiple upstream bursts.  
Change:  
In Clause 64 ... LLID. Each grant results in one or multiple upstream bursts transmitted by the ONU. In Clause 144, a grant includes envelope allocations for multiple LLIDs. The OLT conveys a grant to the ONU using one or multiple GATE MPCPDUs, all having the same StartTime values. There is a one-to-one correspondence between ...

**SuggestedRemedy**  
to:  
In Clause 64 ... LLID; each grant results in one or multiple upstream bursts transmitted by the ONU. In Clause 144, a grant includes envelope allocations for multiple LLIDs, the OLT conveys a grant to the ONU using one or multiple GATE MPCPDUs, all having the same StartTime values, and there is a one-to-one correspondence between ...

**Response**                                      **Response Status**    **C**  
ACCEPT IN PRINCIPLE.

The proposed changes would make the definition even more confusing. Use the following updated definition:

1.4.278 Grant: Within P2MP protocols, a permission to transmit at a specific time, for a specific duration. Grants are issued by the OLT (master) to ONUs (slaves) by means of GATE messages. In Clause 64 and Clause 77, a GATE MPCPDU contains one or multiple grants issued to a single LLID, with each grant resulting in one or multiple upstream bursts transmitted by the ONU. In Clause 144, a grant includes envelope allocations for multiple LLIDs and there is a one-to-one correspondence between the grants issued to an ONU and upstream bursts transmitted by that ONU.

**Cl 1**      **SC 1.5**                                      **P23**                      **L51**                      # **69**

Anslow, Pete                                      Ciena

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

"CDR" is already present in 1.5 Abbreviations in the base standard.

**SuggestedRemedy**  
Remove "CDR clock data recovery" from the list of new abbreviations

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

**Cl 1**      **SC 1.5**                                      **P23**                      **L52**                      # **306**

Lynskey, Eric                                      Broadcom

**Comment Type**    **E**                                      **Comment Status**    **D**                      *bucket, CDR*

CDR is already present in IEEE 802.3-2018.

**SuggestedRemedy**  
Remove.

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

**Cl 1**      **SC 1.5**                                      **P23**                      **L52**                      # **434**

Dawe, Piers                                      Mellanox

**Comment Type**    **E**                                      **Comment Status**    **D**                      *bucket, CDR*

CDR doesn't stand for clock data recovery

**SuggestedRemedy**  
Change to clock and data recovery

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

See comment #306

**Cl 1**      **SC 1.5**                                      **P23**                      **L54**                      # **70**

Anslow, Pete                                      Ciena

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

New abbreviations are usually presented in alphabetical order

**SuggestedRemedy**  
Sort the new abbreviations in to alphabetical order

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



## Proposed Responses

## IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 1 SC 1.5 P24 L9 # 260  
 D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei  
 Comment Type E Comment Status D bucket  
 Add abbreviation MCRS  
 SuggestedRemedy  
 MCRS - multi channel reconciliation sublayer  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 1 SC 1.5 P24 L10 # 71  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 According to:  
[http://www.ieee802.org/3/WG\\_tools/editorial/requirements/words.html](http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html)  
 "Physical Layer" is "always capped"  
 SuggestedRemedy  
 Change:  
 "PLID physical layer ID" to:  
 "PLID Physical Layer ID"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Per comment + change capitalization on page 203/11

Cl 30 SC 30.3.5.1.4 P26 L38 # 327  
 Laubach, Mark Broadcom  
 Comment Type ER Comment Status A  
 The ";" dropped off the end of the line during original editing. This is needed to be consistent with Clause 30 format.  
 SuggestedRemedy  
 Add the ";" to the end of the line.  
 Response Response Status C  
 ACCEPT.

Cl 30 SC 30.5.1.1.2 P27 L2 # 392  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 Multiple aMAUTypes with the same description  
 SuggestedRemedy  
 Add words to distinguish them  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.

Apply the following changes to MAU description, using 25GBASE-PQG as an example:

25GBASE-PQG-D2 One single mode fiber, 1x25G continuous transmission /  
 1x25G burst mode reception, medium power class, as specified in Clause 141  
 25GBASE-PQG-D3 One single mode fiber, 1x25G continuous transmission /  
 1x25G burst mode reception, high power class, as specified in Clause 141  
 25GBASE-PQG-U2 One single mode fiber, 1x25G burst mode transmission /  
 1x25G continuous reception, medium power class, as specified in Clause 141  
 25GBASE-PQG-U3 One single mode fiber, 1x25G burst mode transmission /  
 1x25G continuous reception, high power class, as specified in Clause 141

Cl 31A SC 31A P246 L16 # 109  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 The Value/Comment entry for PAUSE has been in place since the 1998 version of IEEE Std 802.3 without change.  
 The Value/Comment entry for GATE has been in place since the 2005 version of IEEE Std 802.3 without change.  
 There is no special feature of the P802.3ca draft that requires these changes to be made.  
 SuggestedRemedy  
 remove the changes shown to these rows of the table.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Retain changes to PAUSE and GATE (missing "s" at the end of verb), remove unchanged rows for REPORT, REGISTER\_REQ, REGISTER, and REGISTER\_ACK. Update the editorial instruction by adding "(unchanged rows are not shown)" at the end.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 45 SC 45.2.1 P29 L20 # 72  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 The two underlined ellipsis characters in the middle of the table should not be underlined.  
 The rows for registers 3.80, 3.81, and 3.82 should be in Table 45-176 not Table 45-3  
 SuggestedRemedy  
 Delete the row with the two underlined ellipsis characters in the middle of the table.  
 Move the rows for registers 3.80, 3.81, and 3.82 to Table 45-176  
 Change the bottom ruling of Table 45-3 to the table default.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1 P29 L20 # 113  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Ellipses need not be shown as added in Table 45-3 7th row.  
 SuggestedRemedy  
 remove underlining on ellipses.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1 P29 L29 # 60  
 Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco  
 Comment Type E Comment Status D bucket  
 Editing instruction needs to include 802.3cg which also modified Table 45-3.  
 SuggestedRemedy  
 change "as modified by IEEE Std 802.3cb-2018 and IEEE Std 802.3cd-2018" to "as modified by IEEE Std 802.3cb-2018, IEE Std 802.3cd, and IEEE 802.3cg-201x)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1.23a P30 L5 # 75  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 The name in the title of 45.2.1.23a.2 is Downstream differential encoding, so this is what should be in the "Name" entry for bit 1.29.15 in Table 45-26a  
 SuggestedRemedy  
 In Table 45-26a:  
 In the Name cell for bit 1.29.15, change "DS\_Diff\_Enc" to " Downstream differential encoding"  
 In the Description cell for bit 1.29.15, change " Downstream differential encoding" to:  
 "1 = Downstream differential encoding enabled  
 0 = Downstream differential encoding disabled"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1.23a.1 P29 L37 # 114  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Bit definitions are typically ordered high to low (at least that is how they are defined in 45.2.1.1 - ...3).  
 SuggestedRemedy  
 Swap sub-clauses so that 45.2.1.23a.2 Downstream Differential Encoding (1.29.15) comes before 45.2.1.23a.1 PMA/PMD type selection (1.29.5:0).  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1.23a.1 P29 L37 # 73  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 The subclauses either side of 45.2.1.23a define the bits in order of largest to smallest.  
 SuggestedRemedy  
 Swap the order of the definitions so that bit 1.29.15 is defined in 45.2.1.23a.1 and bits 1.29.5:0 in 45.2.1.23a.2  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

## Proposed Responses

## IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 45 SC 45.2.1.23a.1 P29 L41 # 16  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A  
 New "shall" statements were added, but updates to PICS are missing  
 SuggestedRemedy  
 Updates PICS per hajduczenia\_3ca\_1\_0719.pdf  
 Response Response Status C  
 ACCEPT.

Cl 45 SC 45.2.1.23a.2 P29 L45 # 74  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 In the title of 45.2.1.23a.2 "Downstream Differential Encoding" should be "Downstream differential encoding" (lower case d and e)  
 SuggestedRemedy  
 In the title of 45.2.1.23a.2 change: "Downstream Differential Encoding" to: "Downstream differential encoding"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1.23a.2 P29 L50 # 115  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 "TX PMA" and "RX PMA" are poorly defined.  
 SuggestedRemedy  
 Change  
 "TX PMA" to "transmit PMA" and  
 "RX PMA" to "receive PMA"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1.134a P31 L10 # 393  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status R  
 Table title wraps too short  
 SuggestedRemedy  
 Make the text box for table title wider  
 Response Response Status C  
 REJECT.

When attempting to fit the whole title in a single line, 2-3 characters flow into line 2. Title was forced to be this way on purpose.

Cl 45 SC 45.2.1.134a P31 L15 # 76  
 Anslow, Pete Ciena  
 Comment Type TR Comment Status A  
 Table 45-103a contains PMA/PMD "ability" bits. All of the other registers in Clause 45 containing PMA/PMD "ability" bits use the text:  
 "1 = PMA/PMD is able to perform XXGBASE-XXX  
 0 = PMA/PMD is not able to perform XXGBASE-XXX"  
 The text in Table 45-103a for the PMA/PMD "ability" bits should be consistent with that used for the other PMA/PMD "ability" bits in Clause 45  
 These bits are not a compliance statement, they are used to indicate whether a device is able to perform as a particular PMA/PMD type.  
 SuggestedRemedy  
 In Table 45-103a change the text in the Description column for all PMA/PMD "ability" bits to the form:  
 "1 = PMA/PMD is able to perform XXGBASE-XXX-XX  
 0 = PMA/PMD is not able to perform XXGBASE-XXX-XX"  
 Response Response Status W  
 ACCEPT.

Proposed Responses

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Cl 45 SC 45.2.1.134a P31 L54 # 77  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 When tables split across pages, the bottom ruling of the table on the first page should be "very thin"  
 SuggestedRemedy  
 Make the bottom ruling "very thin" for:  
 Table 45-103a at the foot of page 31 and page 32  
 Table 45-217a at the foot of page 43  
 Table 141-7 at the foot of page 59  
 Table 142-5 at the foot of page 118 and page 119  
 Table 144-4 at the foot of page 201  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 45 SC 45.2.1.134a.9 P34 L16 # 1  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 Make sure that the PMD name is not broken across lines.  
 SuggestedRemedy  
 Applies to 45.2.1.134a.9, 45.2.1.134a.10, 45.2.1.134a.11, 45.2.1.134a.12, 45.2.1.134a.13, 45.2.1.134a.14, 45.2.1.134a.15, 45.2.1.134a.16, 45.2.1.134a.23, 45.2.1.134a.24, 45.2.1.134a.25, 45.2.1.134a.26, 45.2.1.134a.27, 45.2.1.134a.28, 45.2.1.134a.29, 45.2.1.134a.30, 45.2.1.134a.31, 45.2.1.134a.32  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1.134a.9 P34 L16 # 116  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 PMA/PMD name crosses the line.  
 SuggestedRemedy  
 Change the character format so that the line is not broken by the PMD name at the following locations (pg/line): 34/16, 34/22, 34/28, 34/34, 34/40, 34/46, 34/52, 35/4, 35/46, 35/52, 36/4, 36/10, 36/16, 36/22, 36/28, 36/34, 36/40, & 36/46. Editors licenses to fix any others found.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1.18aa P33 L36 # 472  
 Brandt, David Rockwell Automation  
 Comment Type E Comment Status D wrong-ballot  
 Misspelling  
 SuggestedRemedy  
 Change: "abilitiy", To: "ability"  
 Proposed Response Response Status Z  
 REJECT.  
 This comment was WITHDRAWN by the commenter.  
 No such spelling "abilitiy" found in the draft. Given that 45.2.1.18 does not exist in the draft - is this a comment against P803.2ca?

Cl 45 SC 45.2.1.18ab P33 L43 # 473  
 Brandt, David Rockwell Automation  
 Comment Type E Comment Status D wrong-ballot  
 Misspelling  
 SuggestedRemedy  
 Change: "abilitiy", To: "ability"  
 Proposed Response Response Status Z  
 REJECT.  
 This comment was WITHDRAWN by the commenter.  
 No such spelling "abilitiy" found in the draft. Given that 45.2.1.18 does not exist in the draft - is this a comment against P803.2ca?

Cl 45 SC 45.2.3 P38 L12 # 78  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 In the new names for registers 3.76, 3.77 and 3.78, 3.79 in Table 45-176, there shouldn't be a comma in "PR10G-EPON, and Nx25GEPON"  
 This is shown correctly in 45.2.3.41 and 45.2.3.42  
 SuggestedRemedy  
 In the new names for registers 3.76, 3.77 and 3.78, 3.79 in Table 45-176, delete the comma in "PR10G-EPON, and Nx25GEPON" (2 instances)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 45 SC 45.2.3 P38 L17 # 79  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 The Nx25G-EPON synchronization pattern registers in 45.2.3.45a are registers 3.83 through 3.134  
 SuggestedRemedy  
 In table 45-176 change "3.83 through 3.135" to "3.83 through 3.134"  
 In the reserved row change "3.136 through 3.199" to "3.135 through 3.199"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.3 P39 L3 # 61  
 Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco  
 Comment Type E Comment Status D bucket  
 Editing instruction needs to include 802.3cg which also modified Table 45-176.  
 SuggestedRemedy  
 change "as modified by IEEE Std 802.3cb-2018 and IEEE Std 802.3cd-2018" to "as modified by IEEE Std 802.3cb-2018, IEE Std 802.3cd, and IEEE 802.3cg-201x)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.3.6.1 P39 L40 # 117  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A 45.2.3.6.1  
 Register bits 3.9.0 to 3.9.7 appear to all advertise PCS type abilities.  
 SuggestedRemedy  
 Change:  
 "bits 3.8.9, 3.8.7:0, and 3.9.15:0." to  
 "bits 3.8.9, 3.8.7:0, and 3.9.17:0."  
 Note the "1" in 3.9.1x is in strike-out text.  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 See comment #80

Cl 45 SC 45.2.3.6.1 P39 L41 # 80  
 Anslow, Pete Ciena  
 Comment Type T Comment Status A 45.2.3.6.1  
 The text as modified: "The PCS type abilities of the PCS are advertised in bits 3.8.9, 3.8.7:0, and 3.9.5:0. A PCS shall ignore writes to the PCS type selection bits that select PCS types it has not advertised in the PCS status 2 register." is not correct. It should read: "The PCS type abilities of the PCS are advertised in bits 3.8.9:0, and 3.9.7:0. A PCS shall ignore writes to the PCS type selection bits that select PCS types it has not advertised in the PCS status 2 register or the PCS status 3 register."

SuggestedRemedy  
 Change the second and third sentence of 45.2.3.6.1 to: "The PCS type abilities of the PCS are advertised in bits 3.8.9<u>:0</u><s>, 3.8.7:0,</s> and 3.9.<s>1</s><u>7</u>:0. A PCS shall ignore writes to the PCS type selection bits that select PCS types it has not advertised in the PCS status 2 register<u> or the PCS status 3 register</u>."  
 Where:  
 <u> and </u> are the start and end of underline font  
 <s> and </s> are the start and end of strikethrough font  
 Response Response Status C  
 ACCEPT.

Cl 45 SC 45.2.3.8 P40 L8 # 81  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 In Table 45-182, row for bit 3.9.7, "apable" should be "capable"  
 SuggestedRemedy  
 In Table 45-182, row for bit 3.9.7, change "apable" to "capable"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.3.43 P41 L39 # 84  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 "update" is not a valid editing instruction.  
 SuggestedRemedy  
 In the editing instruction, replace "Update" with "Change"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 45 SC 45.2.3.43 P41 L41 # 85  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 One of the changes shown in 45.2.3.43 to the name of register 3.80 (timer changed to interval) is not reflected in Table 45-176.  
 Note that another comment proposes to move the row in Table 45-3 for this register to Table 45-176 where it belongs.  
 SuggestedRemedy  
 After moving the row for register 3.80 from Table 45-3 to Table 45-176, reflect the change from "timer" to "interval" in the register name using underline and strikethrough.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.3.43 P41 L44 # 62  
 Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco  
 Comment Type E Comment Status D bucket  
 The font of "and" and "and Nx25G EPON" is smaller than the rest of the text.  
 SuggestedRemedy  
 fix font of "and", and "an Nx25G EPON"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.3.43 P41 L44 # 492  
 Brandt, David Rockwell Automation  
 Comment Type E Comment Status D post-deadline; bucket  
 Inconsistent font size.  
 SuggestedRemedy  
 Make fonts the same size.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.3.43 P42 L2 # 86  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 "76.3.3.4" should be in forest green. "142.3.5.6" should be a cross-reference.  
 Equivalent issues in 45.2.3.44.1 and 45.2.3.45  
 SuggestedRemedy  
 Convert to text and apply character tag "External" to:  
 "76.3.3.4" in 45.2.3.43  
 "76.3.3.4" in 45.2.3.44.1  
 "76.3.3.4" in 45.2.3.45  
 Make a cross-reference:  
 "142.3.5.6" in 45.2.3.43  
 "142.3.5.2" in 45.2.3.44.1  
 "142.3.5.6" in 45.2.3.45  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.3.43 P42 L5 # 328  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 underline of word stopped short  
 SuggestedRemedy  
 extend the underline to include the last letter in "interval"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.3.44 P42 L25 # 87  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 ", and Nx25G EPON" has been inserted after "BER" in the first sentence of 45.2.3.44 instead of before.  
 SuggestedRemedy  
 Move the insertion of ", and Nx25G EPON" before "BER" in the first sentence of 45.2.3.44 so that it reads "... 10/1GBASE-PRX, and Nx25G EPON BER monitor ..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 45 SC 45.2.3.44.1 P42 L49 # 88  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 In the first sentence of 45.2.3.44.1, there is a spurious " BER" after "10/1GBASE-PRX"  
 SuggestedRemedy  
 In the first sentence of 45.2.3.44.1, delete " BER" after "10/1GBASE-PRX"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.3.44.2 P43 L4 # 89  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 In the first sentence of 45.2.3.44.2, there is a spurious " BER" after "10/1GBASE-PRX" and " PCS" is missing after the insertion of ", and Nx25G EPON"  
 SuggestedRemedy  
 In the first sentence of 45.2.3.44.1, delete " BER" after "10/1GBASE-PRX" and add " PCS" after the insertion of ", and Nx25G EPON"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.3.45a P43 L43 # 307  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status A  
 Table 45-217a holds the 257-bit sync pattern values. Throughout Clause 45, there are a variety of ways that data is stored in a register when it is greater than 16-bits. Sometimes the lower bytes are stored in lower numbered registers (Table 45-242), and sometimes the opposite is true (Table 45-202). The order of the bytes should be stated in this table.  
 SuggestedRemedy  
 For the SP1 pattern row, change to "The lower 256 bits of SP1. Bit 0 is stored in 3.84.0, and bit 255 is stored in 3.99.15." Similar for SP2 and SP3 patterns. If this doesn't fit well in the table, then move to the text descriptions that follow the table.  
 Response Response Status C  
 ACCEPT.

Cl 45 SC 45.2.3.45a P43 L47 # 118  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A Table 45-217a  
 Table 217a is missing a definition for register bits 3.83.6:15  
 SuggestedRemedy  
 Add as first row of table:  
 3.83.15:6 | Reserved | Value always 0 | RO  
 Response Response Status W  
 ACCEPT.

Cl 45 SC 45.2.3.45a P43 L47 # 448  
 Nicholl, Shawn Xilinx  
 Comment Type E Comment Status R  
 SP1, SP2, etc. are already found throughout 802.3-2018 and are used in the context of "Skew Point". Consider a more unique abbreviation for "synchronization pattern". Unique abbreviations aid the general readability and search-ability of the standard.  
 SuggestedRemedy  
 Replace SP1 with SPTN1 throughout the document. Same for SP2, SP3, etc. SPTNx is merely a suggestion, any other unique acronym would work, too.  
 Response Response Status C  
 REJECT.  
 Terms are defined consistently. There are many other examples of overlapping acronyms that do not cause confusion, when read within the right context.  
 Also, please note that SP1, SP2, and SP3 are already used to represent two very different things: Service Primitives in C73 and Skew Points in C80 and 83

Cl 45 SC 45.2.3.45a P43 L47 # 119  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Register bits in Cl 45 tables are typically listed from high bit to low bit and low register to high register.  
 SuggestedRemedy  
 Reorder row for register bits 3.83.5 to 3.83.0 in Table 45-217a in descending bit order.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

**Cl 45**    **SC 45.2.3.45a**                      **P43**                      **L47**                      # **90**

Anslow, Pete                                      Ciena

**Comment Type**    **ER**                      **Comment Status**    **A**                      *Table 45-217a*

The table defining bit allocations in Clause 45 always have bit 15 at the top and descending bit numbers below.  
 Ranges of bits within a register are shown as x.x.a:b where a is higher than b  
 bits within a register that are not allocated are shown as reserved.

*SuggestedRemedy*

Change the order of rows in Table 45-217a and the bit designations as follows:  
 3.83.15:6 | Reserved | Value always 0 | RO  
 3.83.5  
 3.83.4  
 3.83.3  
 3.83.2  
 3.83.1  
 3.83.0  
 3.99.15 through 3.84.0  
 3.100.15:0  
 3.116.15 through 3.101.0  
 3.117.15:0  
 3.133.15 through 3.118.0  
 3.134.15:0

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

ACCEPT.

**Cl 45**    **SC 45.2.3.45a**                      **P44**                      **L10**                      # **120**

Remein, Duane                                      Futurewei Technologies, Inc.

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

Backwards the bits are in "3.1xx.0:15"

*SuggestedRemedy*

In 45.2.3.45a.x Change:  
 3.100.0:15 to 3.100.15:0 (4x total)  
 3.117.0:15 to 3.117.15:0 (4x total)  
 3.134.0:15 to 3.134.15:0 (3x total)

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

ACCEPT.

Hardly a TR comment material

**Cl 45**    **SC 45.2.3.80.2**                      **P49**                      **L31**                      # **474**

Brandt, David                                      Rockwell Automation

**Comment Type**    **E**                      **Comment Status**    **D**                      *wrong-ballot*

Duplicate text

*SuggestedRemedy*

Change: "is detecting is detecting", To: "is detecting"

**Proposed Response**                      **Response Status**    **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Issue not located. Given that 45.2.3.80.2 does not exist in the draft - is this a comment against P803.2ca?

**Cl 45**    **SC 45.2.3.80.4**                      **P49**                      **L47**                      # **475**

Brandt, David                                      Rockwell Automation

**Comment Type**    **E**                      **Comment Status**    **D**                      *wrong-ballot*

Description of non-latched source is wrong.

*SuggestedRemedy*

Change: "...PCS high BER status bit (3.2324.9)."  
 To: "...PCS high RFER status bit (3.2324.9)."

**Proposed Response**                      **Response Status**    **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Issue not located. Given that 45.2.3.80.4 does not exist in the draft - is this a comment against P803.2ca?

**Cl 45**    **SC 45.2.3.8aa**                      **P40**                      **L25**                      # **82**

Anslow, Pete                                      Ciena

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

The heading numbering for 45.2.3.8aa through 45.2.3.11ad should be 45.2.3.8.aa through 45.2.3.8.ad as per the editing instruction.

*SuggestedRemedy*

Change the heading numbering for 45.2.3.8aa through 45.2.3.11ad to 45.2.3.8.aa through 45.2.3.8.ad as per the editing instruction.

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

PROPOSED ACCEPT.



Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 45 SC 45.2.3.8aa P40 L28 # 83  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 At the end of the paragraph "the 25GBASE-PQ PCS type" should be "the 25/25GBASE-PQ PCS type"  
 SuggestedRemedy  
 At the end of the paragraph change "the 25GBASE-PQ PCS type" to "the 25/25GBASE-PQ PCS type"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 56 SC 56.1 P47 L1 # 91  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 Figures in 802.3 do not have a border round them.  
 SuggestedRemedy  
 Remove the border from Figure 56-5a  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 56 SC 56.1 P47 L1 # 395  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 Per IEEE Standards Style Manual, there should be no borders around the graphic. And, it doesn't match figs 56-2 to 5.  
 SuggestedRemedy  
 Remove the black box round the figure and its title.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 56 SC 56.1 P47 L3 # 400  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status A  
 Rogue capitals  
 SuggestedRemedy  
 Unless these are proper nouns, change "OLT Control Plane" and "OLT Data Plane" to "OLT control plane" and "OLT data plane" and similarly for ONU. Several occurrences.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #399

Cl 56 SC 56.1 P47 L3 # 399  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 Undefined terms "Control Plane", "Data Plane"  
 SuggestedRemedy  
 Explain  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.

Change all instances of "Control Plane" to "MAC Control Clients", and "Data Plane" to "MAC Clients"

Cl 56 SC 56.1.2 P46 L32 # 394  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 PON with the nominal MAC data  
 SuggestedRemedy  
 PON with a nominal MAC data (several places)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

## Proposed Responses

## IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 56 SC 56.1.2 P46 L38 # 378

Dawe, Piers Mellanox

Comment Type TR Comment Status R

This PHY sensibly keeps the 25.78125 GBd line rate but uses stronger FEC with 20% (Fig 142-5) or 1-1/0.848 = 17.9% (142.2.4.2) overhead. Even after reclaiming about 3% by 257b recoding, that's around 21.4 Gb/s MAC rate, which is too far from 25 to say "nominal MAC data rate of 25 Gb/s".

## SuggestedRemedy

Giving the PHY types names with 25G in them is fair, because that represents the technology used - but this part of the draft text is misleading.

In this paragraph, change "25 Gb/s" to "21.4 Gb/s" and "50 Gb/2" to "42.8 Gb/s".

Response Response Status W

REJECT.

The nominal (how quickly MAC transmits bits, i.e., what the resulting bit time is) MAC rate is correct in here, the effective MAC rate (how many bits it can effectively transmit within a second) is lower and affected by FEC overhead, just like any other PHY that uses FEC and PCS encoding. MAC does not always transmit data, but when it does, it transmits it at 25Gb/s

Cl 56 SC 56.1.2 P46 L52 # 396

Dawe, Piers Mellanox

Comment Type T Comment Status R

channel - has multiple meanings already - you are introducing a new thing

## SuggestedRemedy

Change "channel" to "wavelength" (or maybe "MCRS channel", several times. "PCS and PMA channel" can also be changed to "wavelength".

Response Response Status C

REJECT.

"Channel" is not equivalent to "Wavelength". Channels are defined in MCRS, PCS, and PMA, which are not aware of wavelengths. There are also several sets of wavelength defined for different coexistence classes, and each channel may map to a different wavelength in a different coexistence class (see 141.2.3). It is possible in some future project to map multiple channels into a single wavelength. The term "channel" is fundamental to the specifications in Clause 143. It is very precisely defined and that definition is confined to .3ca only. The term "wavelength" is also used multiple times in our draft in its original meaning.

Cl 56 SC 56.1.2 P47 L1 # 283

Wienckowski, Natalie General Motors

Comment Type E Comment Status D bucket

Why is there a box around Figure 56-5a? There is not a box around the other Clause 56 Figures and this is not they style found in other Clauses.

## SuggestedRemedy

Remove box around Figure 56-5a.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 56 SC 56.1.2 P47 L19 # 397

Dawe, Piers Mellanox

Comment Type T Comment Status A

"PCS channel" is new, may need more introduction.

## SuggestedRemedy

Are there two independent, parallel PCSs or are they linked (how)?

Response Response Status C

ACCEPT IN PRINCIPLE.

Change "PCS channel" to "channel"

Change "PCS and PMA channel" to "PMA channel"

Cl 56 SC 56.1.2 P47 L52 # 255

D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei

Comment Type E Comment Status D bucket

The architectural diagram has a border box around it. Not consistent with other Clause 56 diagrams in IEEE 802.3

## SuggestedRemedy

delete border box

Proposed Response Response Status W

PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 56 SC 56.1.2 P47 L52 # 256

D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei  
 Comment Type E Comment Status D bucket

Title of diagram not consistent with other similar diagrams in Clause 56 of 802.3  
 See also Fig 141-1, p56  
 See also Fig 142-1, p.104  
 See also Fig 143-17, p 173  
 See also Fig 144-2 P 182

SuggestedRemedy

rename title of diagram - Figure 56-4—Architectural positioning of EFM:  
 P2MP n X 25G-EPON architecture

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change title to read Figure 56-5a—Architectural positioning of EFM:  
 P2MP Nx25G-EPON architecture

Cl 56 SC 56.1.2 P47 L52 # 257

D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei  
 Comment Type E Comment Status R

Diagram not drawn in consistent manner with other similar diagrams in Clause 56.  
 Example- the vertical 25GMII text inside the diagram- as well as how the entire MII interface  
 is drawn  
 See also Fig 141-1, p56  
 See also Fig 142-1, p.104  
 See also Fig 143-17, p 173  
 See also Fig 144-2 P 182

SuggestedRemedy

redraw figure to be consistent with 56-1, 56-2, 56-3, 56-4.

Response Response Status C

REJECT.

Diagram is consistent with style in other .3ca clauses.

Cl 56 SC 56.1.3 P48 L38 # 92

Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket

Editing instructions do not include the project name and not all of the rows of the table are  
 shown.

SuggestedRemedy

Change editing instruction to: "Insert new PMD types at the end of Table 56-1 (below  
 10GPASS-XR-U entry), as follows (unchanged rows not shown):

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 56 SC 56.1.3 P48 L46 # 93

Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket

Only one body row of Table 56-1 (containing ellipsis) is shown before the page break.  
 As the editing instruction is "Insert", the inserted rows should not be underlined.

SuggestedRemedy

Move the first row of Table 56-1 on to the next page and remove the underlining from the  
 inserted rows.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 56 SC 56.1.3 P50 L21 # 94

Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket

Editing instructions use the term "paragraph" rather than "statement".  
 The "Insert" editing instruction does not use underline to indicate insertion.

SuggestedRemedy

In the editing instruction, change "after the statement" to "after the paragraph".  
 Remove the underline from the inserted text.

Proposed Response Response Status W

PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 56 SC 56.1.3 P50 L25 # 398

Dawe, Piers Mellanox

Comment Type T Comment Status A

You can't make a PON with a single PMD type. Also, there are options.

SuggestedRemedy

Change "All these systems employ a PMD defined in Clause 141." to "All these systems employ PMDs defined in Clause 141."

Response Response Status C

ACCEPT.

Cl 56 SC 56.1.3 P51 L6 # 427

Dawe, Piers Mellanox

Comment Type ER Comment Status R

The standard clause order is down the layer stack: MAC then RS then PCS then PMA then PMD. We are stuck with the eccentric order of some previous projects but we can do a new one right.

SuggestedRemedy

Renumber the clauses 141-144: MPMC then MCRS then PCS/PMA then PMD. We can also order the existing columns in Table 56-3 from top to bottom - they don't have to be in numerical order

Response Response Status W

REJECT.

The clause order follows the clause order used by P2MP projects before.

Cl 56 SC 56.1.3 P54 L5 # 284

Wienckowski, Natalie General Motors

Comment Type T Comment Status A

Clause 100 was removed from Table 56-3 but wasn't put into Table 56-4.

SuggestedRemedy

Add Clause 100 in Table 56-4.

Response Response Status C

ACCEPT.

Cl 67 SC 67 P55 L1 # 326

Laubach, Mark Broadcom

Comment Type TR Comment Status A

Draft is missing updates to Clause 67 for System considerations for Ethernet subscriber access networks

SuggestedRemedy

Update Table 67-1 as per laubach\_3ca\_1\_0719.pdf to add entries for the P802.3ca media types.

Response Response Status C

ACCEPT IN PRINCIPLE.

As proposed, but rather with the following changes:

- "50000" to "50 Gb/s",
- "25000" to "25 Gb/s"
- "10000" to "10 Gb/s"

Edit also the rate column, removing "Mb/s" from column title and change "100" to "100 Mb/s". Change all "1000" and "10000" entries to "Gb/s multiples. Updates notes accordingly as well.

Cl 141 SC 141 P55 L1 # 121

Remein, Duane Futurewei Technologies, Inc.

Comment Type E Comment Status D bucket

It is customary to include an editing Instruction prior to new clauses as noted in the WG Template v3.9.

SuggestedRemedy

Insert before Clause 141  
"Insert new clauses and corresponding annexes as follows:"

Proposed Response Response Status W

PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.1.2 P56 L1 # 17

Hajduczenia, Marek Charter Communications

Comment Type TR Comment Status A

Figure 141-1 shows Nx25G-EPON and not EPON.

SuggestedRemedy

Change "EPON" to "Nx25G-EPON" in caption.  
Also, we need to show XGMII in there as an option for OLT and ONU, since we also support asymmetric mode of operation with 10Gbps dat arate

Response Response Status C

ACCEPT IN PRINCIPLE.

Change "EPON" to "Nx25G-EPON" in caption.

See comment #122 for XGMII-related changes.

Cl 141 SC 141.1.2 P56 L1 # 122

Reimin, Duane Futurewei Technologies, Inc.

Comment Type TR Comment Status A

In Fig 141-1 (and the other similar figures in 142, 143, & 144) all show two 25GMII interfaces but never indicate use of the XGMII.

SuggestedRemedy

For each of the four figures in 2 places, adjacent to the right of OLT and ONU 25GMII, add "Note 1". Below the graphic and above the key add the following: "Note 1: in some instances of Nx25-EPON one-half of an XGMII (transmit or receive) may be paired with a complementary half (receive or transmit) of a 25GMII to provide a 25Gb/s downstream and 10Gb/s upstream interface."

Response Response Status W

ACCEPT IN PRINCIPLE.

This is true only for channel 0 interface. It is better to add two lettered footnotes:  
a) (attached to the first 25GMII interface) - "In some instances of Nx25-EPON one-half of an XGMII (transmit or receive) may be paired with its complementary peer (receive or transmit) of a 25GMII to provide a 25Gb/s downstream and 10Gb/s upstream interface."  
b) (attached to the second 25GMII interface) - "This interface may be absent in devices that do not support 50G-EPON PMDs."

Apply to ISO diagrams for .3ca in Clause 141, 142, 143, 144, and 56.

Cl 141 SC 141.1.3 P55 L31 # 356

Dudek, Mike Marvell

Comment Type T Comment Status A

Other than it saying DW0 +DW1 for the 50G link in table 141-7 and there being two wavelengths listed in table 141-3 etc. it is not obvious that wdm is being used for 50G.

SuggestedRemedy

Add a sentence at the end of the paragraph (at line 31). "Links supporting 50Gb/s use wavelength division multiplexing on two wavelengths and hence two wavelengths are listed for these links."

Response Response Status C

ACCEPT IN PRINCIPLE.

Use the following text with terminology alignment:

"Nx25G-EPON PHY Link Types supporting 50 Gb/s use wavelength division multiplexing on two wavelengths; two wavelengths are listed for these links in Table 141-1 through Table 141-5."

Cl 141 SC 141.1.3 P55 L38 # 285

Wienckowski, Natalie General Motors

Comment Type E Comment Status D

Missing non-breaking spaces in number that have 4 or more digits to the right of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.

SuggestedRemedy

Change: 25.78125  
To: 25.781 25

Proposed Response Response Status Z

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.1.3 P55 L39 # 286  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Missing non-breaking spaces in number that have 4 or more digits to the right of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.  
 SuggestedRemedy  
 Change: 10.3125  
 To: 10.312 5  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 141 SC 141.1.3 P57 L25 # 288  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Missing non-breaking spaces in number that have 4 or more digits to the right of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.  
 SuggestedRemedy  
 Change: 10.3125  
 To: 10.312 5  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 141 SC 141.1.3 P57 L8 # 287  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Missing non-breaking spaces in number that have 4 or more digits to the right of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.  
 SuggestedRemedy  
 Change: 25.78125  
 To: 25.781 25  
 Also on P57 L9, P57 L 24, P57 L40, P57 L41, P58 L 6, P58 L7, P66 L11, P67 L13, P71 L11, P72 L13, P73 L18, & P74 L14.  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 141 SC 141.2.5 P58 L1 # 403  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 "A medium PMD power class" and "A high PMD power class" but "The medium power budget class"  
 SuggestedRemedy  
 Per style manual: use the same name for the same thing, every time.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change "The medium power budget class" to "The medium PMD power class". Change "high power budget class" to "The high PMD power class"

Cl 141 SC 141.2.5 P58 L50 # 401  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 with the split ratio of  
 SuggestedRemedy  
 with a split ratio of  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

## Proposed Responses

## IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.2.5 P58 L50 # 402  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 Will these work over less than 1:16 and/or less than 20 km? As stated, it's all about overload. But that contradicts " $\leq x$  dB".  
 SuggestedRemedy  
 Rephrase "at least".  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Delete the "at least" statements for both power budgets.

Cl 141 SC 141.2.6 P59 L9 # 18  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 it would be easier on reader's eyes to see  $r_{<sub>1</sub>}$  and not  $r_1$ . Same for  $r_2$ . This is used only in this clause, so changes are minimum  
 SuggestedRemedy  
 Per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.2.6 P59 L17 # 406  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status A  
 "rate class (in Gb/s)", "PMDs operate at Gigabit rates"  
 SuggestedRemedy  
 Gigabit -> gigabit/s. But actually, G is a multiplier for  $r_1/r_2$   
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change "Nx25G-EPON PMD naming conforms to the following convention" to "Nx25G-EPON PMD naming conforms to the following semantic convention"  
 Change "class (in Gb/s)" to "class" in 2 instances.  
 Change "PMDs operate at Gigabit rates" to "PMDs operate at Gb/s rates"

Cl 141 SC 141.2.6 P59 L18 # 405  
 Dawe, Piers Mellanox  
 Comment Type TR Comment Status A  
 Optical PMDs don't use a baseband signal! 1.2.3 says only "The modulation type (e.g., BASE) indicates how encoded data is transmitted on the medium".  
 SuggestedRemedy  
 So far, optical PMDs all have BASE in their name (so in effect, it just signifies Ethernet) and all use "intensity modulation". However, P802.3ct may call coherent PMDs "BASE" too. This cell could be left blank.  
 Response Response Status W  
 ACCEPT.

Cl 141 SC 141.2.7 P59 L29 # 408  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 paired PMDs transmitter launch power and receiver sensitivity  
 SuggestedRemedy  
 paired PMD's transmitter launch powers and receiver sensitivities  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change to "paired PMDs' transmitter launch powers and receiver sensitivities"

Cl 141 SC 141.2.7 P59 L29 # 407  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 "a power budget is a characteristic of a link"  
 SuggestedRemedy  
 No, attenuation or "insertion loss" is a characteristic of the link. A power budget is a characteristic of a pair of PMD types, of a link type, or of a class of links.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change  
 "a power budget is a characteristic of a link"  
 to  
 "a power budget is a characteristic of a link type"

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.2.7 P59 L33 # 410  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 Aside from the notes about "same coexistence mode, either X or G": If one is not interested in coexistence, (or even if one is), in what circumstances can a G connect to another G, or to an X?  
 SuggestedRemedy  
 Spell it out clearly  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Add a new sentence on page 59, line 34 (end of existing para): "Connection between G and X coexistence type PMDs is not supported, e.g., 25/10GBASE-PQG-D2 OLT PMD is not interoperable with 25/10GBASE-PQX-U2 due to non-overlapping OLT receiver sensitivity window and ONU transmitter wavelength range."

Cl 141 SC 141.2.7 P59 L35 # 329  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 Table 141-7, as table is split across pages, missing bottom ruling of table on page 59 and missing "(continued)" in table title on page 60. This is Framemaker table stuff.  
 SuggestedRemedy  
 Add the ruling. Do the variable thing to add the "(continue)".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.2.7 P59 L38 # 409  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 Downstream  
 SuggestedRemedy  
 Break after the /  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.2.7 P59 L40 # 19  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 Footnote (b) location in Table 141-7 is odd (it moved to a new line)  
 SuggestedRemedy  
 Make sure footnote (b) location is with the main text of the column caption (extend column size a bit)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.2.7 P60 L1 # 20  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 No "(continued)" marker for Table 141-7 caption  
 SuggestedRemedy  
 Make sure it is added  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.2.7.1 P60 L19 # 21  
 Hajduczenia, Marek Charter Communications  
 Comment Type T Comment Status A  
 "Table 141-8 illustrates recommended pairings ..." - it implies these are just recommendations and other pairings are possible  
 SuggestedRemedy  
 Strike "recommended"  
 Response Response Status C  
 ACCEPT.



Proposed Responses

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Cl 141 SC 141.2.7.1 P60 L41 # 22  
 Hajduczenia, Marek Charter Communications  
 Comment Type T Comment Status R  
 Subclause 141.2.3 refers to coexistence options as coexistence classes and not coexistence modes  
 SuggestedRemedy  
 Change "support the same coexistence mode" to "support the same coexistence class"  
 The same change on Page 61, like 25  
 Response Response Status C  
 REJECT.  
 "support the same coexistence class" is wrong. They either support the same coexistence mode, or they belong to the same coexistence class.

Cl 141 SC 141.3 P61 L29 # 123  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 There are 9 instance of "PQ type PMD" and 15 instances of "Nx25G-EPON PMD". These two terms are synonymous and we should only use one. Note that Fig 141-2 is referred to using PQ type PMDs but the title indicates Nx25F-EPON PMD and Table 141-1 title is " for Nx25G-EPON PMDs" but PMD type is "PQ type PMD".  
 Fewer new terms are easier on the 1st time reader.  
 SuggestedRemedy  
 Change all instance of "PQ type PMD" to "25G-EPON PMD"  
 Note 1x in Cl 142  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Change all instance of "PQ type PMD" to "Nx25G-EPON PMD"

Cl 141 SC 141.3.1.1 P61 L50 # 411  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 EQT?  
 SuggestedRemedy  
 As this is its first apperance, explain, e.g. with a cross-reference  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Insert cross reference to 1.4.245b

Cl 141 SC 141.3.1.2 P62 L1 # 413  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 80.3.3.1 has "The IS\_UNITDATA\_i.request (where i = 0 to n – 1) primitive is used..." Why does this use [ ] notation for what seems to be an equivalent thing?  
 SuggestedRemedy  
 Be consistent. Explain what i is.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Insert "(where i = 0 or 1)", after:  
 - PMD\_UNITDATA[i].request(tx\_bit), page 62, line 5  
 - PMD\_UNITDATA[i].indication(rx\_bit), page 62, line 18  
 - PMD\_SIGNAL[i].request(tx\_enable), page 62, line 31  
 - PMD\_SIGNAL[i].indication(SIGNAL\_DETECT), page 62, line 39  
 Add the statement: "For any indexed test point (e.g., TP1[i]), [i] indicates the channel index, where i = 0 or 1." at the end of para on page 62, line 52.

Cl 141 SC 141.3.1.2 P62 L8 # 412  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 signaling speed  
 SuggestedRemedy  
 signaling rate  
 Response Response Status C  
 ACCEPT.  
 Change all instances

## Proposed Responses

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Cl 141 SC 141.3.3 P64 L2 # 414  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 As there are three levels  
 SuggestedRemedy  
 Change "higher" to "highest"  
 Response Response Status C  
 ACCEPT.

Cl 141 SC 141.3.3 P64 L2 # 355  
 Dudek, Mike Marvell  
 Comment Type TR Comment Status D  
 I could not find which bits are allocated to DW1 and which to DW0. I would have expected that information to be in 141.3.3 and 141.3.4. Does it matter? (I suspect it does).  
 SuggestedRemedy  
 Add the extra information or state explicitly that it doesn't matter.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 The PMD transmitter does not stripe the bits it receives from a single electrical interface into multiple wavelength. Instead, the receiver has independent electrical interfaces for each channel and maps each channel to a corresponding wavelength. The assignment of bits to separate channels happens in the MCRS.  
 \*\*\* This might be the issue of [i] and how it is mapped into individual wavelengths - to be discussed

Cl 141 SC 141.3.6 P64 L45 # 415  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 Just saying "it's defined" isn't enough.  
 SuggestedRemedy  
 Define it (at a superficial level), or refer to somewhere that does.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Strike 141.3.6 and its contents. Primitive is already defined in 141.3.1.4.

Cl 141 SC 141.5 P65 L # 350  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 There are 48 uses of a plus-minus symbol in the draft. The majority uses a non-breaking space between the symbol and the following number. Suggest making the 5 uses in lines 6 through 7 and 15 through 19 consistent.  
 SuggestedRemedy  
 Add the non-breaking space after the plus-minus symbol.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.5 P65 L24 # 124  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 There are 2 instances of "PQ PHY". Whereas Nx25G-EPON PHY appears 256 times. Random new terms are not desirable.  
 SuggestedRemedy  
 Change  
 "PQ PHY" to  
 "Nx25G-EPON PHY"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.5 P65 L25 # 125  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 There are 2 instances of "PQ compliant". Whereas Nx25G-EPON PHY appears 256 times. Random new terms are not desirable.  
 SuggestedRemedy  
 Change all instances of  
 "PQ compliant" to  
 "Nx25G-EPON compliant"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.5.1 P66 L16 # 95

Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket

IEEE uses an en-dash as a minus sign  
 Empty cells in tables contain an em-dash

SuggestedRemedy

Change the minus sign to an en-dash (Ctrl-q Shft-p) throughout the entire draft. For example:

- 3 instances in Table 141-13
- 3 instances in Table 141-14
- 8 instances in Table 141-15 (and footnote d)
- 9 instances in Table 141-16 (and footnote e)
- 3 instances in Table 141-17
- 3 instances in Table 141-18
- 8 instances in Table 141-19 (and footnote c)
- 8 instances in Table 141-20
- 4 instances in Table 141-21
- etc.

Populate empty table cells with an em-dash (Ctrl-q Shft-q) throughout the entire draft. For example:

- 2 instances in Table 141-13
- 2 instances in Table 141-14
- 2 instances in Table 141-17
- 2 instances in Table 141-18
- etc.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.5.1 P66 L22 # 96

Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket

">=" should be a single character (Ctrl-q 8 in Symbol font)  
 Same issue in Table 141-14

SuggestedRemedy

change ">=" to a single character (Ctrl-q 8 in Symbol font) here and in Table 141-14 (page 67, line 22)

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.5.1 P66 L27 # 416

Dawe, Piers Mellanox  
 Comment Type TR Comment Status R

An extinction ratio minimum of 8 dB sounds like an unhelpful constraint, which may force implementers to set up at worse TDP than they could have done.

SuggestedRemedy

Relax the extinction ratio minimum, add another OMA-TDP class at line 24 as necessary. This will cost the receiver nothing and widen the implementation options for the transmitter. Adjust note b from "at minimum extinction ratio" to "at 8 dB extinction ratio".

Response Response Status W  
 REJECT.

All PMD parameter calculations have been done around ER (min) of 8dB and any changes to ER value would cause ripple effects for all receive side specs. A complete proposal for Tx and Rx specifications for lower ER (min) value would be needed. To date experimental data shows ER (min) of 8dB not presenting any issues.

Cl 141 SC 141.5.1 P66 L34 # 417

Dawe, Piers Mellanox  
 Comment Type TR Comment Status D

10GBASE-SR: BER 1e-12, TDP max 3.9, mask {0.25, 0.40, 0.45, 0.25, 0.28, 0.40} ("no hits") or {0.235, 0.395, 0.45, 0.235, 0.265, 0.4} at 5e10-5 hits/sample  
 40GBASE-SR4: BER 1e-12, TDP max 3.5, mask {0.23, 0.34, 0.43, 0.27, 0.35, 0.4} at 5e10-5 hits/ sample  
 25GBASE-SR: BER 5e10-5, TDEC max 4.3 dB, mask {0.3, 0.38, 0.45, 0.35, 0.41, 0.5} at 1.5e-3 hits/sample. KR FEC  
 25GBASE-LR, ER: BER 5e10-5, TDP max 2.7 dB, {0.31, 0.4, 0.45, 0.34, 0.38, 0.4} at 5e-5 hits/sample. KR FEC  
 This draft OLT: BER 1e-2, TDP max 1.5 dB, {0.25, 0.4, 0.45, 0.25, 0.28, 0.4} at 5e-5 hits/sample. QC-LDPC FEC  
 ONU BER 1e-2, TDP max 2 dB, mask coordinates as 25GBASE-LR, ER. QC-LDPC FEC

SuggestedRemedy

So we need a new mask hit ratio, somewhere near 1e-2, and should review the mask coordinates when that is known.

Proposed Response Response Status W  
 PROPOSED REJECT.

No specific new mask hit ratio was proposed.

\*\*\* Homework for this meeting. If no mask is available, an editorial note indicating it is homework for next meeting will be inserted.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.5.1 P66 L35 # 23  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A  
 "the OMA (min) must exceed this value" - sounds like it is intended to be a hard requirement? If that is the case, it should be converted into a "shall" statement and PICS updated accordingly  
 SuggestedRemedy  
 Per comment. The same comment applies to page 67, like 35; page 71, line 46, and page 72, line 42  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 The footnotes are already normative as formatted right now.  
 Convert "must" statements into informative statements, e.g., "(min) must exceed this value" becomes "(min) exceeds this value"

Cl 141 SC 141.5.2 P68 L3 # 126  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 50/25GBASE-PQG-D2 and 50/25GBASE-PQX-D2 appear in Table 141-15 twice, once with a single receive wavelength and once with two.  
 The same issue exists in Tables 141-16, 141-17 & 141-18.  
 SuggestedRemedy  
 Remove the 2nd instance (indicating 2 center wavelengths) of both.  
 Response Response Status W  
 ACCEPT.

Cl 141 SC 141.5.2 P68 L32 # 418  
 Dawe, Piers Mellanox  
 Comment Type TR Comment Status D  
 If these PMDs use FEC, probably the stressed receive signal should be defined by SEC, J2 and J4, as 25GBASE-SR, LR and ER, rather than VECF, J2 and J9 as 40GBASE-SR4.  
 SuggestedRemedy  
 But as the pre-BER is 1e-2, even J4 is wrong. Maybe Jrms and J3 would be suitable. SEC can easily be defined for a BER of 1e-2.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 No specific value was proposed  
 \*\*\* Homework for Bill

Cl 141 SC 141.5.2 P68 L35 # 439  
 Powell, William Nokia  
 Comment Type TR Comment Status A  
 Tables 141-15: In addition to "Vertical eye closure penalty", footnote (f) should also apply to "Stressed eye J2 Jitter" and "Stressed eye J9 Jitter" since it refers to all 3 parameters, and to make it consistent with footnote (e) in Table 141-19.  
 SuggestedRemedy  
 Apply footnote (f) to "Stressed eye J2 Jitter" and "Stressed eye J9 Jitter" in Table 141-15.  
 Response Response Status C  
 ACCEPT.

Cl 141 SC 141.5.2 P68 L37 # 310  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status A  
 Table 141-15 references Table 75-6, which does not contain two entries for stressed eye jitter.  
 SuggestedRemedy  
 Mark this cell as not applicable.  
 Response Response Status C  
 ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.5.2 P69 L20 # 437

Powell, William Nokia  
 Comment Type TR Comment Status A Average receive power

Table 141-16 has an entry for Average receive power, each channel (min) while it's medium power class cousin, Table 141-15, does not, which is not consistent. That entry should be removed per the rationale in comment #279 on D1.1 (John Johnson): "The inclusion of an informative spec on minimum average receive power doesn't serve any purpose to specify a compliant RX. An RX that meets the requirements of maximum receiver sensitivity (OMA) and maximum stressed receiver sensitivity (OMA) is compliant, even for very low values of AVP associated with very high ER signals."

SuggestedRemedy

Remove Average receive power, each channel (min) from Table 141-16.

Response Response Status C

ACCEPT IN PRINCIPLE.

See comment #446

Cl 141 SC 141.5.2 P69 L20 # 446

Johnson, John Broadcom  
 Comment Type T Comment Status A Average receive power

The inclusion of an informative spec on minimum average receive power doesn't serve any purpose to specify a compliant RX. An RX that meets the requirements of maximum receiver sensitivity (OMA) and maximum stressed receiver sensitivity (OMA) is compliant, even for very low values of AVP associated with very high ER signals. This line should be removed from Table 141-16. (This repeats a comment originally submitted against D1.1)

SuggestedRemedy

Delete the line for "Average receive power, each channel (min)" in Table 141-16 and remove associated footnote (d).

Response Response Status C

ACCEPT.

Cl 141 SC 141.5.2 P69 L20 # 308

Lynskey, Eric Broadcom  
 Comment Type T Comment Status A

Table 141-16 references Table 75-6, which does not contain an entry for Average receive power (min).

SuggestedRemedy

Mark this cell as not applicable.

Response Response Status C

ACCEPT.

Cl 141 SC 141.5.2 P69 L37 # 441

Powell, William Nokia  
 Comment Type TR Comment Status A

Table 141-16: In addition to "Vertical eye closure penalty", footnote (g) should also apply to "Stressed eye J2 Jitter" and "Stressed eye J9 Jitter" since it refers to all 3 parameters, and to make it consistent with Table 141-19.

SuggestedRemedy

Apply footnote (g) to "Stressed eye J2 Jitter" and "Stressed eye J9 Jitter" in Table 141-16.

Response Response Status C

ACCEPT.

Cl 141 SC 141.5.2 P69 L38 # 309

Lynskey, Eric Broadcom  
 Comment Type T Comment Status A

Table 141-16 references Table 75-6, which does not contain two entries for stressed eye jitter.

SuggestedRemedy

Mark this cell as not applicable.

Response Response Status C

ACCEPT.

Cl 141 SC 141.6 P70 L7 # 127

Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A

Table 141-21 does not list media types as asserted in the following "A PQ compliant transceiver operates over the media types listed in Table 141-21 according to the specifications described in 141.9". We could restructure the table similar to Table 75-14 or change the statement.

SuggestedRemedy

Change:  
 "media types listed in" to  
 "media meeting the dispersion shown in"

Response Response Status C

ACCEPT.

Comment type was changed to "T".

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.6.2 P73 L39 # 25  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A  
 Explicit "shall" statement with no paired PICS  
 SuggestedRemedy  
 Given that the table is normative as is, if this statement needs to be normative on its own, it needs to be added extra into PICS independently. Given that the same statement exists for each OLT and ONU receiver type, we could either add a new statement to 141.10.4.1 (FN13) or add a new statement into each and every PICS subclause for every PMD type (141.10.4.2 onwards). My preference is on the first approach  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change "The receiver shall be able to tolerate" to "The receiver tolerates".  
 Similar change under Table 141–15, Table 141–16, Table 141–20.

Cl 141 SC 141.6.2 P74 L19 # 447  
 Johnson, John Broadcom  
 Comment Type T Comment Status A Average receive power  
 The inclusion of an informative spec on minimum average receive power doesn't serve any purpose to specify a compliant RX. An RX that meets the requirements of maximum receiver sensitivity (OMA) and maximum stressed receiver sensitivity (OMA) is compliant, even for very low values of AVP associated with very high ER signals. This line should be removed from Table 141-20. (This repeats a comment originally submitted against D1.1)  
 SuggestedRemedy  
 Delete the line for "Average receive power, each channel (min)" in Table 141-20.  
 Response Response Status C  
 ACCEPT.

Cl 141 SC 141.6.2 P74 L19 # 438  
 Powell, William Nokia  
 Comment Type TR Comment Status A Average receive power  
 Table 141-20 has an entry for Average receive power, each channel (min) while it's medium power class cousin, Table 141-19, does not, which is not consistent. That entry should be removed per the rationale in comment #283 on D1.1 (John Johnson): "The inclusion of an informative spec on minimum average receive power doesn't serve any purpose to specify a compliant RX. An RX that meets the requirements of maximum receiver sensitivity (OMA) and maximum stressed receiver sensitivity (OMA) is compliant, even for very low values of AVP associated with very high ER signals."  
 SuggestedRemedy  
 Remove Average receive power, each channel (min) from Table 141-20.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #447

Cl 141 SC 141.6.2 P74 L30 # 440  
 Powell, William Nokia  
 Comment Type TR Comment Status A  
 Tables 141–20: In addition to "Vertical eye closure penalty", footnote (f) should also apply to "Stressed eye J2 Jitter" and "Stressed eye J9 Jitter" since it refers to all 3 parameters, and to make it consistent with footnote (e) in Table 141-19.  
 SuggestedRemedy  
 Apply footnote (f) to "Stressed eye J2 Jitter" and "Stressed eye J9 Jitter" in Table 141-20.  
 Response Response Status C  
 ACCEPT.

Cl 141 SC 141.7 P75 L4 # 24  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D  
 SuggestedRemedy  
 Proposed Response Response Status Z  
 REJECT.  
 This comment was WITHDRAWN by the commenter.

## Proposed Responses

## IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.7.1 P75 L11 # 56  
 Kolesar, Paul CommScope  
 Comment Type T Comment Status A  
 Suboptimal and possibly conflicting reference for insertion loss testing. The ITU reference is mostly for measurements in a factory environment. The IEC reference in clause 141.9.1 is for installed cabling and more relevant to the qualification of cable plant in the field.  
 SuggestedRemedy  
 Replace "A suitable test method is described in ITU-T G.650.1." with "Insertion loss measurements of installed fiber cables are made in accordance with IEC 61280-4-2."  
 Response Response Status C  
 ACCEPT.

Cl 141 SC 141.7.2 P75 L18 # 128  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 We should note that Table 88-11 specifies "valid 100GBASE-R signal" in some instances.  
 SuggestedRemedy  
 Add to the end of the para "A valid 25G-EPON signal is substituted for the 100GBASE-R signal specified in Table 88-16."  
 Highlight Table 88-16 in forest green.  
 Response Response Status C  
 ACCEPT.

Cl 141 SC 141.7.4 P75 L31 # 419  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 ANSI/EIA-455-95 is not in the normative references but IEC 61280-1-1 is.  
 SuggestedRemedy  
 ANSI/EIA-455-95 to IEC 61280-1-1  
 Response Response Status C  
 ACCEPT.

Cl 141 SC 141.7.5 P75 L36 # 57  
 Kolesar, Paul CommScope  
 Comment Type T Comment Status A  
 Incorrect reference to test method. Digits appear transposed.  
 SuggestedRemedy  
 Replace 61820-2-2 with 61280-2-2.  
 Response Response Status C  
 ACCEPT.

Cl 141 SC 141.7.9 P76 L # 421  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 141.7.9.1 reference Tx, 141.7.9.3 reference Rx and 141.7.9.4 (BER) don't apply to the 10G Tx in an ONU.  
 SuggestedRemedy  
 Add text to make this clear, as it is in 141.7.10, Receive sensitivity and 141.7.11, SRS.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change "141.7.9 Transmitter and dispersion penalty (TDP)" to "141.7.9 Transmitter and dispersion penalty (TDP) for 25G"

Cl 141 SC 141.7.9 P76 L6 # 420  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 141.7.9 (TDP) references 88.8.5 but 88.8.5.4 says "as defined in 52.9.10.4 ...the BER of  $1 \times 10^{-12}$ ". However, 141.7.9.4 says BER of  $1 \times 10^{-2}$ .  
 SuggestedRemedy  
 Change "with an optical channel that meets the requirements listed in 141.7.9.2" to "with the exceptions in 141.7.9.2 and 141.7.9.4".  
 Response Response Status C  
 ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.7.9.2 P76 L22 # 97  
 Anslow, Pete Ciena  
 Comment Type T Comment Status A  
 The equation for Dmin (Equation 141-1) is the minimum of three terms:  
 0  
 $0.365 \cdot \lambda \cdot (1 - (1324/\lambda)^4)$   
 $0.465 \cdot \lambda \cdot (1 - (1324/\lambda)^4)$   
 When  $\lambda$  is greater than 1324 nm, the second and third terms are positive and Dmin is zero.  
 When  $\lambda$  is less than 1324 nm, the second and third terms are negative and the third term is always more negative than the second term.  
 Consequently, the second term has no effect on the value of Dmin and should be deleted.  
 Likewise in the equation for Dmax (Equation 141-2) the second term has no effect on the value of Dmax and should be deleted.

*SuggestedRemedy*  
 In Equation (141-1) delete the second term  $0.365 \cdot \lambda \cdot (1 - (1324/\lambda)^4)$  leaving:  
 $D_{min} = \min(0, 0.465 \cdot \lambda \cdot (1 - (1324/\lambda)^4))$

In Equation (141-2) delete the second term  $0.365 \cdot \lambda \cdot (1 - (1300/\lambda)^4)$  leaving:  
 $D_{max} = \max(0, 0.465 \cdot \lambda \cdot (1 - (1300/\lambda)^4))$

Response Response Status C  
 ACCEPT.

Cl 141 SC 141.7.9.4 P76 L44 # 129  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 This is the only instance of "lane" that doesn't apply to the IEEE address (as in Hoe's Lane) or an xMII lane.

*SuggestedRemedy*  
 Change "lane" to "channel"

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.7.10 P76 L47 # 130  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 Unwarranted Wild Goose Chase . Here -> 141.7.2 -> Table 88-11.  
 Also I don't think we define Rx sensitive for test patterns.

*SuggestedRemedy*  
 Change  
 "Receiver sensitivity is defined for test patterns in 75.7.3 (10G) and 141.7.2 (25G)." to  
 "The test patterns in 75.7.3 (10G) and Table 83-11 (25G) are used to test receiver sensitivity."  
 "75.7.3" & "Table 88-11" in forest green.

Response Response Status C  
 ACCEPT IN PRINCIPLE.

Comment type changed to "T"  
 After editorial fixes

Change  
 "Receiver sensitivity is defined for test patterns in 75.7.3 (10G) and 141.7.2 (25G)." to  
 "The test patterns in 75.7.3 (10G) and 141.7.2 (25G) are used to test receiver sensitivity."  
 "75.7.3" in forest green.

Cl 141 SC 141.7.10 P76 L48 # 422  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 Receive sensitivity

*SuggestedRemedy*  
 Receiver sensitivity

Proposed Response Response Status W  
 PROPOSED ACCEPT.



Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.7.12 P77 L12 # 424  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status D  
 "When measuring jitter at TP1[i] and TP5[j]" do we give even recommendations for jitter at TP1[i] and TP5[j] in this clause?  
 SuggestedRemedy  
 Delete? Change to address the jitter measurements we do have (in SRS calibration)?  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 No specific value was proposed.  
 \*\*\* Homework for Bill

Cl 141 SC 141.7.12 P77 L12 # 423  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status D  
 Filtering out the low frequency jitter is a necessary part of the definition, it can't be left "recommended" or there is significant ambiguity.  
 SuggestedRemedy  
 Usually the same reference CRU as for several other definitions is invoked. This can be done by reference.  
 We may need to say more, e.g. references to the jitter metrics such as J2.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 No specific value was proposed.  
 \*\*\* Homework for Bill

Cl 141 SC 141.7.13.1 P78 L7 # 425  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status R  
 Fig 141-3 does not show Toff correctly. 15% does not come into it.  
 SuggestedRemedy  
 It's simply the time to the average power of OFF transmitter in the relevant table.  
 Response Response Status C  
 REJECT.  
 In subclause 141.7.13.2, Toff measurement does include 15% threshold for measurement of Toff.

Cl 141 SC 141.7.13.2 P77 L41 # 131  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 There is no TP4 in Figure 141-4: "the optical signal at TP3 to an electrical signal at TP4 ..."  
 SuggestedRemedy  
 Strike "at TP4"  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Add TP4 between converter and scope.

Cl 141 SC 141.7.13.2 P77 L42 # 29  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "A scope, with a variable delay, can measure" to "A scope, with a variable delay, is able to measure"  
 Response Response Status C  
 ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.7.13.2 P77 L49 # 26  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A must-vs-shall  
 "must" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "Notice that only the steady state optical OFF power must be conformed" to  
 "Notice that only the steady state optical OFF power is expected to be conformed"  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change "Notice that only the steady state optical OFF power must be conformed" to  
 "Notice that only the steady state optical OFF power is confirmed"

Cl 141 SC 141.7.13.2 P78 L1 # 98  
 Anslow, Pete Ciena  
 Comment Type ER Comment Status A redraw  
 Some of the figures in the draft are appropriately drawn. However, a number of the figures  
 are inserted as bit maps.  
 This has several drawbacks: the rendition of the figures is poor making small text difficult to  
 read, the use of bit maps increases the file size unnecessarily, the text content of the  
 figures is not searchable and most importantly, including non-editable figures makes life  
 difficult if changes are required in Maintenance after the figure has been incorporated into  
 the next revision.  
 SuggestedRemedy  
 Go through the entire draft replacing figures that have been pasted as bit maps with  
 versions that are drawn in FrameMaker.  
 If there are any figures illustrating equations, use a vector graphics (e.g. .svg format) and  
 apply any text annotations in FrameMaker.  
 Example figures needing to be replaced are Figures 141-3, 142-2, 142-5, 142-6, 142-7, 142-  
 8, 142-9, 142-13, 142-14, 142-15, 142-16, 142-18, 143-1, 143-2, 143-3, 143-4, 143-5, 143-  
 6, 143-7, 143-8, 143-9, 143-12, 143-13, 143-15, 143-16, 144-3, 144-4, 144-5, 144-6, 144-7,  
 144-8, 144-9, 144-10, 144-11, 144-12, 144-13, 144-14, 144-15, 144-16, 144-17,  
 144-18, 144-20, 144-21, 144-22, 144-23, 144-24, 144-25, 144-26, 144-27, 144-28, 144-29,  
 144-31, 144-32, 144-33, 144-34, 142A-1  
 Response Response Status W  
 ACCEPT.

Cl 141 SC 141.7.14 P78 L48 # 132  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 The illustration is Figure 141-5 not 141.7.13.2  
 SuggestedRemedy  
 Change "141.7.13.2" to "Figure 141-5"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.7.14 P78 L48 # 426  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 141.7.13.2  
 SuggestedRemedy  
 141.7.14.2  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See comment #132

Cl 141 SC 141.7.14.2 P79 L49 # 27  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A  
 "must" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "time must be met in the following scenarios" to "time is expected to be met in the  
 following scenarios"  
 Response Response Status C  
 ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.9.1 P81 L10 # 55  
 Kolesar, Paul CommScope  
 Comment Type T Comment Status A  
 Outdated reference to 61280-2-4:2000  
 SuggestedRemedy  
 This standard was revised in 2014. But the reference should be undated to always imply the latest revision. Remove ":2000" from the reference.  
 Response Response Status C  
 ACCEPT.

Cl 141 SC 141.9.2 P81 L25 # 435  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 Max Dispersion (at 20km)  
 SuggestedRemedy  
 Max dispersion (at 20 space km)  
 Similarly for Min  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.9.2 P81 L17 # 369  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 described in Table 141-21  
 SuggestedRemedy  
 given in Table 141-21  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.9.2 P81 L28 # 370  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 section  
 SuggestedRemedy  
 Make the table full width  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 141 SC 141.9.2 P81 L25 # 100  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 In Table 141-21 "20km" should be "20 km" (space between a number and its unit)  
 SuggestedRemedy  
 In Table 141-21, change "20km" to "20 km" (2 instances)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 141 SC 141.9.2 P81 L30 # 99

Anslow, Pete Ciena  
 Comment Type E Comment Status A

The first sentence of footnote b to Table 141-21 is: "These dispersion requirements are satisfied by fibers specified in ITU-T G.652D (low water peak, dispersion unshifted SMF) and ITU-T G.657A (bend-insensitive SMF)."  
 The two ITU-T Recommendations are G.652 and G.657. The 2016 version of G.652 (as referenced by the P802.3ca draft) contains specifications for two fiber types G.652.B and G.652.D (note the extra dot between 652 and the letter B or D). The 2009 version of G.657 (as per the base standard) contains specifications for two fiber types G.657 Category A and G.657 Category B. The 2016 version of G.657 (not referenced) contains specifications for two fiber types G.657.A and G.657.B.  
 Consequently, the first sentence of footnote b to Table 141-21 is incorrect.

*SuggestedRemedy*

Change the first sentence of footnote b to Table 141-21 to either:  
 "These dispersion requirements are satisfied by fibers specified in ITU-T G.652 (low water peak, dispersion unshifted SMF) and ITU-T G.657 (bend-insensitive SMF)."  
 or:  
 "These dispersion requirements are satisfied by G.652.D fibers specified in ITU-T G.652 (low water peak, dispersion unshifted SMF) and G.657 Category A fibers specified in ITU-T G.657 (bend-insensitive SMF)."  
 or:  
 "These dispersion requirements are satisfied by G.652.D fibers specified in ITU-T G.652 (low water peak, dispersion unshifted SMF) and G.657.A fibers specified in ITU-T G.657 (bend-insensitive SMF)."  
 and change the reference in 1.3 to be for the 2016 version of G.657

Response Response Status C

ACCEPT IN PRINCIPLE.

"These dispersion requirements are satisfied by G.652.D fibers specified in ITU-T G.652 (low water peak, dispersion unshifted SMF) and G.657.A fibers specified in ITU-T G.657 (bend-insensitive SMF)."

and update the reference in 1.3 to be for the 2016 version of G.657

Cl 141 SC 141.10.4.1 P87 L24 # 101

Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket

The PICS proforma tables in 141.10.4.1 do not have the appropriate entries in the "Support" column.  
 Same issue in 141.10.4.42 (OM10), 142.5.4, 142.5.5, 143.5.4.2, 144.5.4.1, 144.5.4.2, 144.5.4.4, 144.5.4.5

*SuggestedRemedy*

In 149.11.4.1, 141.10.4.42 (OM10), 142.5.4, 142.5.5, 143.5.4.2, 144.5.4.1, 144.5.4.2, 144.5.4.4, 144.5.4.5 for items with status of:  
 "M" change the Support entry to "Yes [ ]"  
 "O" change the Support entry to "Yes [ ] No [ ]"  
 "Something:M" change the Support entry to "Yes [ ] N/A [ ]"  
 "Something:O" change the Support entry to "Yes [ ] No [ ] N/A [ ]"  
 "O.Number" change the Support entry to "Yes [ ] No [ ]"  
 "O/Number" change the Support entry to "Yes [ ] No [ ]"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 141 SC 141.10.4.42 P101 L43 # 102

Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket

PICS items begin with a "\*" when they are referenced by another PICS item in the Status column. "OM10" does not appear in any other Item, so should not begin with a "\*"

*SuggestedRemedy*

Change "\*"OM10" to "OM10"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 142 SC 142 P103 L0 # 290

Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D bucket

There are change bars on the header and footer that should not be there.

*SuggestedRemedy*

Remove change bars on pages 103 through 179

Proposed Response Response Status W

PROPOSED ACCEPT.

## Proposed Responses

## IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.1 P103 L19 # 289  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Missing non-breaking spaces in number that have 4 or more digits to the right of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.  
 SuggestedRemedy  
 Change: 25.78125  
 To: 25.781 25  
 Also on P107 L27, P107 L31, P109 L41, P138 L17, P138 L18,  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 142 SC 142.1 P105 L1 # 371  
 Dawe, Piers Mellanox  
 Comment Type ER Comment Status A redraw  
 Per style manual "WGs should create their figures using programs that create vector output".  
 SuggestedRemedy  
 Import the figure a different way, or draw it in Frame. Same for figs 142-5 to 9, 13 to 16 and 18, 143-1 to 9, 12, 13, 15 and 16, 144-3 to 18, 20 to 29, 31 to 34, and 142A-1.  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 See comment #98

Cl 142 SC 142.1 P105 L1 # 267  
 Kramer, Glen Broadcom  
 Comment Type T Comment Status A  
 1) BER Monotor block is missing in Figure 142-2.  
 2) The PCS Synchronization and Receive Process shall be titled simply PCS Synchronizer Process.  
 3) The receive and transmit paths need to be labelled.  
 4) The bidirectional arrows going to 64B/66B encoder, scrambler, and transcoder are confusing. Each of these functions provides output different than its input. Two separate arrows make it more accurate.

SuggestedRemedy  
 Update the figure 142-2 as shown in kramer\_3ca\_3\_0719.pdf  
 Response Response Status C  
 ACCEPT.

Cl 142 SC 142.1.1.1 P103 L29 # 490  
 Law, David Hewlett Packard Enterprise  
 Comment Type TR Comment Status A  
 There is no operator precedence defined in subclause 142.1.1.1 'State diagrams' or the referenced subclause 21.5. It is therefore unclear if an equations such as ClkXfr AND ParityLeft > 0 used on the transition from the OUTPUT\_PARITY\_PLACEHOLDERS state back to the OUTPUT\_PARITY\_PLACEHOLDERS state in Figure 142-11 'PCS Framer Process State Diagram' means (ClkXfr AND ParityLeft) > 0 or ClkXfr AND (ParityLeft > 0).  
 SuggestedRemedy  
 Add brackets as necessary to clarify the order used to evaluate state diagram transition conditions.  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 Set explicitly the order of precedence, per  
[http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/kramer\\_3ca\\_6\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/kramer_3ca_6_0719.pdf)

Cl 142 SC 142.1.1.1 P103 L34 # 491

Law, David Hewlett Packard Enterprise

Comment Type TR Comment Status A

Subclause 142.1.1.1 'State diagrams' states that 'The notation used in the state diagrams follows the conventions in 21.5.' yet Figure 142-10 'PCS Input Process State Diagram', as an example, uses TxPrev = IBI\_EQ AND TxNext != IBI\_EQ on the transition from NEXT\_VECTOR state to the RESET\_XBUF state. According to the referenced subclause 21.5 the '\*' symbol is used to represent a Boolean AND (see Table 21-1). Other state diagrams within the IEEE P802.3ca correctly follow the 21.5 conventions, such as Figure 144-5 'Control Parser state diagram'.

*SuggestedRemedy*

Consistently follow the conventions in 21.5 throughout the IEEE P802.3ca draft.

Response Response Status W

ACCEPT IN PRINCIPLE.

Change "The notation used in the state diagrams follows the conventions in 21.5.", to "The notation used in the state diagrams follows the conventions in 21.5, with extensions listed in the following subclauses."

Cl 142 SC 142.1.1.3 P105 L3 # 133

Remein, Duane Futurewei Technologies, Inc.

Comment Type T Comment Status A

In Figure 142-2 the statement "@ 2x390.625 MHz" (2x) is only correct for 25GMII. The illustration specifies xMII and should therefore be rate agnostic. Same issue for "@97.65625 MHz" (3x), and "@(25781.25/257)" (3x). Furthermore, while the block sizes are useful they disagree with Figure 142-5.

*SuggestedRemedy*

Replace the "@xxx" in the figure with notes as follows:

- 1) For 25GMII rate is 2x390.625 MHz, for XGMII rate is 2x156.25 MHz.
- 2) For 25 Gb/s PCS rate is 97.65625 MHz, for 10 Gb/s PCS rate is 39.0625 MHz.
- 3) For 25 Gb/s PCS rate is (25781.25/257) MHz, for 10 Gb/s PCS rate is (10.3125/257) MHz.

Response Response Status C

ACCEPT IN PRINCIPLE.

First, these are not rates, these are clock frequencies.

Second, rather than cluttering the entire diagram, it is better to add a single note as follows: "NOTE-All clock frequencies in this diagram are shown for the nominal MAC data rate of 25 Gb/s. For PCS devices supporting the nominal MAC data rate of 10 Gb/s, all clock frequencies are scaled down by a multiplicative coefficient 0.4."

Cl 142 SC 142.1.1.3 P105 L16 # 134

Remein, Duane Futurewei Technologies, Inc.

Comment Type TR Comment Status A

Misalignment between Fig 142-2, 142-5 and text. Mostly in block sizes transferred between major blocks/fifos.

*SuggestedRemedy*

Add a note to the figure "Note: block sizes exclude control bits passed between the PCS Input Process, PCS Framer Process and PCS Transmit Process that are not sent to the PMA.

Response Response Status C

ACCEPT IN PRINCIPLE.

Under Figure 142-5, add the following note: "NOTE-Figure 142-5 only shows the bits that are being transmitted and does not show the bit that is added and removed within PCS for control purposes."

Cl 142 SC 142.1.1.3 P105 L42 # 372

Dawe, Piers Mellanox

Comment Type T Comment Status R

"data\_vector<m:n> accesses bits n through m inclusively. The nth bit is received earlier than the mth bit.": this is too perverse. Isn't the something.7:0 style that we see in e.g. Clause 45 because the big end is "first"?

*SuggestedRemedy*

Try not to write it more weird than Ethernet bit ordering already is

Response Response Status C

REJECT.

The Task Force believes this text clarifies the vector notation and it is useful for a reader. The commenter is invited to resubmit this comment with a more specific remedy.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.1.1.3 P105 L45 # 373  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 This says "Refer to 3.1 for the conventions on bit ordering." 3.1 itself doesn't help, 3.1.1 shows LSB first, specifically for the MAC.  
 SuggestedRemedy  
 What is this trying to tell us in the context of a PCS, not a MAC?  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 The specific text "Refer to 3.1 for the conventions on bit ordering" should say 3.1.1 instead of 3.1, and it should be part of bullet b, not a separate paragraph. This text is intended to clarify that when a vector is treated as a numerical value, bit n represents a bit with lower significance than bit m.  
 The TF has decided to combine all conventions used in .3ca into a single subclause and reference this subclause from other .3ca clauses, rather than duplicating identical conventions in different clauses. Since vector notations are used throughout multiple clauses, it is made part of this subclause and we feel that referencing subclause 3.1.1 is appropriate.

Cl 142 SC 142.1.1.4 P105 L51 # 30  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "straightforward and can be replaced by addition" with "straightforward and may be replaced by addition"  
 Response Response Status C  
 ACCEPT.

Cl 142 SC 142.1.1.4 P106 L1 # 494  
 Brandt, David Rockwell Automation  
 Comment Type E Comment Status R post-deadline  
 Is there a reason to create a separate set of "State diagram operators"? Clause 1.2.1 lists "State diagram conventions", where some of the operators are defined. If additions were made, state diagrams could reference a consistent definition across the standard - at least moving forward.  
 SuggestedRemedy  
 Merge new operators into a Clause 1.2.1. Reference this clause.  
 Response Response Status C  
 REJECT.  
 The primary problems with existing definitions is that they are inconsistent and also distributed across multiple clauses, building a confusing lattice of overlapping requirements associated with state diagram conventions. Rather than rely on that, the Task Force decided to clean the conventions up and make them non-ambiguous.  
 It is not possible to go and retroactively fix the problem, primarily because of the number of legacy clauses that would be affected in the process. Such a task would be best handled by the Maintenance Task Force.

Cl 142 SC 142.1.1.4 P106 L31 # 493  
 Brandt, David Rockwell Automation  
 Comment Type E Comment Status D post-deadline; bucket  
 Decrement operator has no apparent space between first "-" and second "-".  
 SuggestedRemedy  
 Use a dash character or font with a break between characters.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.1.1.5 P107 L6 # 374  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 in this standard  
 SuggestedRemedy  
 in this clause  
 Response Response Status C  
 ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.1.2 P107 L27 # 375  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 As this is the first use of EQT in this clause, and this is the first project to use EQT  
 SuggestedRemedy  
 Say what it is, e.g. with a cross-reference.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add a cross reference to 1.4.245b.

Cl 142 SC 142.1.2 P107 L34 # 135  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 "aforementioned delay limits" should be "aforementioned delay variation limits"  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.1.3 P107 L28 # 291  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Missing non-breaking spaces in number that have 4 or more digits to the right of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.  
 SuggestedRemedy  
 Change: 10.3125  
 To: 10.312 5  
 Also on P107 L32, P109 L42, P138 L18, P138 L19,  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 142 SC 142.1.3 P108 L4 # 136  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 This text is duplicated 4-5 lines above.  
 SuggestedRemedy  
 Strike the duplicate text  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.1.3.1 P109 L24 # 449  
 Nicholl, Shawn Xilinx  
 Comment Type E Comment Status A subscript  
 This sub-clause uses the notation 0x1-(55)32. Is this sub-script notation defined in the standard? Is it used anywhere else?  
 SuggestedRemedy  
 Possible remedies:  
 1) Make a comment (similar to 49.2.4.1 Notation conventions) that "The subscript in the above sentence means ..."  
 2) Simply write out the whole value without short-hand notation  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #488

Cl 142 SC 142.1.3.1 P109 L24 # 376  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A subscript  
 0x1-(55)32 - eh?  
 SuggestedRemedy  
 Is that 55 in base 32, or 55 repeated 32 times, or what? Be clearer.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #488



Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.1.3.1 P109 L28 # 450

Nicholl, Shawn

Xilinx

Comment Type E Comment Status A

Use of hyphens in a hex value is somewhat rare in the standard (101.3.3.1.6 contains some value that include hypens; 103.3.5.1 also). Most of the time hex values are written without hyphens. Consider to remove the hyphens.

SuggestedRemedy

Possible remedies:

- 1) Replace "0x1-BF-40-18-..." with "0x1BF4018...."
- 2) Create a table like "Table 119-2 - 400GBASE-R alignment marker encodings" that contains the values, delimited with commas

Response Response Status C

ACCEPT IN PRINCIPLE.

See comment #488

Cl 142 SC 142.2 P109 L39 # 377

Dawe, Piers

Mellanox

Comment Type T Comment Status A

As 802.3 uses "b/s" for the payload rate (MAC data rate), saying "25.78125 Gb/s rate" is misleading.

SuggestedRemedy

25.78125 GBd Several similar instances.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change all instances of "25.78125 Gb/s" to "25.78125 GBd"

Change all instances of "10.3125 Gb/s" to "10.3125 GBd"

Cl 142 SC 142.2 P111 L1 # 452

Nicholl, Shawn

Xilinx

Comment Type E Comment Status A redraw

Blurry diagrams. "Figure 142-5 Transmit bit ordering" is blurry. "Figure 142-6 FEC encoder" is blurry. "Figure 142-9 Omega Network 256 Interconnection Network" is blurry. Other diagrams are blurry.

SuggestedRemedy

Generate new figures that are crisp.

Response Response Status C

ACCEPT IN PRINCIPLE.

See comment #98

Cl 142 SC 142.2.1 P110 L7 # 137

Remein, Duane

Futurewei Technologies, Inc.

Comment Type E Comment Status D bucket

While this is a nice nostalgic carry-over from the previous century the term "tx\_raw" is not defined in the clause and really adds no value.

SuggestedRemedy

Strike both instance of "tx\_raw" (here and on pg 124 line 42).

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 142 SC 142.2.1 P110 L24 # 138

Remein, Duane Futurewei Technologies, Inc.

Comment Type TR Comment Status D

We have "Inter-Burst Idle", "inter-burst idle", and "inter-burst idle pattern", "inter-burst idle EQ (IBI\_EQ)". I believe these are almost, but not quite, same thing.

*SuggestedRemedy*

Make the following changes:

Pg 110 line 24 - OK as is, "Inter-Burst Idle" is defined as a control code denoted as /IBI/  
Pg 121 line 32 - change "The IBI258 constant holds the value of the inter-burst idle pattern" to "The IBI258 constant holds the value equivalent to the Inter-Burst Idle pattern"  
Pg 124 line 53 - change "inter-burst idle (IBI)" to "IBI258 (Inter-Burst Idle pattern equivalent)"  
Pg 161 line 50 - change "this channel generates only inter-burst idles towards the xMII." to "the MCRS generates only IBI\_EQ for this channel towards the xMII."  
Pg 163 all lines OK as is.

Proposed Response Response Status W

PROPOSED REJECT.

Comment type changed to "T"

What "equivalent" means here - equivalent in value or in behavior? The proposed change is too confusing.

=====

In 142.2.5.4.2, change "inserting inter-burst idle (IBI)" to "inserting inter-burst idle"

Cl 142 SC 142.2.2 P110 L36 # 268

Kramer, Glen Broadcom

Comment Type TR Comment Status A

The following statement is ambiguous:

"In the OLT, at the beginning of each burst, the descrambler is initialized with the lower 58 bits of the unscrambled value of IBI\_EQ, i.e., bits s[0] through s[57] as shown in Figure 142-14 (see 143.3.3.3)."

This specific reference to IBI\_EQ (143.3.3.3) points to 72-bit version (Value: 0x0A-0A-0A-0A-0A-0A-0A-0A-FF), and so, the low 58 bits would be 0x2-0A-0A-0A-0A-0A-0A-0A-FF

However, the original intention was to use the 64B/66B encoded value of IBI\_EQ, because the scrambler ever sees only the 64b/66b encoded blocks. So, if we assume that the seed should be the 64B/66B encoded IBI\_EQ, then it would have the following value:  
0x2-85-42-A1-50-28-14-1E  
(full 64b/66b Encoded IBI\_EQ: 0x0A-85-42-A1-50-28-14-1E)

In either case, it is just an unnecessarily indirect definition for what needs to be a pre-defined constant. We shall clarify the value to be used and simply specify a 58-bit seed constant.

*SuggestedRemedy*

Use the following text on page 110, lines 35-36:

"In the ONU, at the beginning of each burst, the scrambler is initialized with the value of 0x3-FF-FF-FF-FF-FF-FF-FF-FF, i.e., each of the bits s0 through s57 is set to 1 (see Figure 49-8)."

Use the following text on page 128, lines 34-35:

"In the OLT, at the beginning of each burst, the descrambler is initialized with the value of 0x3-FF-FF-FF-FF-FF-FF-FF-FF, i.e., each of the bits s0 through s57 is set to 1 (see Figure 49-8)"

Response Response Status C

ACCEPT IN PRINCIPLE.

Use the following text on page 110, lines 35-36:

"In the ONU, at the beginning of each burst, the scrambler is initialized with the value of 0x3-(FF)<sub>7</sub>, i.e., each of the bits S0 through S57 is set to 1 (see Figure 49-8)."

Use the following text on page 128, lines 34-35:

"In the OLT, at the beginning of each burst, the descrambler is initialized with the value of 0x3-(FF)<sub>7</sub>, i.e., each of the bits S0 through S57 is set to 1 (see Figure 49-8)"

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.2.3 P110 L40 # 451  
 Nicholl, Shawn Xilinx  
 Comment Type T Comment Status A  
 Consider to clarify that the four input blocks to the transcoder are already scrambled.  
 SuggestedRemedy  
 Replace "four consecutive 64B/66B" with "four consecutive scrambled 64B/66B"  
 Response Response Status C  
 ACCEPT.  
 This is a technical comment. Type changed to "T"

Cl 142 SC 142.2.4.1 P112 L1 # 139  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 In most cases we use "parity-check" (with a hyphen). Here and in a few other locations we omit the hyphen. We should be consistent.  
 SuggestedRemedy  
 Change the following instances of "parity check" with "parity-check":  
 pg line  
 112 1  
 114 48  
 115 1  
 116 12  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.2.4.1 P112 L3 # 292  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Missing non-breaking spaces in number that have 4 or more digits to the left of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.  
 SuggestedRemedy  
 Change: = 3072 x 17664  
 To: = 3 072 x 17 664  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 142 SC 142.2.4.1 P112 L4 # 140  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 The "H" in "... matrix H composed by a ..." and "Ai,j" in "256 sub-matrices Ai,j;" should be in italics. Same for other occurrences in these terms, "ai,j", "(i,j)", "Hc", "Z", "K", "Kmax", "S", "P", "M", "N", "Nmax", "R", "Rmax", "u", "u1", "u2", "uK", "p", "p1", "p2", "pM", "T", "c", "i", and "k" (in K+1) scatter throughout the text and Figure 142-6 in Cl 142.2.4 and it's sub-clauses. Also in Figure 142-13—FEC decoder.  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.2.4.1 P112 L13 # 31  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "The parity-check matrix can be described in its compact form" to "The parity-check matrix is described in its compact form"  
 Response Response Status C  
 ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.2.4.1 P114 L39 # 442

Powell, William Nokia  
 Comment Type T Comment Status A  
 Replace this note:  
 "Editor's Note (to be removed prior to publication): Link to the CSV file containing machine readable files to be added here prior to publication."

SuggestedRemedy  
 with:  
 "Editor's Note - Later move this file to: <http://standards.ieee.org/downloads/802.3/> "

Response Response Status C  
 ACCEPT IN PRINCIPLE.

Change text of the editorial note to  
 Editor's Note (to be removed prior to publication): At publication time, all machine readable files will be published under <http://standards.ieee.org/downloads/802.3/> in a machine readable format. The aforementioned files are accessible right now at: <http://www.ieee802.org/3/ca/index.shtml>

The same text to be used on page 249, line 50, and page 118, line 1

Cl 142 SC 142.2.4.1 P114 L39 # 276

Marris, Arthur Cadence Design Systems  
 Comment Type ER Comment Status A  
 Delete "Editor's Note (to be removed prior to publication): Link to the CSV file containing machine readable files to be added here prior to publication."

SuggestedRemedy  
 Delete "Editor's Note (to be removed prior to publication): Link to the CSV file containing machine readable files to be added here prior to publication."

Similar problem on page 249 line 51.

Response Response Status W  
 ACCEPT IN PRINCIPLE.

See comment #442

Cl 142 SC 142.2.4.2 P114 L49 # 293

Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Missing non-breaking spaces in number that have 4 or more digits to the left of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.

SuggestedRemedy  
 Change: 14592  
 To: 14 592  
 Also on P114 L54

Proposed Response Response Status Z  
 PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl 142 SC 142.2.4.2 P114 L51 # 294

Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D bucket  
 Missing non-breaking spaces in number that have 4 or more digits to the left of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.

SuggestedRemedy  
 Change: 17664  
 To: 17 664

Proposed Response Response Status Z  
 PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.2.4.2 P114 L53 # 295  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Missing non-breaking spaces in number that have 4 or more digits to the left of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.  
 SuggestedRemedy  
 Change: 14392  
 To: 14 392  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 142 SC 142.2.4.2 P115 L5 # 296  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Missing non-breaking spaces in number that have 4 or more digits to the left of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.  
 SuggestedRemedy  
 Change: 16962  
 To: 16 962  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 142 SC 142.2.4.2 P116 L5 # 141  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 What does (Pi to the -1 power)"info(u\*)" and (Pi)parity(p)" mean?  
 SuggestedRemedy  
 Add a definition of this term. Unfortunately I have no idea what such a definition would be so I can offer no informed suggestions  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #379.

Cl 142 SC 142.2.4.2 P116 L5 # 379  
 Dawe, Piers Mellanox  
 Comment Type TR Comment Status A  
 I don't know what you mean by pi-1info. Similar problem at line 9.  
 SuggestedRemedy  
 Explain, or better, use more familiar notation  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 append the following sentence to the end of the paragraph on Page 116, Lines 3-5 : "pi(-1)<sub>info</sub> represents the de-interleaver mapping of information bits that permutes u\* to u'." and also append the following sentence to the end of the paragraph on Page 116, Lines 6-8: "pi<sub>parity</sub> represents the interleaver mapping of parity bits that permutes p" to p\*."

Cl 142 SC 142.2.4.2 P116 L7 # 380  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status A  
 What is then interleaved? p" or H?  
 SuggestedRemedy  
 ?  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 replace "matrix H, which is then" with "matrix H, and p" is then"

Cl 142 SC 142.2.4.2 P116 L16 # 142  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 This seems a bit confusing "the M-bit FEC parity bits"  
 SuggestedRemedy  
 Change to "the M FEC parity bits" (M in italics)  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 "M bits of FEC parity" is better

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.2.4.2 P116 L18 # 381  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status A  
 is comprised of  
 SuggestedRemedy  
 comprises  
 consists of  
 contains  
 is composed of  
 or possibly other alternatives  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Use "comprises"

Cl 142 SC 142.2.4.3 P116 L24 # 143  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 It strikes me a odd that the De-interleaver should refer to encoding and the Interleaver to decoding as stated in the following:  
 "For the purposes here: "De-interleaver" refers to the mapping from transmitted sequence to encoding/decoding sequence (including user and parity). ... "Interleaver" refers to the mapping from encoding/decoding sequence to transmitted sequence."  
 SuggestedRemedy  
 Change to:  
 "For the purposes here: "De-interleaver" refers to the mapping from transmitted sequence to decoding sequence (including user and parity). ... "Interleaver" refers to the mapping from encoding sequence to transmitted sequence."  
 Proposed Response Response Status Z  
 REJECT.  
 This comment was WITHDRAWN by the commenter.  
 Comment type changed to "T"

Cl 142 SC 142.2.4.3 P116 L25 # 382  
 Dawe, Piers Mellanox  
 Comment Type TR Comment Status A  
 I don't know what you mean by "Omega networks".  
 SuggestedRemedy  
 Define what you are talking about. If it doesn't matter, don't mention them.  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 Add an informative reference to  
 Lawrie, Duncan H. (December 1975). "Access and Alignment of Data in an Array Processor". IEEE Transactions on Computers. C-24 (12): 1145–55.  
<https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1672750>  
 at the first instance of Omega network used as a term

Cl 142 SC 142.2.4.3 P116 L29 # 144  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 We seem to have a mix of "De-interleaver", "de-interleaver", "Interleaver", and "interleaver".  
 SuggestedRemedy  
 Be consistent. Change all to initial Caps  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.2.4.3 P117 L48 # 383  
 Dawe, Piers Mellanox  
 Comment Type TR Comment Status A  
 I don't know what you mean this partial square bracket; it is not explained here or in 1.2 Notation  
 SuggestedRemedy  
 Use accessible notation instead: rounddown() or whatever is meant.  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 Add footnote under the formula, as follows: (copied from 77.2.2.4)  
 NOTE—The notation  $\lfloor x \rfloor$  represents a floor function, which returns the value of its argument x rounded down to the nearest integer.

## Proposed Responses

## IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.2.4.3 P118 L1 # 481  
 Slavick, Jeff Broadcom  
 Comment Type TR Comment Status A machine-readable-files  
 Editor's note states it should have been removed before WG ballot with URL  
 SuggestedRemedy  
 Replace with proper URL  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 See comment #442

Cl 142 SC 142.2.4.3 P118 L1 # 443  
 Powell, William Nokia  
 Comment Type T Comment Status A machine-readable-files  
 Replace this note:  
 "Editor's Note (to be removed prior to publication): Before entering WG ballot, content of individual seed tables will be published under <http://standards.ieee.org/downloads/802.3/> in a machine readable format"  
 SuggestedRemedy  
 with:  
 "Individual seed tables can be found at:  
<http://www.ieee802.org/3/ca/private/xxx>  
 [NEED SEED TABLES PLACED AT LINK ABOVE]  
 [and later move it to <http://standards.ieee.org/downloads/802.3/> ]  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #442

Cl 142 SC 142.2.4.3 P118 L1 # 277  
 Marris, Arthur Cadence Design Systems  
 Comment Type TR Comment Status A machine-readable-files  
 Address the following:  
 "Editor's Note (to be removed prior to publication): Before entering WG ballot, content of individual seed tables will be published under <http://standards.ieee.org/downloads/802.3/> in a machine readable format"  
 SuggestedRemedy  
 Address the following:  
 "Editor's Note (to be removed prior to publication): Before entering WG ballot, content of individual seed tables will be published under <http://standards.ieee.org/downloads/802.3/> in a machine readable format"  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 See comment #442

Cl 142 SC 142.2.4.3 P118 L1 # 111  
 Lusted, Kent Intel  
 Comment Type TR Comment Status A machine-readable-files  
 The editors note states that the machine readable form of the seed tables are posted at <https://standards.ieee.org/downloads.html>. However, the files for 802.3ca are not posted as of 30 May 2019  
 SuggestedRemedy  
 Post the seed files and remove the editors note.  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 See comment #442

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.2.4.3 P118 L1 # 103

Anslow, Pete Ciena  
 Comment Type E Comment Status A machine-readable-files

The editor's note says that "Before entering WG ballot, content of individual seed tables will be published under <http://standards.ieee.org/downloads/802.3/> in a machine readable format"  
 However, the draft is in WG ballot and the location <http://standards.ieee.org/downloads/802.3/> is where files for published standards reside.

SuggestedRemedy

Publish the files on the P802.3ca web page and include the location with a note and Editor's note equivalent to those on Page 114 lines 36 to 41

Response Response Status C

ACCEPT IN PRINCIPLE.

See comment #442

Cl 142 SC 142.2.4.3 P118 L1 # 145

Rerein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A machine-readable-files

The information per the Editorial note has not been published at the advertised URL.  
 Liar, Liar pants on fire!

SuggestedRemedy

Post the seed tables at the advertised URL or Post the seed table at some other URL updating the Ed Note appropriately or change "Before entering WG ballot" to "Prior to publication".

Response Response Status C

ACCEPT IN PRINCIPLE.

See comment #442

Cl 142 SC 142.2.4.3 P118 L1 # 384

Dawe, Piers Mellanox  
 Comment Type TR Comment Status A machine-readable-files

This says "Before entering WG ballot, content of individual seed tables will be published under <http://standards.ieee.org/downloads/802.3/> in a machine readable format". But I don't see them there.

SuggestedRemedy

Sort it out.

Response Response Status W

ACCEPT IN PRINCIPLE.

See comment #442

Cl 142 SC 142.2.4.3 P118 L35 # 453

Nicholl, Shawn Xilinx  
 Comment Type E Comment Status A

Are the hyphen's necessary in Tables 142-5, 142-6? Consider to remove them to be more consistent with other tables in the standard (eg. Table 52-20, Table 115-1, Table 120-2)

SuggestedRemedy

Remove the hyphens from values in the tables 142-5, 142-6.

Response Response Status C

ACCEPT IN PRINCIPLE.

See comment #488



Cl 142 SC 142.2.5 P120 L52 # 146

Remein, Duane Futurewei Technologies, Inc.

Comment Type T Comment Status A

Here we state "bit 257 conveying the origin of the block to be either the PCS Input Process (bit 257 is equal to 1) or the PCS Framer Process (bit 257 is equal to 0). The value of bit 257 being one implies that the 257-bit block has been transcoded and scrambled."

Elsewhere we state (pg/ln)

121/51 "The value of bit 257 being one implies that the 257-bit block has been transcoded and scrambled."

123/22 "a binary one indicating the 257-bit block originated in the PCS Input Process"

124/46 "A single bit indicating the accompanying 256B/257B block has been scrambled is appended to the block which is then stored in the InputFifo."

We should be consistent in what this bit indicates.

*SuggestedRemedy*

At 120/52 (pg/ln) change:

"Various variables and buffers in the PCS are structured as 258-bit wide blocks with bits 0 through 256 holding one line-coding unit (a 257-bit block) and bit 257 conveying the origin of the block to be either the PCS Input Process (bit 257 is equal to 1) or the PCS Framer Process (bit 257 is equal to 0). The value of bit 257 being one implies that the 257-bit block has been transcoded and scrambled." to:

"Various variables and buffers in the PCS are structured as 258-bit wide blocks. Bits 0 through 256 of these 258-bit block hold one line-coding unit (a 257-bit block) and bit 257 indicates the 257-bit block has been transcoded and scrambled (bit 257 is equal to 1) or that the block has not been transcoded and scrambled (bit 257 is equal to 0). The value of bit 257 also implies the origin of the block as being either the PCS Input Process (bit 257 is equal to 1) or the PCS Framer Process (bit 257 is equal to 0)."

At 121/51 change:

"The value of bit 257 being one implies that the 257-bit block has been transcoded and scrambled." to:

"The value of bit 257 being one indicates that the 257-bit block has been transcoded and scrambled."

At 123/22 change:

"a binary one indicating the 257-bit block originated in the PCS Input Process" to:

"a binary one indicating the 257-bit block has or has not been transcoded and scrambled."

At 124/46 change:

"A single bit indicating the accompanying 256B/257B block has been scrambled ..." to:

"A single bit indicating the accompanying 256B/257B block has been transcoded and scrambled ..."

Response Response Status C

ACCEPT IN PRINCIPLE.

At 120/52 (pg/ln) change:

"Various variables and buffers in the PCS are structured as 258-bit wide blocks with bits 0 through 256 holding one line-coding unit (a 257-bit block) and bit 257 conveying the origin of the block to be either the PCS Input Process (bit 257 is equal to 1) or the PCS Framer Process (bit 257 is equal to 0). The value of bit 257 being one implies that the 257-bit block has been transcoded and scrambled." to:

"Various variables and buffers in the PCS are structured as 258-bit wide blocks. Bits 0 through 256 of each 258-bit block hold one line-coding unit (a 257-bit block) and bit 257 indicates the 257-bit block has been scrambled and transcoded (bit 257 is equal to 1) or that the block has not been scrambled and transcoded (bit 257 is equal to 0). The value of bit 257 also implies the origin of the block as being either the PCS Input Process (bit 257 is equal to 1) or the PCS Framer Process (bit 257 is equal to 0)."

At 121/51 change:

"The value of bit 257 being one implies that the 257-bit block has been transcoded and scrambled." to:

"The value of bit 257 equal to 1 indicates that the 257-bit block has been scrambled and transcoded."

At 123/22 change:

"a binary one indicating the 257-bit block originated in the PCS Input Process" to:

"a binary 1 indicating the 257-bit block has been scrambled and transcoded."

At 124/46 change:

"A single bit indicating the accompanying 256B/257B block has been scrambled ..." to:

"A single bit indicating the accompanying 256B/257B block has been scrambled and transcoded ..."

Cl 142 SC 142.2.5.1 P121 L14 # 454

Nicholl, Shawn Xilinx

Comment Type E Comment Status D bucket

Value is set to "0x3-CA". Seems like an unconventional use of hyphen.

*SuggestedRemedy*

Replace "0x3-CA" with "0x3CA"

Proposed Response Response Status W

PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.2.5.1 P121 L30 # 488

Law, David Hewlett Packard Enterprise  
 Comment Type T Comment Status A subscript

The meaning of '0x0-(0A)subscript32' is unclear. According to IEEE Std 802.3-2018 subclause 1.2.5 'Hexadecimal notation' 'Numerical values designated by the 0x prefix indicate a hexadecimal interpretation ...' and 'Numerical values designated with a 16 subscript indicate a hexadecimal interpretation of the corresponding number.'. This therefore seems to imply that the 32 subscript indicates a base 32 number, which I doubt is correct. Instead I suspect that this is meant to indicate 0x0A repeated 32 times, but I don't see where that convention is defined.

SuggestedRemedy

Specify the meaning of '0x0-(0A)subscript32'.

Response Response Status C

ACCEPT IN PRINCIPLE.

Renumber the existing section 142.1.1.2 into 142.1.1.3 and insert the following new section as shown in [http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/kramer\\_3ca\\_5\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/kramer_3ca_5_0719.pdf)

Cl 142 SC 142.2.5.1 P121 L33 # 455

Nicholl, Shawn Xilinx  
 Comment Type E Comment Status A subscript

Use of subscript of 32 for the value of IBI258 and also PAR\_PLACEHLDR. Similar to previous comment, need to define/explain the notation.

SuggestedRemedy

- Possible remedies:  
 1) Make a comment (similar to 49.2.4.1 Notation conventions) that "The subscript in the above sentence means ..."  
 2) Simply write out the whole value without short-hand notation

Response Response Status C

ACCEPT IN PRINCIPLE.

See comment #488

Cl 142 SC 142.2.5.2 P122 L26 # 330

Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket

Missing crossref formatting for "142.1.1.5". Same for line 41.

SuggestedRemedy

Make them into proper cross references.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 142 SC 142.2.5.2 P123 L36 # 331

Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket

Missing period after "TxFifo"

SuggestedRemedy

Add the period at the end of the sentence.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 142 SC 142.2.5.3 P123 L3 # 147

Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A

It would be a kindness to the reader to inform them why "The MSB of each cell is set to zero".

SuggestedRemedy

Add to the end of the sentence " indicating the 257-bit block has or has not been transcoded and scrambled."

Response Response Status C

ACCEPT IN PRINCIPLE.

Add to the end of the sentence " indicating the 257-bit block has not been scrambled and transcoded."

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.2.5.3 P124 L11 # 148  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Is the "v" in "of a 72-bit block v" in italics? It doesn't appear to be.  
 Same issue at line 14, 22, & 34 ("a[4]" in this case).  
 SuggestedRemedy  
 Ensure the "v" is italicized.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.2.5.4.1 P126 L36 # 104  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 The PROCESS\_DATA state contains 4 instances of "<=" that should be the "Assignment operator" as per the first two rows  
 SuggestedRemedy  
 In the PROCESS\_DATA state change 4 instances of "<=" to the "Assignment operator" as per the first two rows  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.2.5.4.2 P125 L5 # 332  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 The hyphen for the line break looks awkward.  
 SuggestedRemedy  
 Suggest making PAR\_PLACEHOLDER unbreakable.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.2.5.4.3 P125 L17 # 149  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Missing "the", "a", or "an"  
 SuggestedRemedy  
 Change  
 "not transmitting, laser is turned on" to  
 "not transmitting, the laser is turned on"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.3 P125 L37 # 333  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 The first of the hyphen-bullet lines ends in a period, the other two do not (lines 38 and 39).  
 SuggestedRemedy  
 Editor to choose how to have consistent (or appropriate) line ending for all three lines.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Remove "." at the end of the first line.

Cl 142 SC 142.3 P125 L38 # 151  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 No such beast in Figure 142-2 "PCS Synchronizer Process"  
 SuggestedRemedy  
 Change Figure 142-2 block title from  
 "PCS Synchronization & Receive Process" to  
 "PCS Synchronizer Process"  
 This is deemed easier than changing the text to match the figure 17x.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 The Figure 142-2 is updated per  
[http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/kramer\\_3ca\\_3\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/kramer_3ca_3_0719.pdf) (see comment #267)

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.3 P125 L38 # 150  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 No such beast in Figure 142-2 "PCS BER Monitor Process (see 142.3.5.6)".  
 SuggestedRemedy  
 Change  
 "— PCS BER Monitor Process (see 142.3.5.6)" to  
 "— FEC Decoder (see 142.3.1)"  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 The Figure 142-2 is updated per  
[http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/kramer\\_3ca\\_3\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/kramer_3ca_3_0719.pdf) (see comment #267)

Cl 142 SC 142.3.1 P125 L43 # 152  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 Does the FEC decoder really interleave?  
 SuggestedRemedy  
 At line 43 Change  
 "interleaver/de-interleaver data path." to  
 "de-interleaver data path."  
 Change title of section 142.3.1.1 from:  
 "Receive Interleaving" to  
 "Receive De-interleaving"  
 Proposed Response Response Status Z  
 REJECT.  
 This comment was WITHDRAWN by the commenter.  
 Yes, it does interleave. See the referenced picture.

Cl 142 SC 142.3.1 P126 L20 # 484  
 Slavick, Jeff Broadcom  
 Comment Type TR Comment Status R  
 In Figure 142-10 the exit from NEXT\_VECTOR has a conflict in exit criteria. If TxPREV is IBI\_EQ and TxNext becomes RATE\_ADJ\_EQ both the criteria to take the path to WAIT\_FOR\_VECTOR and RESET\_XBUF would be met. So which path should you take?  
 SuggestedRemedy  
 Resolve the conflict  
 Response Response Status W  
 REJECT.  
 This is a fair observation for the state diagram 142-10 behavior, however such input to the state diagram is precluded by the higher layer (see MCRS, Figure 143-12). The inter-burst idles (IBI\_EQ) are transmitted when there is no data to transmit. When data finally appears, the IBI\_EQ will be succeeded by data EQ. The first RATE\_ADJ\_EQ will only appear after 224 data EQs (i.e., after one FEC codeword payload). RATE\_ADJ\_EQ can never directly follow the IBI\_EQ.

Cl 142 SC 142.3.1.1 P126 L1 # 456  
 Nicholl, Shawn Xilinx  
 Comment Type E Comment Status A redraw  
 Font used in state diagrams appears different from most other state diagrams in the standard. This includes "Figure 142-10 PCS Input Process State Diagram", "Figure 142-11 PCS Framer Process State Diagram" and others.  
 SuggestedRemedy  
 Update the state diagrams to look more like other state diagrams in the standard  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #98

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.3.1.1 P126 L2 # 486

Law, David Hewlett Packard Enterprise

Comment Type T Comment Status A

The variable BEGIN is not defined.

SuggestedRemedy

Add the following variable definition to subclause 142.2.5.2.

BEGIN  
 TYPE: Boolean  
 Description: This variable is used when initiating operation of the functional block state diagram. It is set to TRUE following initialization and every reset.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add the following variable definition to subclause 142.2.5.2. In every "Variable" section, add entry for BEGIN and reference 142.2.5.2.

BEGIN  
 TYPE: Boolean  
 Description: This variable is used when initiating operation of the functional block state diagram. It is set to true following initialization and every reset, and it is reset to false on read.

Cl 142 SC 142.3.1.1 P126 L36 # 487

Law, David Hewlett Packard Enterprise

Comment Type E Comment Status D bucket

The Assignment operator character defined in Table 21-1 should be used rather than the two separate symbols '<' and '='.

SuggestedRemedy

Replace the four instances of '<=' with the Assignment operator in the PROCESS\_DATA state in Figure 142-10.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 142 SC 142.3.1.1 P126 L36 # 495

Brandt, David Rockwell Automation

Comment Type E Comment Status D post-deadline; bucket

Four incorrect symbols are used.

SuggestedRemedy

Use the "assignment operator" symbol instead of "<=" in the following 3 assignments:

```
xBuffer[0] <= Scramble( xBuffer[0] )
xBuffer[1] <= Scramble( xBuffer[1] )
xBuffer[2] <= Scramble( xBuffer[2] )
xBuffer[3] <= Scramble( xBuffer[3] )
```

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 142 SC 142.3.2 P126 L49 # 457

Nicholl, Shawn Xilinx

Comment Type T Comment Status A

Consider to clarify that the four output blocks from the transcoder are still scrambled.

SuggestedRemedy

Replace "four consecutive 66-bit" with "four consecutive scrambled 66-bit"

Response Response Status C

ACCEPT.

This is a technical comment. Changed type to "T"

Cl 142 SC 142.3.3 P128 L34 # 153

Remein, Duane Futurewei Technologies, Inc.

Comment Type TR Comment Status A

This statement is confusing at best and possibly misleading: "In the OLT, at the beginning of each burst, the descrambler is initialized with the lower 58 bits of the unscrambled value of IBI\_EQ, i.e., bits s[0] through s[57] as shown in Figure 142-14 (see 143.3.3.3)."  
First off there are no s[x] bits in the Fig 142-14. The S[x] \_Bytes\_ shown in Fig 142-14 are after the descrambler. The "i.e., i.e., bits s[0] through s[57] ..." if assumed (a bad idea but what is the reader to do) to be the individual bits of S0..S7 implies that the descrambler is initialized with whatever happens to be in the register after receiving SBD. This is unlikely to be correct. IBI\_EQ is a clearly defined constant and needs no qualification from Figure 142-14.

SuggestedRemedy

Strike ", i.e., bits s[0] through s[57] as shown in Figure 142-14 "

Response Response Status C

ACCEPT IN PRINCIPLE.

See comment #268

Cl 142 SC 142.3.5.1 P131 L14 # 297

Wienckowski, Natalie General Motors

Comment Type E Comment Status D

Use a non-breaking space in number that have 4 or more digits to the left of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual, not a comma.

SuggestedRemedy

Change: 16,962  
To: 16 962

Proposed Response Response Status Z

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl 142 SC 142.3.5.2 P132 L14 # 154

Remein, Duane Futurewei Technologies, Inc.

Comment Type T Comment Status A

Do we test FEC CWs or decode them?

SuggestedRemedy

Change (2x in para)  
"a new QC-LDPC codeword is available for testing" to  
"a new QC-LDPC codeword is available for decoding"

Response Response Status C

ACCEPT IN PRINCIPLE.

Comment type changed to "T"

Change (2x in para)  
"a new QC-LDPC codeword is available for testing" to  
"a new QC-LDPC codeword is available for testing by the BER Monitor Process"

Cl 142 SC 142.3.5.2 P132 L38 # 155

Remein, Duane Futurewei Technologies, Inc.

Comment Type T Comment Status A

Well close. MatchCount doesn't track all matches only those before the ONU is in sync

SuggestedRemedy

Change:  
"This counter tracks the number of consecutive successful detections of FEC codeword delimiters (FEC\_CW\_DELIM)." to  
"This counter tracks the number of consecutive successful detections of FEC codeword delimiters (FEC\_CW\_DELIM) while the ONU is not synchronized to the proper 257-bit block boundary."

Response Response Status C

ACCEPT.

Cl 142 SC 142.3.5.2 P133 L2 # 156

Remein, Duane Futurewei Technologies, Inc.

Comment Type E Comment Status D bucket

Persistent-  
FecFail crosses the line and shouldn't.

SuggestedRemedy

per comment

Proposed Response Response Status W

PROPOSED ACCEPT.

## Proposed Responses

## IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.3.5.2 P133 L29 # 157  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type **TR** Comment Status **A**  
 This statement is clearly not true (see 142.1.3.1) "Once provisioned, this value does not change and is treated as constant by the state diagram."  
 SuggestedRemedy  
 Strike.  
 Response Response Status **C**  
 ACCEPT.

Cl 142 SC 142.3.5.2 P133 L35 # 158  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type **E** Comment Status **D** bucket  
 PMA\_SIGNAL.  
 indication(SIGNAL\_OK) crosses the line and shouldn't  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl 142 SC 142.3.5.2 P134 L25 # 386  
 Dawe, Piers Mellanox  
 Comment Type **TR** Comment Status **A** PMA  
 What PMA\_UNITDATA.indication primitive?  
 SuggestedRemedy  
 I could not find the PMA service interface definition. Add it.  
 Response Response Status **W**  
 ACCEPT IN PRINCIPLE.  
 Insert editorial note indicating text is missing and will be provided.

Cl 142 SC 142.3.5.3 P133 L51 # 159  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type **E** Comment Status **D** bucket  
 This is the only instance of "de-coding". There are ~27 instances of decode (or some form of decode).  
 SuggestedRemedy  
 Remove the hyphen.  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl 142 SC 142.3.5.3 P134 L5 # 358  
 Hajduczenia, Marek Charter Communications  
 Comment Type **TR** Comment Status **A**  
 FecDecode description is a tad cryptic. The FecDecode function to passes one complete FEC codeword cw to the FEC Decoder. The FEC codeword may be full-length or shortened. The codeword length is intrinsic to the parameter cw. Looking at Figure 142–16, this function is just called, but then I guess it is assumed that it generates the output of OutputFifo since that is what is used as input data stream in Figure 142–18. That relationship is not described anywhere, though.  
 SuggestedRemedy  
 To make things simpler to read between state diagrams, it is recommended to make FecDecode function write into OutputFifo explicitly  
 Option one (preferred), add statement "OutputFifo.Append(FecDecode(RxCwBuf)) in RX\_FULL\_CW state in Figure 142–16 and Figure 142–15, as well as in state RX\_SHORT\_CW in Figure 142–15 + Add the following statement at the end of the definition of FecDecode function. "On completion of the FEC decoding operation, the FecDecode function returns a series of 257-bit blocks appended to the OutputFifo."  
 Option two (less explicit): add only statement in definition of FecDecode function as follows: "On completion of the FEC decoding operation, the FecDecode function returns a series of 257-bit blocks appended to the OutputFifo." - this option still requires a reader to make a connection between two state diagrams via description of the function  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Change name of "FecDecode" function to "PassToFecDecoder" in text and SDs.

Proposed Responses

IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 142 SC 142.3.5.3 P134 L25 # 160  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 PMA\_UNITDATA.indication( rx\_code\_group<256:0> ) crosses the line and shouldn't  
 SuggestedRemedy per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.3.5.4 P134 L36 # 334  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 Missing period, end of last sentence of paragpah.  
 SuggestedRemedy Add the period.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.3.5.4 P135 L13 # 357  
 Hajduczenia, Marek Charter Communications  
 Comment Type TR Comment Status A  
 PCS\_BLK\_SZ is not defined right now and it does not seem like we have any .  
 SuggestedRemedy Seems the following simple definition in XXX would suffice  
 PCS\_BLK\_SZ  
 Type: unsigned integer  
 Description: The PCS\_BLK\_SZ constant holds the size of the PCS data block.  
 Value: 257  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 PCS\_BLK\_SZ  
 Type: unsigned integer  
 Description: The PCS\_BLK\_SZ constant holds the size of the PCS data block.  
 Value: 257  
 Unit: bits

Cl 142 SC 142.3.5.4 P135 L15 # 485  
 Slavick, Jeff Broadcom  
 Comment Type TR Comment Status R  
 In Figure 141-15 the exit from GET\_NEXT\_BLOCK has a conflict in exit criteria. If SignalFail and MatchFound are both true which path do you take?  
 SuggestedRemedy Change the path to CHECK\_CW\_LEN to be "!SignalFail AND Matchfound..."  
 Response Response Status W  
 REJECT.

It is unnecessary to complicate this transition in the SD, since regardless of which of the two transitions the SD takes, it will end up in the same state.  
 Cl 142 SC 142.3.5.7 P136 L45 # 163  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Missing "the"  
 SuggestedRemedy Change "of Output Process" to "of the Output Process"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.3.5.7 P137 L4 # 164  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Figure needs clean-up; Block divider line overrun block boundaries, connectors often don't touch blocks.  
 SuggestedRemedy per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.



Cl 142 SC 142.3.5.7 P137 L42 # 368

Hajduczenia, Marek

Charter Communications

Comment Type TR Comment Status A

in Figure 142-18, PayloadLeft variable is initialized in WAIT\_FOR\_DATA state with FEC\_PAYLOAD\_SIZE constant, defined in 142.2.5.1 as 56 units of 257-bit blocks. PayloadLeft is, however, decremented every 72 bit-block in OUTPUT\_72B\_BLOCK state, which means it runs 4 times faster than expected. It will lead to exhaustion of counter ahead of time, and termination of the FEC payload decoding process prematurely.

*SuggestedRemedy*

Move "PayloadLeft --" operation from OUTPUT\_72B\_BLOCK to PROCESS\_257B\_Block, where it will be counting in 257-bit blocks recovered from FEC payload, at the rate that is expected

Response Response Status C

ACCEPT IN PRINCIPLE.

Changes per comment. Also, we need to move FEC\_PAYLOAD\_SIZE definition to 142.3.5.1 and just reference back to 142.2.5.1, as it was done for the FEC\_CW\_DELIM constant.

Cl 142 SC 142.4 P137 L53 # 385

Dawe, Piers

Mellanox

Comment Type TR Comment Status A PMA

Missing text

*SuggestedRemedy*

Introduce / summarise the PMA

Response Response Status W

ACCEPT IN PRINCIPLE.

See comment #386.

Cl 142 SC 142.4.1 P137 L3 # 387

Dawe, Piers

Mellanox

Comment Type TR Comment Status A

This isn't an adequate definition of "differential encoding".

*SuggestedRemedy*

Define it properly, including: What is it for? When is it used or useful? What is it - is it "precoding"? Are Xi and Yi bits, 257-bit vectors, or what? What is "Register" - a 1-bit delay? Define what you mean by a + in a circle.

Response Response Status W

ACCEPT IN PRINCIPLE.

(1) precoding was used (twice) interchangeably for differential encoding in D2.0 (once in 142.4.2 and once in Figure 142-20). The more commonly used industry term is differential encoding, so precoding will be removed from subsequent draft versions.

=> replace "precoding" with "differential encoding" in two the following locations  
 - Subclause 142.4.2  
 - Figure 142-20

(2) Text is proposed to be added to 142.4 as follows to provide a brief definition of differential encoding and some guidelines on usage.

142.4 Nx25G-EPON PMA

"The PMA includes a downstream differential encoding option at the serial bit rate (output bits represent changes to succeeding input values rather than respect to a given reference). This encoding technique facilitates the use of lower bandwidth receivers."

(3) Implement changes to Figure 142-19 and Figure 142-20 as shown in [http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/powell\\_3ca\\_1a\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/powell_3ca_1a_0719.pdf) (changed marked in red)

Cl 142 SC 142.4.1 P138 L3 # 165

Remein, Duane

Futurewei Technologies, Inc.

Comment Type T Comment Status A

What is an "OLT TX PMA"?

*SuggestedRemedy*

Change to "OLT transmit PMA"

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace "shall be implemented in the OLT TX PMA for downstream" with "shall be implemented in the transmit path of OLT PMA". Update PICS accordingly

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Cl 142 SC 142.4.1 P138 L4 # 166  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 This sentence is poorly worded:  
 "Differential encoding is optional to use by setting the control bit in the register, as defined in Clause 45 register 1.29.15 (see 45.2.1.23a.2)."  
 SuggestedRemedy  
 Change  
 "Differential encoding is optional to use by setting the control bit in the register, as defined in Clause 45 register 1.29.15 (see 45.2.1.23a.2)." to  
 "Use of differential encoding is optional. Setting the register control bit 1.29.15 (see 45.2.1.23a.2) to a one enables the encoding."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Comment type changed to "T"  
 Change  
 "Differential encoding is optional to use by setting the control bit in the register, as defined in Clause 45 register 1.29.15 (see 45.2.1.23a.2)." to  
 "The use of differential encoding is optional. Setting the register control bit 1.29.15 (see 45.2.1.23a.2) to a one enables the differential encoding."

Cl 142 SC 142.4.2 P138 L9 # 167  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 What is an "OLT RX PMA function"?  
 SuggestedRemedy  
 Change:  
 "Differential decoding shall be implemented in the ONU PMA RX function as shown in Figure 142-20." to  
 "Differential decoding shall be implemented in the as shown in Figure 142-20 in the ONU receive PMA."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Still not good. What is "ONU transmit PMA for downstream"?  
 Replace "shall be implemented in the ONU PMA RX function" with "shall be implemented in the receive path of ONU PMA". Update PICS accordingly.

Cl 142 SC 142.4.2 P138 L10 # 168  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Change "RX" to "receive"  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.4.2 P138 L11 # 169  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Clause 45 does not contain "ONU registers"  
 SuggestedRemedy  
 Change  
 "mapped to Clause 45 ONU register 1.29.15" to  
 "mapped to Clause 45 register bit 1.29.15 (see 45.2.1.23a.2)"  
 use live link for xRef.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.4.2 P138 L12 # 335  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 Missing period, end of last sentence of paragraph.  
 SuggestedRemedy  
 Add the period.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 142 SC 142.4.4.1 P138 L13 # 170  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Per Clause 1.5 CDR mean clock and data recovery not clock data recovery  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142 SC 142.5.5.4 P135 L2 # 161  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type ER Comment Status A redraw  
 Several SDs are not searchable in pdf files (i.e., are imported from some foreign drawing tool).  
 SuggestedRemedy  
 Redraw SDs in frame native drawing format if not already so.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #98

Cl 142 SC 142.5.5.5 P135 L37 # 162  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 This statement is not quite accurate "In the ONU, shortened FEC codewords are disallowed."  
 SuggestedRemedy  
 Change  
 "In the ONU, shortened FEC codewords are disallowed."  
 "In the ONU receive path, shortened FEC codewords are disallowed."  
 Response Response Status C  
 ACCEPT.

Cl 142A SC 142A.1 P249 L51 # 445  
 Powell, William Nokia  
 Comment Type TR Comment Status A  
 Replace this note:  
 "Editor's Note (to be removed prior to publication): Link to the CSV file containing machine readable files to be added here prior to publication."  
 SuggestedRemedy  
 with:  
 An example set of LDPC test vectors can be found at:  
[http://www.ieee802.org/3/ca/private/machine-readable/3ca\\_LDPC\\_test\\_vectors.zip](http://www.ieee802.org/3/ca/private/machine-readable/3ca_LDPC_test_vectors.zip) in machine readable format.  
 [later move it to <http://standards.ieee.org/downloads/802.3/>]  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #442.

Cl 142A SC 142A.2 P249 L37 # 270  
 Kramer, Glen Broadcom  
 Comment Type E Comment Status D bucket  
 Caption number is missing "14". Just says "2A.2"  
 SuggestedRemedy  
 Add missing text  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142A SC 142A.2 P249 L37 # 482  
 Slavick, Jeff Broadcom  
 Comment Type E Comment Status D bucket  
 The sub-clause shows as "2A.2" instead of 142A.2  
 SuggestedRemedy  
 Fix it  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 142A SC 142A.2 P249 L37 # 110  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 The heading "2A.2 QC-LDPC FEC Encoder Test Vectors" should be "142A.2" not "2A.2"  
 SuggestedRemedy  
 In the heading "2A.2 QC-LDPC FEC Encoder Test Vectors" change "142A.2" to "2A.2"  
 (Re-apply the heading style AH1,A.1)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 142A SC 142A.2 P249 L51 # 483  
 Slavick, Jeff Broadcom  
 Comment Type E Comment Status D bucket  
 machine is mis-spelled in editors note  
 SuggestedRemedy  
 Fix it  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Change text of the editorial note to  
 Editor's Note (to be removed prior to publication): At publication time machine readable  
 files will be  
 published under <http://standards.ieee.org/downloads/802.3/> in a machine readable format.  
 Tables are accessible right now at: <http://www.ieee802.org/3/ca/index.shtml>

Cl 143 SC 143.1 P143 L6 # 259  
 D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei  
 Comment Type TR Comment Status A  
 Multi-channel Reconciliation Layer introduced - noted as connection between multiple macs  
 and PHYs. There is no definition provided in 1.4, and if you look at the MCRS in Fig 143-  
 1 - it is a mapping function that reconciles the signals at a specific Media  
 Independent Interface (MII) to the specific Media Access Control (MAC)-Physical Signaling  
 Sublayer (PLS) service  
 definitions.

## SuggestedRemedy

Action 1 - add definition to 1.4 Multi-Channel Reconciliation Layer provide a mapping  
 function that reconciles the signals at a specific Media  
 Independent Interface (MII) to a specific Media Access Control (MAC)-Physical Signaling  
 Sublayer (PLS) service  
 definitions.  
 Action 2 - change text in 143.1 -This clause describes the Multi-Channel Reconciliation  
 Sublayer (MCRS) which enables multiple MACs to  
 interface with multiple Physical Layers.  
 to  
 This clause describes the Multi-Channel Reconciliation Sublayer (MCRS) which enables  
 multiple MACs to  
 interface with multiple MII's.

Response Response Status W  
 ACCEPT IN PRINCIPLE.

Action 1 - add definition to 1.4 "Multi-Channel Reconciliation Layer (MCRS): The MCRS  
 provides a mapping function that reconciles the signals at a specific Media Independent  
 Interface (xMII) to a specific Media Access Control (MAC)-Physical Signaling Sublayer  
 (PLS) service definitions."

Action 2 - change text in 143.1 -This clause describes the Multi-Channel Reconciliation  
 Sublayer (MCRS) which enables multiple MACs to interface with multiple Physical Layers.  
 to  
 This clause describes the Multi-Channel Reconciliation Sublayer (MCRS) which enables  
 multiple MACs to interface with multiple xMIIs.

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Cl 143 SC 143.1 P143 L37 # 258  
 D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei  
 Comment Type E Comment Status A  
 The figure is not consistent with other similar figures as noted in other comments, and the text associated with the MII is illegible.  
 SuggestedRemedy  
 redraw figure to be consistent with diagrams such as 56-1, 56-2, 56-3, 56-4.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Current figure emphasizes the purpose of Clause 143, covering MCRS function.  
 The text associated with the MII will be made more legible.

Cl 143 SC 143.2.4.2 P145 L23 # 32  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "and can contain at most two partial frames" to "and may contain at most two partial frames"  
 Response Response Status C  
 ACCEPT.

Cl 143 SC 143.2.4.4 P146 L40 # 336  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 "46.2.1" should be forest green. Same for Page 154, line 52 for "46.1.7.2"  
 SuggestedRemedy  
 Make it so.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.2.4.4 P147 L2 # 261  
 D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei  
 Comment Type ER Comment Status R  
 use of red lines in Fig 143-3. See IEEE-SA Style Guideline - color should not be needed to interpret informatin, and line drawings should be saved as black/white  
 See also Fig 143-8, P 152  
 SuggestedRemedy  
 Save diagram in black /white  
 Response Response Status W  
 REJECT.  
 Color is not needed to interpret data and not referenced in text in any way

Cl 143 SC 143.2.5 P148 L2 # 496  
 Brandt, David Rockwell Automation  
 Comment Type E Comment Status D post-deadline; bucket  
 Figure 143-5 vertical axis label has characters overlapping.  
 SuggestedRemedy  
 Use smaller font to prevent characters from overlapping.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.2.5 P148 L33 # 33  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status R can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "can achieve an instantaneous transmission rate of" to "may achieve an instantaneous transmission rate of"  
 Response Response Status C  
 REJECT.  
 "Can" (i.e., "is able" or "is capable") is correct and is intended. "May" (i.e., "is allowed" or "is permitted") is semantically wrong here

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Cl 143 SC 143.2.5.2 P149 L25 # 34  
 Hajduczenia, Marek Charter Communications  
 Comment Type **ER** Comment Status **A** *can-vs-may*  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "Other timing variability can accumulate in the sublayers" to "Other timing variability may accumulate in the sublayers"  
 Response Response Status **C**  
 ACCEPT.

Cl 143 SC 143.3.1 P153 L5 # 171  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type **E** Comment Status **D** *bucket*  
 The M and N in "M instances of the PLS service interface (one per MAC) and N xMII instances" should be in italics.  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl 143 SC 143.3.1 P153 L14 # 262  
 D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei  
 Comment Type **ER** Comment Status **A**  
 Vertical text in left / right of diagram of Fig 143-9 is illegible  
 SuggestedRemedy  
 Use different font to fascilate being able to read text  
 Response Response Status **W**  
 ACCEPT.

Cl 143 SC 143.3.1 P153 L26 # 497  
 Brandt, David Rockwell Automation  
 Comment Type **T** Comment Status **A** *post-deadline*  
 Index is incorrect.  
 SuggestedRemedy  
 Change: "TXC[N]<3:0>", To: "TXC[N-1]<3:0>"  
 Response Response Status **C**  
 ACCEPT.  
 This is a technical comment, type changed to "T"

Cl 143 SC 143.3.1 P153 L26 # 172  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type **T** Comment Status **A**  
 We seem to have acquired an extra TCX in figure 143-9.  
 SuggestedRemedy  
 Change: "TXC[N]<3:0>" to "TXC[N-1]<3:0>"  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Change: "TXC[N]<3:0>" to "TXC[N-1]<3:0>"

Cl 143 SC 143.3.1.1 P153 L41 # 51  
 Hajduczenia, Marek Charter Communications  
 Comment Type **E** Comment Status **D** *bucket*  
 Compound adjective  
 SuggestedRemedy  
 Change "In all single channel RS definitions" to "In all single-channel RS definitions"  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

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CI 143 SC 143.3.1.1 P154 L18 # 52  
 Hajduczenia, Marek Charter Communications  
 Comment Type T Comment Status A  
 Statement is not correct: "All transmit 25GMII interfaces share a common clock." - tabel also shows XGMII  
 SuggestedRemedy  
 Change "All transmit 25GMII interfaces share a common clock." to "All transmit xGMII interfaces share a common clock." under Table 143-1  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Remove footnote a) reference points in rows for 10 Gb/s and 25 Gb/s in Table 143-1.

CI 143 SC 143.3.1.2.1 P155 L18 # 173  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 In "This opens an envelope on channel ch for the LLID specified by link\_id with a length (in EQs) of env\_length. If all channels are idle, the EnvPam variable (see 143.3.3.4) is set to the value of epam (see EnvStartHeader() function definition in 143.3.3.5)."  
 "ch", "link\_id", "env\_length", "EnvPam", "epam" should be in italics.  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 143 SC 143.3.1.2.2 P155 L25 # 304  
 Kramer, Glen Broadcom  
 Comment Type T Comment Status A  
 The MCRS\_CTRL[ch].indication(cw\_left) primitive does not take any arguments anymore. It has been corrected everywhere in text, but still remains in the subclause title.  
 SuggestedRemedy  
 strike "cw\_left"  
 Response Response Status C  
 ACCEPT.

CI 143 SC 143.3.1.2.2 P155 L26 # 174  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 "ch" and "link\_id", "env\_length", "EnvPam", "epam" should be in italics.  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 143 SC 143.3.1.2.2 P155 L29 # 35  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "The MPCP can decide whether to issue a new envelope immediately" to "The MPCP may decide whether to issue a new envelope immediately"  
 Response Response Status C  
 ACCEPT.

CI 143 SC 143.3.2 P156 L3 # 175  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 If we are treating field names as variables (as in CI 144.3.6.x) then all field names in this section should be in italics.  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 143 SC 143.3.2 P157 L5 # 105

Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket

The IEEE Style Manual states that for a number range "Dashes should never be used because they can be misconstrued as subtraction signs."  
 Several table in the draft violate this rule.

*SuggestedRemedy*

In table 143-3, change all instances of "x-y" to "x to y"  
 Make equivalent change throughout the draft where a hyphen is used to indicate a range including:  
 Table 144-2, Table 144-3, Table 144-4, Table 144-7, Table 144-8, Table 144-11, Table 144-12.  
 142.4.4.2 page 139, line36 ("20-30")

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.3.2 P157 L5 # 263

Kramer, Glen Broadcom  
 Comment Type TR Comment Status A bit-order

The draft has multiple issues with incorrect endianness of various constants. Per 802.3 conventions, all hexadecimal values are shown with LSB on the right. Thus, the control bits in the EQ representing an envelope header should be 0x01 (i.e., the first octet in an EQ is a control character, the rest are data). But the draft shows the control bits as 0x80 in multiple places.

Also our definitions of IEI\_EQ, IBI\_EQ, RATE\_ADJ\_EQ, and PREAMBLE\_EQ all show the control bits at the wrong end of the block.

*SuggestedRemedy*

Apply multiple changes to the draft as shown in kramer\_3ca\_2\_0719.pdf

Response Response Status C  
 ACCEPT IN PRINCIPLE.

Per proposed changes, less changes to Table 143-3 deleted per comment #272

Cl 143 SC 143.3.2 P157 L25 # 272

Kramer, Glen Broadcom  
 Comment Type T Comment Status D

It is not true to state that bits E and K are "used by 1904.1". 1904.1 was approved in 2013 and has no knowledge of 802.3ca.

*SuggestedRemedy*

There are (at least) three possible solutions:  
 1) Table 143-3 provides no new information compared to the preceding Figure 143-10. In addition to everything that the table shows, the figure provides such details as the bit order for various fields and how the header is split across two 25GMII transfers. So, just delete the table.

2) Change bits E and K to "reserved" and delete all references to IEEE1904.1

3) If there is a strong desire to lock the bits E and K to 1904.1 (which is too presumptive at this time), then the footnote should say "Reserved for IEEE Std 1904.1". Only one footnote is needed for both bits. If we decide to go this route, in the description column, we should provide the full description of these bits instead of just E and K.

The commenter prefers solution #1.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Implement option #1

====

Mark to check the specific wording for reserving bits for outside use.

Cl 143 SC 143.3.2.1 P157 L43 # 53

Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket

The statement "The following test sequences show" is not clear, since associated tables are on the next page.

*SuggestedRemedy*

Change "The following test sequences show" to "The test sequences in Table 143-4, Table 143-5, and Table 143-6 show"

Proposed Response Response Status W  
 PROPOSED ACCEPT.



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Cl 143 SC 143.3.3 P158 L1 # 273  
 Marris, Arthur Cadence Design Systems  
 Comment Type E Comment Status R  
 Why is some text shaded in Table 143-4?  
 SuggestedRemedy  
 Remove shading of CRC8 and other shading if appropriate.  
 Response Response Status C  
 REJECT.  
 Shading helps to highlight CRC8 field values in different representations. As footnotes to tables 143-4, 143-5, and 143-6 explain, the gray highlight indicates location and calculated value of CRC8 field.

Cl 143 SC 143.3.3.2 P159 L42 # 176  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 "are be added" should be "are to be added"  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.3.3.3 P161 L37 # 337  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 It would be a good idea to avoid hyphenating content names and any simple math equation where it might have confusing interpretation between minus sign and a hyphen. Same for line 43.  
 SuggestedRemedy  
 Remove the line breaking.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.3.3.3 P161 L44 # 338  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 End of sentence for Description needs a period.  
 SuggestedRemedy  
 Add the period to the end of sentence.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.3.3.4 P161 L11 # 177  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 "is also as the row index" should be "is also used as the row index"  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.3.3.5 P162 L20 # 367  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A bit-order  
 Bit ordering in EnvContHeader and EnvStartHeader function definitions is reversed. In all other cases, we show ranges starting from higher value and ending with lower value. Here, for some reason, the ranges are reversed  
 SuggestedRemedy  
 Reverse the bit order, for example hdr<0:7> should become hdr<7:0>  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #263

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Cl 143 SC 143.3.3.5 P163 L28 # 360  
 Hajduczenia, Marek Charter Communications  
 Comment Type T Comment Status A  
 Format definition of EQ structure is missing. It is defined through a comment only  
 SuggestedRemedy  
 A formal definition will be needed, perhaps using C++ style for classes, showing fields defined and how they are defined?  

```
struct EQ {
bool Control[8];
int8u Data [8];
}
```

 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change  
 "// Consists of 8 bits of control (Ctrl[0...7])  
 // and 8 octets of data (Data[0...7])"  
 to  
 "// Consists of 8 bits of control (Ctrl[0...7])  
 // and 8 octets of data (Data[0...7]), as shown in Figure 143-2"

Cl 143 SC 143.3.3.5 P163 L32 # 366  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 "," versus ";"  
 SuggestedRemedy  
 change "for( octet\_index = 0; octet\_index < 8, octet\_index++ )" to "for( octet\_index = 0; octet\_index < 8>>>>;<<<<< octet\_index++ )", change marked in >>>><<<<<  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.3.3.5 P163 L32 # 178  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A GetMacOctet  
 GetMacOctet and IsIdle are not defined  
 SuggestedRemedy  
 Add in alpha order:  
 GetMacOctet (link\_id) a function that returns eight bits of data from the MAC associated with the passed <italic>link\_id</italic>.  
 IsIdle(byte) a Boolean function that returns True of all bits in the <italic>byte</italic> are idle.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #311

Cl 143 SC 143.3.3.5 P163 L33 # 359  
 Hajduczenia, Marek Charter Communications  
 Comment Type T Comment Status A GetMacOctet  
 Function GetMacOctet() used but not formally specified anywhere.  
 SuggestedRemedy  
 Insert a formal definition of GetMacOctet() function as follows:  

```
int8u GetMacOctet(ink_id)
The GetMacOctet() function retrieves one octet (8 bits) of data from a MAC identified by the link_id parameter and returns it to the calling function.
```

 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #311

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Cl 143 SC 143.3.3.5 P163 L33 # 311  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status A GetMacOctet  
 GetMacOctet function is not defined.  
 SuggestedRemedy  
 Returns an 8-bit vector based on eight PLS\_DATA.request primitives. Each bit may take one of four values: ONE, ZERO, DATA\_COMPLETE, or IDLE. If the PLS\_DATA.request primitive is not able to return a value of ONE, ZERO, or DATA\_COMPLETE, a value of IDLE will be returned instead.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Update definitions of GetMacOctet and IsIdle functions per  
[http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/kramer\\_3ca\\_10a\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/kramer_3ca_10a_0719.pdf)

Cl 143 SC 143.3.3.5 P163 L34 # 312  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status A GetMacOctet  
 IsIdle function is not defined.  
 SuggestedRemedy  
 A boolean function that returns TRUE if all eight bits of the presented octet have a value of IDLE. Otherwise, it returns FALSE.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #311

Cl 143 SC 143.3.3.6.2 P165 L1 # 361  
 Hajduczenia, Marek Charter Communications  
 Comment Type T Comment Status A  
 Variable EnvPam used but not initialized in the state diagram or description.  
 SuggestedRemedy  
 Add initialization value to state INIT in Figure 132-12  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Add initialization value (0) to state INIT in Figure 143-12

Cl 143 SC 143.3.3.6.2 P165 L1 # 365  
 Hajduczenia, Marek Charter Communications  
 Comment Type TR Comment Status D  
 In Figure 143-12, data starts being written into EnvTx from wRow of 1 (see INIT state where it is set to 0, and then NEXT\_ROW where it is set immediately to 1 before any data is written into EnvTx), while Figure 143-13 starts reading data from rRow equal to 0. This means that at the start of the state diagram, state and content of EnvTx[ch][0] is not defined in any way.  
 SuggestedRemedy  
 Suggest to change initialization condition in Figure 143-13 to match initialization of EnvTx in Figure 143-12, i.e., change rRow < 0 to rRow < 1. Index wrap-around will do the rest and we can avoid the problem altogether.  
 Proposed Response Response Status Z  
 REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 143 SC 143.3.3.6.2 P165 L3 # 489  
 Law, David Hewlett Packard Enterprise  
 Comment Type ER Comment Status A redraw  
 Subclause 2.6.3 'Draft Standard Formatting Requirements' of the IEEE 802.3 Operations Manual states that 'The draft must be provided to the IEEE in Adobe® Framemaker. At a minimum this shall be completed prior to the Sponsor ballot however it is preferable that the draft be maintained in this format for its entire life.'. It appears, however, that at least some of the state diagrams are not in Frame and are instead imported pictures, for example 143-12 and 143-13.  
 SuggestedRemedy  
 Ensure that Figures are converted to Framemaker prior to Sponsor ballot, the earlier the better to ensure that any errors created during the conversion are caught as soon as possible. If you need help in doing this please let me know.  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 See comment #98

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Cl 143 SC 143.3.3.6.2 P165 L15 # 364  
 Hajduczenia, Marek Charter Communications  
 Comment Type T Comment Status D  
 Name of CHECK\_ENV\_SIZE state is rather ill-fitting - there is no envelope size checking done in this state, all it does it prepare filler pattern in case there is no data to send  
 SuggestedRemedy  
 Change name of CHECK\_ENV\_SIZE state to PREP\_FILLER (for preparing filler EQ pattern)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.3.3.6.2 P165 L15 # 363  
 Hajduczenia, Marek Charter Communications  
 Comment Type T Comment Status D  
 Name of CHECK\_HEADER state is rather ill-fitting - there is no header check in this state, it is empty in fact  
 SuggestedRemedy  
 Change name of CHECK\_HEADER state to FETCH\_ENV (for fetching envelope if MCRS does send request in time)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.3.3.6.2 P165 L15 # 362  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 Figure 143-12 seems to be using "\*" symbol designating "AND" logical operation. All other SDs have been modified to use the new set of definitions. This one was left behind  
 SuggestedRemedy  
 Change all instances of "\*" to "AND" in Figure 143-12  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.3.3.6.2 P165 L36 # 339  
 Laubach, Mark Broadcom  
 Comment Type TR Comment Status A  
 In Acrobat for my PDF, it looks like a hyphen at the end of "BlkLeft[wCol]-" rather than a minus 1 "- ", like in the end of "EnvLeft[wCol]- " on line 30.  
 SuggestedRemedy  
 Confirm it should be a minus 1 '- ' and make it visibly clear.  
 Response Response Status C  
 ACCEPT.

Cl 143 SC 143.3.3.6.2 P166 L9 # 264  
 Kramer, Glen Broadcom  
 Comment Type TR Comment Status A  
 MCRS Transmit Process (Fig 143-13) and MCRS Receive Process (Fig 143-15) do not use proper bit locations, according to EQ format definition in Figure 143-2.  
 SuggestedRemedy  
 Change both state diagrams as shown in kramer\_3ca\_1\_0719.pdf  
 Response Response Status C  
 ACCEPT.

Cl 143 SC 143.3.4.3 P168 L43 # 179  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 "RX\_- CLK[ch]" should not cross the line.  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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**Cl 143**    **SC 143.3.4.4**                      **P169**            **L15**            # **265**

Kramer, Glen                                      Broadcom

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

When an envelope header is formed, the CRC8 is calculated over bits 8 through 63 of an EQ. But when the header is received, the IsHeader() function calculates its own CRC8 over bits 0 through 63. These CRC8 values will never match.

**SuggestedRemedy**

In Function IsHeader(...), replace the line  
"eq<64:71> == CRC8(eq<0:63>);"  
with the line  
"eq<71:64> == CRC8(eq<63:8>);"

**Response**                                      **Response Status**    **C**

ACCEPT.

**Cl 143**    **SC 143.3.4.4**                      **P169**            **L28**            # **266**

Kramer, Glen                                      Broadcom

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

Incorrect format for a hexadecimal numeric value

**SuggestedRemedy**

replace 0x0A0A0A0A with 0x0A-0A-0A-0A

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

PROPOSED ACCEPT.

**Cl 143**    **SC 143.3.4.4**                      **P169**            **L36**            # **180**

Remein, Duane                                      Futurewei Technologies, Inc.

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

Make code for OutputToMac(int16 link\_id, EQ eq) more condensed and readable by putting comments on same line as instruction, combining comments "// Rx other ctrl. character { // including /T/ (value 0xFD)" etc.

**SuggestedRemedy**

per comment

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

PROPOSED ACCEPT.

**Cl 143**    **SC 143.3.4.5.1**                      **P171**            **L21**            # **181**

Remein, Duane                                      Futurewei Technologies, Inc.

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

Variable wRow as defined in 143.3.4.3 is a six bit variable but in Fig 143-15 PARSE\_HEADER state it is been assigned a 5 bit value. These two sizes should agree.

**SuggestedRemedy**

Change RxEQ<4:0> to RxEQ<5:0>

**Response**                                      **Response Status**    **C**

ACCEPT.

**Cl 143**    **SC 143.3.4.5.2**                      **P172**            **L21**            # **182**

Remein, Duane                                      Futurewei Technologies, Inc.

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

Need to latch localtime on ESH.

**SuggestedRemedy**

Between PROCESS\_HEADER and UPDATE\_ENV\_SIZE add the following:  
New state: "CHECK\_FOR MPCPDU"  
Action: none  
Exit 1 to UPDATE\_ENV\_SIZE: else  
Exit 2 to 2nd new state: LinkID[rCol] (is a member of) {TS\_LLID}

2nd new state: "CAPTURE\_TIMESTAMP"  
Action: TS( Plid ) <= LocalTime  
Exit to UPDATE\_ENV\_SIZE: UCT

Define new variables:  
TS\_LLID  
Type: list of PLIDs  
Description: A list of all active PLIDs.

LocalTime  
Type: 32-bit unsigned  
See 144.2.1.2

**Response**                                      **Response Status**    **C**

ACCEPT IN PRINCIPLE.

MCRS cannot check for MPCPDUs. It has no notion of frames. No there is a cnept of LocalTime in MCRS. LocalTime is MPCP variable

Use [http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/kramer\\_3ca\\_4\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/kramer_3ca_4_0719.pdf)  
with the following changes:  
- MCRS\_ECH needs to be changed to MCRS\_ESH

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Cl 143 SC 143.4.1 P174 L8 # 183  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 We have generally agreed to use xMII where appropriate. Also the 25GMII supports 10 Gb/s operation only in a very obtuse manor.  
 SuggestedRemedy  
 Change  
 "The MCRS in Nx25G-EPON architecture serves as an interfaces sublayer between the MAC sublayer and 25GMII. The 25GMII interfaces have the following characteristics:" to "The MCRS in Nx25G-EPON architecture serves as an interface sublayer between the MAC and xMII. The xMII interfaces have the following characteristics:"  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Comment type changed to "T"  
 On page 174, line 11, change "They are capable of supporting 25 Gb/s or 10 Gb/s operation" to "The 25GMII is rate-scalable and may support rates of 25 Gb/s and 10 Gb/s"

Cl 143 SC 143.4.1.1 P174 L17 # 184  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 There is no need for an abbreviation which is never used (to say nothing of confusing if used)  
 SuggestedRemedy  
 Strike "(DC)" and "(UC)"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.4.1.1 P174 L30 # 404  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status D bucket  
 Nx25GEPON  
 SuggestedRemedy  
 Nx25G-EPON  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.4.1.1 P174 L42 # 389  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status A  
 Unnecessary line break  
 SuggestedRemedy  
 Also at line 45  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change width of the table to match current line width.

Cl 143 SC 143.4.1.2 P175 L4 # 185  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A 143.4.4  
 I don't believe there is a suitable reference to support this statement: "Additional details for MCRS implementations supporting the channel rate asymmetry are provided in 143.4.4."  
 SuggestedRemedy  
 Strike the statement  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Comment type changed to "T"  
 This points to missing details in MCRS specification. Nowhere do we define how to achieve assymetric behavior. Keep the reference for now and add editors note that section 143.4.4 is needed.

Cl 143 SC 143.4.1.2 P175 L5 # 54  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status A 143.4.4  
 Reference in red  
 SuggestedRemedy  
 Strike statement "Additional details for MCRS implementations supporting the channel rate asymmetry are provided in 143.4.4"  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #185

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Cl 143 SC 143.4.1.2 P175 L5 # 313  
 Lynskey, Eric Broadcom  
 Comment Type E Comment Status A 143.4.4  
 Subclause 143.4.4 does not exist.  
 SuggestedRemedy  
 Remove the sentence.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #185

Cl 143 SC 143.4.1.2 P175 L5 # 388  
 Dawe, Piers Mellanox  
 Comment Type E Comment Status A 143.4.4  
 Apparent cross-reference in red "143.4.4" doesn't work.  
 SuggestedRemedy  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #185

Cl 143 SC 143.4.1.2 P175 L5 # 340  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 "143.4.4" should be a proper crossref and not just RED in color.  
 SuggestedRemedy  
 Make it a proper cross ref.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.4.1.2 P175 L10 # 36  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "the channel number asymmetry mechanisms can be combined" to "the channel number asymmetry mechanisms may be combined"  
 Response Response Status C  
 ACCEPT.

Cl 143 SC 143.4.1.3.2 P175 L39 # 37  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "buffer can be reduced to only two rows" to "buffer may be reduced to only two rows"  
 Response Response Status C  
 ACCEPT.

Cl 143 SC 143.4.2 P176 L2 # 186  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Missing "The"  
 SuggestedRemedy  
 Add before: "ONU MCRS always sets the write pointer ..."  
 and at line 14 before "PCS receiver synchronizes on start-of-burst delimiter ..."  
 and at line 17 before "xMII and is received into ..."  
 and at line 17 before "OLT MCRS EnvRx buffer."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 143 SC 143.4.2 P176 L28 # 187  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 What is a DSC\_PLID?  
 SuggestedRemedy  
 Change to DISC\_PLID  
 Response Response Status C  
 ACCEPT.

Cl 143 SC 143.4.3 P176 L45 # 188  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 I believe MPCP has already been introduced in this clause  
 SuggestedRemedy  
 Change:  
 "Multi-Point Control Protocol (MPCP)" to  
 "MPCP"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 143 SC 143.5.4.2 P179 L6 # 106  
 Anslow, Pete Ciena  
 Comment Type T Comment Status A  
 The rules for entries in the "Status" column of PICS table are defined in 21.6.2 of the base standard. This does not include "+" as an "or" function.  
 SuggestedRemedy  
 Change "+" to "or" as per previous amendments  
 Response Response Status C  
 ACCEPT.

Cl 144 SC 144 P180 L1 # 464  
 Thompson, Geoff GraCaSI S.A./Independent  
 Comment Type TR Comment Status R  
 This clause is out of scope. It is shown in Fig. 144-2 as residing in the MAC sub-layer. This is a Physical Layer project which said it would "extend the operation of EPON protocols". That means to me the augmentation of what is specified in clause 64, not the creation of an entire new specification misplaced in the Physical Layer.

SuggestedRemedy  
 Rewrite the draft to fit what was promised in the PAR. Presumably that will include deleting lause 144.  
 Response Response Status W  
 REJECT.

The PAR scope states that this project "... also extends the operation of Ethernet Passive Optical Networks (EPON) protocols, such as MultiPoint Control Protocol (MPCP) and Operation Administration and Management (OAM)." Just like previous generations of Multi-Point Control Protocol (MPCP), the new generation uses GATE and REPORT MPCPDUs to provide time-based transmission arbitration for multiple connected ONUs. However, the new MPCP extends the existing MPCP specification by supporting multiple channels, and specifying finer granularity for transition units (2.56 ns EQs instead of 16 ns TQs). There are numerous other enhancements.

The TF strongly disagrees that the statement "extends the operation of Ethernet Passive Optical Networks (EPON) protocols, such as MultiPoint Control Protocol (MPCP)" implies that all the changes need to be confined to one of the existing MPCP clauses (see Clause 64 or Clause 77), and not be defined as a new clause. The TF made a decision to create a new clause instead of modifying an existing clause for clarity of presentation and for the convenience of users of the standard. This is not unlike an earlier WG decision to specify the simplified full-duplex MAC as a separate Annex 4A instead of modifying the operation of the existing CSMA/CD MAC in Clause 4.

Cl 144 SC 144 P244 L6 # 254  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 MP9b should ref 144.3.7.7 not 144.3.8.7.  
 SuggestedRemedy  
 per comment  
 Response Response Status C  
 ACCEPT.



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Cl 144 SC 144.1 P180 L12 # 189  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 We report queue occupancy levels not congestion.  
 SuggestedRemedy  
 Change:  
 "reporting of congestion" to:  
 "reporting queue occupancy"  
 Response Response Status C  
 ACCEPT.  
 Comment type changed to "T"

Cl 144 SC 144.1 P180 L20 # 190  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Missing "the", "a", or "an"  
 SuggestedRemedy  
 At the following locations (pg/line) change "" to read ""':  
 180/20 "TDM-based access to P2MP medium" -> "TDM-based access to \_the\_ P2MP medium"  
 181/27 "binding each instance of MAC" -> "binding each instance of \_a\_ MAC"  
 183/3 "upstream transmissions in EPON" -> "upstream transmissions in \_an\_ EPON"  
 186/5 "envelope transmission over multi-channel P2MP media" -> "envelope transmission over \_a\_ multi-channel P2MP media"  
 187/1 "For accuracy of receive clock" -> "For accuracy of \_the\_ receive clock"  
 187/11 "MPCPDU is received from MAC" -> "MPCPDU is received from \_the\_ MAC"  
 189/35 "To achieve this goal, MPCP includes processes that measure range" -> "To achieve this goal, \_the\_ MPCP includes processes that measure \_the\_ range" (2x)  
 190/11 "transmits DISCOVERY MPCPDU with timestamp value" -> "transmits a DISCOVERY MPCPDU with a timestamp value" (2x)  
 193/12 "of GATE Generation Process and a separate instance of Registration Completion Process" -> "of \_the\_ GATE Generation Process and a separate instance of \_the\_ Registration Completion Process"  
 195/26 "may only contain PLID, MLID, or ULID, but never GLID" -> "may only contain \_a\_ PLID, MLID, or ULID, but never \_a\_ GLID"  
 208/49 "registered ONUs using unicast" -> "registered ONUs using a unicast"  
 214/43 "transmitting at line rate" -> "transmitting at a line rate"  
 214/48 "transmitting at line rate" -> "transmitting at a line rate"  
 222/5 "timer counts down time" -> "timer counts down the time"  
 227/18 "ONU is capable of receiving DISCOVERY MPCPDU" -> "ONU is capable of receiving a DISCOVERY MPCPDU"  
 227/19 "transmitted by the OLT on DISC\_PLID" -> "transmitted by the OLT on the DISC\_PLID"  
 227/27 "ONU skips such discovery attempt" -> "ONU skips such discovery attempts" (add an "s" to attempt)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 144 SC 144.1 P180 L21 # 341  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 Bullets have inconsistent endings, one ends in a period, the other doesn't.  
 SuggestedRemedy  
 Editor to choose how to have consistent (or appropriate) line endings  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Remove "." at the end of the second bullet.

Cl 144 SC 144.1.1.1 P180 L45 # 191  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 Hopefully we allocate more than one grant to each ONU  
 SuggestedRemedy  
 Change  
 "allocating a transmission window (grant)" to  
 "allocating transmission windows (grants)"  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change "This arbitration is achieved by allocating a transmission window (grant) to each ONU." to "This arbitration is achieved by allocating transmission windows (grants) to ONUs."

Cl 144 SC 144.1.1.2 P181 L24 # 192  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type ER Comment Status A  
 This is the only instance of "MAC element"  
 SuggestedRemedy  
 Change to "MAC instances"  
 Response Response Status C  
 ACCEPT.

Cl 144 SC 144.1.1.2 P181 L40 # 193  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 This para implies free use of pre-defined single-copy broadcast for a number of purposes which is incorrect.  
 SuggestedRemedy  
 Change:  
 "Several single-copy broadcast logical links are pre-set. Such links may be used to broadcast MPCPDUs, CCPDUs, or OAMPDUs." to:  
 "Several single-copy broadcast logical links are pre-defined for specific purposes (see Table 144-1)."  
 Response Response Status C  
 ACCEPT.

Cl 144 SC 144.1.1.2 P181 L49 # 194  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 This statement is extraneous and misleading imho. Most LLID values are not setup by the Discovery Process and those that are not very "dynamic" but rather static.  
 SuggestedRemedy  
 Strike "Some LLID values are pre-set, while other values are dynamically assigned by the Discovery Process (144.3.5)."  
 If the TF believe it is necessary to mention the Discovery Process in this section then change "By default, the OLT is connected" to "By default during the Discovery Process (144.3.5), the OLT is connected"  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Strike the sentence "Some LLID values are pre-set, while other values are dynamically assigned by the Discovery Process (144.3.5)."  
 Add a new sentence, following the sentence "By default...": "These two connections per each ONU are established during the Discovery Process (see 144.3.5)."

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Cl 144 SC 144.1.1.3 P183 L4 # 38  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status R can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "newly connected ONU can be scheduled for the upstream transmission" to "newly connected ONU may be scheduled for the upstream transmission"  
 Response Response Status C  
 REJECT.  
 "Can" (i.e., "is able" or "is capable") is correct and is intended. "May" (i.e., "is allowed" or "is permitted") is semantically wrong here

Cl 144 SC 144.1.1.3 P183 L8 # 195  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 "registration requests" should be singular  
 "details" at line 13 too.  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.1.3 P183 L26 # 2  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 Empty lines  
 Similar issue in 144.1.4  
 SuggestedRemedy  
 Remove the empty lines  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.1.4.2 P184 L10 # 314  
 Lynskey, Eric Broadcom  
 Comment Type E Comment Status D bucket  
 Multiplexor  
 SuggestedRemedy  
 Multiplexer is used more frequently. Suggest that all instances of multiplexor be changed.  
 Page 184 lines 42 and 45. Page 186 line 33. Page 187 line 19 and 30.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.1.4.2 P184 L45 # 196  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type ER Comment Status A  
 "MCI:MA\_-  
 CONTROL.indication" crosses the line  
 SuggestedRemedy  
 make non-breaking  
 Response Response Status C  
 ACCEPT.

Cl 144 SC 144.1.4.2 P184 L45 # 3  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 Name of primitive is broken across lines  
 SuggestedRemedy  
 Make sure primitive names do not break across lines.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

## Proposed Responses

## IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 144 SC 144.1.4.4 P186 L3 # 197  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 MCRS already introduced on pg 181  
 SuggestedRemedy  
 Change:  
 "Multi-Channel Reconciliation sublayer (MCRS, see Clause 143)" to  
 "MCRS (see Clause 143)"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See comment #4

Cl 144 SC 144.1.4.4 P186 L4 # 4  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 MCRS primitibe defined before  
 SuggestedRemedy  
 Change "sublayer (MCRS, see Clause 143)." to "sublayer (see Clause 143)."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.2.1 P186 L27 # 198  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 Use of the term timestamp is ambiguous:  
 187/28 - defined as a variable  
 187/30 - something other than (LocalTime?) the variable that is being defined  
 187/33 - the variable that is being defined  
 187/52 - a non italicized variable  
 187/53 - "timestamp value" (which apparently is not the same as the variable)  
 188/2 - a field name "Timestamp field"  
 191/40 - the value of the variable (or maybe field?) "the Timestamp value pre-compensated"  
 192/24 - a field value "the Timestamp field value"  
 I could go on;  
 there are 29 instances of "Timestamp" most of which (but not all) are in italics (including a lone instance of "Timestamp drift" in DeregistrationTrigger definition),  
 there are 29 instances of "timestamp" none of which are in italics (including 11 instance of "timestamp value" and 11 instances of "timestamp drift")  
 We can be nicer to the first time reader.  
 SuggestedRemedy  
 See remain\_3ca\_2\_0719.pdf which shows all changes in marked text (remain\_3ca\_3\_0719 omits change markings).  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Implement the following changes from  
[http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/remain\\_3ca\\_2\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/remain_3ca_2_0719.pdf):  
 - 186 '27-30  
 - 186 '40  
 - 190 '16, change text "When an unregistered ONU receives the DISCOVERY MPCPDUs, it sets its LocalTime counter according to the value in the Timestamp field in the received MPCPDU." "When an unregistered ONU receives the DISCOVERY MPCPDUs, it sets its LocalTime counter based on the value in the Timestamp field in the received MPCPDU."  
 - 190 '20  
 - 190 '26-30  
 - 191 '40-45, excluding change to TimestampTx  
 - 199 '41, use the following "Up to seven LLIDs can be reported by a single REPORT MPCPDU. REPORT MPCPDUs also carry the <i>Timestamp</i> field. The value of this field is used by the OLT to check for the timestamp drift error (see 144.3.1.1)."  
 - 201 '6, use the following text: "The REGISTER\_REQ MPCPDUs carry the <i>Timestamp</i> field. The value of this field is used by the OLT to measure the round-trip time of that ONU (see 144.3.1.1)."  
 - 243 '17  
 - 247 '39, use the following text: "The value of the <i>Timestamp</i> field is generated by MAC Control and is not exposed through the client interface."

Proposed Responses

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Cl 144 SC 144.2.1 P186 L27 # 5 [redacted]  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 We usually use the term "forward" to describe the action of delivering frames somewhere else  
 SuggestedRemedy  
 Change "passing these frames" to "forwarding these frames"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.2.1.2 P186 L53 # 199 [redacted]  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 We should be more specific about which TX & Rx clocks are being referred to here.  
 SuggestedRemedy  
 Change  
 "At the OLT the counter shall track the transmit clock, while at the ONU the counter shall track the receive clock." to  
 "At the OLT the counter shall track the xMII transmit clock, while at the ONU the counter shall track the xMII receive clock."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change  
 "At the OLT the counter shall track the transmit clock, while at the ONU the counter shall track the receive clock." to  
 "At the OLT the counter shall track the 25GMII transmit clock, while at the ONU the counter shall track the 25GMII receive clock."  
 Update PICS.

Cl 144 SC 144.2.1.2 P187 L1 # 269 [redacted]  
 Kramer, Glen Broadcom  
 Comment Type T Comment Status A TBD  
 TBD and missing reference  
 SuggestedRemedy  
 replace with a cross-reference to 142.4.3.1  
 Response Response Status C  
 ACCEPT.

Cl 144 SC 144.2.1.2 P187 L1 # 480 [redacted]  
 Slavick, Jeff Broadcom  
 Comment Type TR Comment Status A TBD  
 TBD present for LocalTime reference.  
 SuggestedRemedy  
 Replace TBD with pointer to appropriate reference clause  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 See comment #269

Cl 144 SC 144.2.1.2 P187 L1 # 200 [redacted]  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 Either this statement is incorrect or the Control Parser Process is incorrect. "In the ONU, this variable is updated with the received timestamp value by the Control Parser Process (see 144.2.1.5)". Note that the ProcessTimestamp only sets the ONUs LocalTime once.  
 SuggestedRemedy  
 Copy the "// The following line is executed only in the ONU LocalTime = Timestamp;" lines to the end of the else statement in ProcessTimestamp definition (pg 188 line 17).  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #182.

Cl 144 SC 144.2.1.2 P187 L1 # 278 [redacted]  
 Marris, Arthur Cadence Design Systems  
 Comment Type TR Comment Status A TBD  
 {TBD reference to Clause 142 needed}  
 SuggestedRemedy  
 Add appropriate reference  
 Response Response Status W  
 ACCEPT IN PRINCIPLE.  
 See comment #269

Proposed Responses

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Cl 144 SC 144.2.1.2 P187 L1 # 6 [REDACTED]  
 Hajduczenia, Marek Charter Communications  
 Comment Type **TR** Comment Status **A** TBD  
 Missing reference to Clause 142  
*SuggestedRemedy*  
 I do not see any statement which could be referenced to. Strike the whole sentence?  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 See comment #269

Cl 144 SC 144.2.1.2 P187 L1 # 342 [REDACTED]  
 Laubach, Mark Broadcom  
 Comment Type **E** Comment Status **A** TBD  
 Resolve the red TBD text to cross reference to the appropriate Clause 142 subclause.  
*SuggestedRemedy*  
 Make it so.  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 See comment #269

Cl 144 SC 144.2.1.2 P187 L1 # 390 [REDACTED]  
 Dawe, Piers Mellanox  
 Comment Type **E** Comment Status **A** TBD  
 Missing cross-reference  
*SuggestedRemedy*  
  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 See comment #269

Cl 144 SC 144.2.1.2 P187 L1 # 107 [REDACTED]  
 Anslow, Pete Ciena  
 Comment Type **TR** Comment Status **A** TBD  
 "{TBD reference to Clause 142 needed}" is not acceptable content for a draft that is suitable to move to Standards Association ballot.  
*SuggestedRemedy*  
 replace "{TBD reference to Clause 142 needed}" with a suitable reference.  
 Response Response Status **W**  
 ACCEPT IN PRINCIPLE.  
 See comment #269

Cl 144 SC 144.2.1.2 P189 L1 # 298 [REDACTED]  
 Wienckowski, Natalie General Motors  
 Comment Type **TR** Comment Status **A** TBD  
 There is a red highlighted TBD in the document.  
*SuggestedRemedy*  
 Change: {TBD reference to Clause 142 needed}  
 To: Appropriate subclause in Clause 142.  
 Response Response Status **W**  
 ACCEPT IN PRINCIPLE.  
 See comment #269

Cl 144 SC 144.2.1.3 P187 L1 # 444 [REDACTED]  
 Powell, William Nokia  
 Comment Type **TR** Comment Status **A** TBD  
 Current text:  
 "For accuracy of receive clock, see {TBD reference to Clause 142 needed}."  
*SuggestedRemedy*  
 Change to read:  
 For accuracy of receive clock, see 142.4.3.1.  
 Response Response Status **W**  
 ACCEPT IN PRINCIPLE.  
 See comment #269

## Proposed Responses

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Cl 144 SC 144.2.1.3 P187 L9 # 201  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 What is a PLID? The mnemonic has not yet been introduced.  
 SuggestedRemedy  
 Change "PLID" to "Physical Layer ID (PLID)"  
 On pg 194 line 45 change "Physical Layer ID (PLID)" to "PLID"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.2.1.3 P187 L35 # 202  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type ER Comment Status A  
 The reference to T able 31A-1 should not be forest green but rather a live link here and at line 40.  
 SuggestedRemedy  
 per comment  
 Response Response Status C  
 ACCEPT.

Cl 144 SC 144.2.1.5 P188 L48 # 315  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status A  
 In Figure 144-5, it shows that the first argument passed to MCII is the DA. In 144.1.4.2, it shows the first parameter as being the opcode.  
 SuggestedRemedy  
 Remove DA from the argument list.  
 Response Response Status C  
 ACCEPT.

Cl 144 SC 144.3.1 P189 L34 # 203  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 "To main purpose of the MPCP" or not "To main purpose of the MPCP" Either way "To" is wrong.  
 SuggestedRemedy  
 Change:  
 "To main purpose of the MPCP" to  
 "The main purpose of the MPCP"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.1.1 P191 L33 # 343  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 For consistency, statements 1) and 2) need periods at the end of the sentence.  
 SuggestedRemedy  
 Make it so.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.1.1 P192 L29 # 39  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status R can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "This condition can be independently detected" to "This condition may be independently detected"  
 Response Response Status C  
 REJECT.  
 "Can" (i.e., "is able" or "is capable") is correct and is intended. "May" (i.e., "is allowed" or "is permitted") is semantically wrong here

Proposed Responses

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Cl 144 SC 144.3.1.1 P192 L34 # 204  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 MLID has not been introduced.  
 SuggestedRemedy  
 Change "MLID" to "Management Link ID (MLID)"  
 On pg 195 line 3 change "Management Link ID (MLID) carries" to "The MLID carries"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.1.1 P192 L37 # 205  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 This requirement is redundant as a properly implemented ProcessTimestamp function ensures that this first large timestamp difference is accommodated.  
 SuggestedRemedy  
 Change:  
 "This large difference is detected immediately after the registration is expected and the ONU shall not recognize it as a timestamp drift error." to  
 "This large difference that is detected immediately after registration is expected and the ONU does not recognize it as a timestamp drift error (see ProcessTimestamp 144.2.1.4)."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.

Change:  
 "This large difference is detected immediately after the registration is expected and the ONU shall not recognize it as a timestamp drift error." to  
 "This large difference that is detected immediately after registration is expected and the ONU does not recognize it as a timestamp drift error (see ProcessTimestamp in 144.2.1.4)."  
 + strike MP8b PICs + change MP8a to MP8

Cl 144 SC 144.3.1.2 P192 L44 # 206  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 This is the only instance of the word allowances in the draft. We should not indiscriminately use different terms for the same thing.  
 SuggestedRemedy  
 change to allocations  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.2 P193 L5 # 344  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 Only one of the five hyphenated (bulleted) have an ending period. Same for list beginning on page 193, line 52.  
 SuggestedRemedy  
 Editor to choose how to have consistent (or appropriate) line endings  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Remove "." at the end of the last sentence.  
 Cl 144 SC 144.3.2 P193 L12 # 207  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 "as separate instance" should be "a separate instance"  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Per comment. Also should be "are created"



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Cl 144 SC 144.3.4.1 P194 L46 # 208

Remein, Duane Futurewei Technologies, Inc.

Comment Type T Comment Status A

Are these "TDM-based medium access by the ONUs" something other than GATES?  
There is no need to introduce new terms here.

SuggestedRemedy

Change:  
"such as TDM-based  
medium access by the ONUs" to  
"such as GATE messages"

Response Response Status C

ACCEPT IN PRINCIPLE.

Comment type changed to "T"

"TDM-based medium access" is an explanation of "Nx25G-EPON operation", not an example, of flows. PLID carries all MPCPDUs, not only GATES.

Rephrase the sentence as follows: "The Physical Layer ID (PLID) carries messages used to control critical Nx25G-EPON operations, such as ONU registrations and arbitration of ONU's access to PON medium."

Cl 144 SC 144.3.5 P195 L44 # 209

Remein, Duane Futurewei Technologies, Inc.

Comment Type TR Comment Status A

There are duplicate requirements between Table 144-1 and the text of Section 144.3.5. For example registered ONUs accepting BCAST\_PLID is specified in Table 144-1 3rd row and on pg 196 line 17.

SuggestedRemedy

on pg 196 line 12 change:  
"a registered ONU shall accept all envelopes" to  
"a registered ONU accepts all envelopes"

Change Table 144-1 as shown in remain\_3ca\_1\_0719.pdf

Update PICS accordingly.

Response Response Status C

ACCEPT IN PRINCIPLE.

Implement changes per  
[http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/kramer\\_3ca\\_9\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/kramer_3ca_9_0719.pdf), with reasons for changes in  
[http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/kramer\\_3ca\\_8\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/kramer_3ca_8_0719.pdf).

Once changes to text are made, update PICS, removing items LL1a, LL1b, and LL2. Insert new PICS 144.5.4.2 per  
[http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/hajduczenia\\_3ca\\_2\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/hajduczenia_3ca_2_0719.pdf).

Change also "configured by management" to "assigned to this ONU by management" after implementing previous contributions.

Cl 144 SC 144.3.5 P196 L14 # 345

Laubach, Mark Broadcom

Comment Type E Comment Status D bucket

First list item ends in a ";", the other items have no ending punctuation.

SuggestedRemedy

Editor to choose how to have consistent (or appropriate) line endings

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Remove ";

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Cl 144 SC 144.3.6 P196 L27 # 210

Remein, Duane Futurewei Technologies, Inc.

Comment Type T Comment Status A

There are several disagreements between the text and Figure 144-11.

The same issues exists on pg 232 / Fig 144-30. and in Cl 144.4.3 pg 232 / Fig 144-30

SuggestedRemedy

In text	In Figure
DestinationAddress	Destination Address
SourceAddress	Source Address
OperandList	Operand List

Change Figures to agree with the text (assuming these are considered variables, otherwise it might be easier to change the text)

Response Response Status C

ACCEPT.

Cl 144 SC 144.3.6 P196 L35 # 40

Hajduczenia, Marek Charter Communications

Comment Type ER Comment Status A can-vs-may

"can" used and not intended per Style Guide

SuggestedRemedy

Change "For MPCPDUs originating at the OLT, this can be the address of" to "For MPCPDUs originating at the OLT, this may be the address of"

Response Response Status C

ACCEPT.

Cl 144 SC 144.3.6.1 P197 L1 # 346

Laubach, Mark Broadcom

Comment Type E Comment Status D bucket

Move the page break from before this line to after this paragraph. The preceeding page looks like it is missing information at the bottom of the page.

SuggestedRemedy

Editor to choose.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Move the page break from before this line to after this paragraph.

Cl 144 SC 144.3.6.1 P197 L28 # 41

Hajduczenia, Marek Charter Communications

Comment Type ER Comment Status R can-vs-may

"can" used and not intended per Style Guide

SuggestedRemedy

Change "Up to seven envelope allocations can be carried" to "Up to seven envelope allocations may be carried"

Response Response Status C

REJECT.

"Can" (i.e., "is able" or "is capable") is correct and is intended. "May" (i.e., "is allowed" or "is permitted") is semantically wrong here

Cl 144 SC 144.3.6.1 P197 L48 # 211

Remein, Duane Futurewei Technologies, Inc.

Comment Type TR Comment Status A

We seem to have lost the definition of StartTime.

SuggestedRemedy

Add after ChannelMap description

"— StartTime:

This 32-bit unsigned integer value represents the start time of the transmission window (burst), expressed in the units of EQT. The start time is compared to the <|>LocalTime</|>, to correlate the start of the grant."

Response Response Status C

ACCEPT IN PRINCIPLE.

Per comment, but StartTime should be in italics. No comma after LocalTime.

## Proposed Responses

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Cl 144 SC 144.3.6.1 P198 L20 # 212  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 Here we use the phrase "The value of 0 in this field signifies an empty ..." on pg 200 line 10 we use "The value of zero in this field signifies an empty ..." meanwhile we have a good constant defined for this - ESC\_PLID.  
 SuggestedRemedy  
 Change both locations to "When this field is set to the value of ESC\_PLID then it signifies an empty ..."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change both locations to "When this field is set to the value of ESC\_LLID (see Table 144-1) then it signifies an empty ..."

Cl 144 SC 144.3.6.2 P199 L40 # 42  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status R can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "Up to seven LLIDs can be reported by a single" to "Up to seven LLIDs may be reported by a single"  
 Response Response Status C  
 REJECT.  
 "Can" (i.e., "is able" or "is capable") is correct and is intended. "May" (i.e., "is allowed" or "is permitted") is semantically wrong here

Cl 144 SC 144.3.6.2 P199 L47 # 213  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status R  
 The description for the timestamp field is repeated 7x. We don't do this for other variable definitions  
 197/36  
 199/47  
 201/13  
 203/4  
 204/41  
 206/4  
 209/1

Similar situation exist for other fields.  
 SuggestedRemedy  
 Remove the description for all but the first instance of this field (pg 197 line 36). Note that the first instance of this is generic and does not mention OLT or ONU (which is good). Add a cross reference to the first definition instance "See 144.3.6.1" (with a live link of course).  
 Do the same for the following field def's (pg/line fieldname xRef):  
 200/9 LLID "See 144.3.6.1"  
 206/9 ChannelMap "See 144.3.6.1"  
 207/38 SP1Length "See 144.3.6.4"  
 207/42 SP2Length "See 144.3.6.4"  
 207/46 SP3Length "See 144.3.6.4"

Response Response Status U  
 REJECT.

Comment type changed to "T"

- Definitions of ChannelMap are different for GATE and DISCOVERY MPCPDUs
- Definitions of timestamp should be corrected and will therefore be different.
- Definitions of LLID are different for GATE and REPORT MPCPDUs
- Definitions of SPnLength are different in DISCOVERY and REGISTER MPCPDUs

Timestamps in GATES are not the same as the content of MPCP Local time counter. Each timestamp is pre-compensated by the RTT value of the destination ONU.

Proposed Responses

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Cl 144 SC 144.3.6.2 P200 L2 # 214  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 We should make it clear that GLIDs are not included in the NonEmptyQueues count.  
 SuggestedRemedy  
 After "The number of LLIDs" add " (PLID, MLID, and ULIDs)"  
 Proposed Response Response Status Z  
 REJECT.  
 This comment was WITHDRAWN by the commenter.  
 Comment type changed to "T"

Cl 144 SC 144.3.6.3 P201 L6 # 215  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 The variable name Timestamp should not cross the line  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.6.3 P201 L22 # 347  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 In tables in this subclause, there should be some consistency on whether to use a period at the end of an item in the Comment column. For example, in some cases "Ignored on reception" has an ending period, in other tables, it does not. Suggest being consistent across this subclause for those table Comments that read like a statement.  
 SuggestedRemedy  
 Editor to choose how to have consistent (or appropriate) line endings  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Remove periods within tables when a non-complete sentence is used.

Cl 144 SC 144.3.6.3 P201 L31 # 216  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 PendingEnvelopes is an 8-bit value in the text but a 16 bit field in Fig 144-14 whereas EchoPendingEnvelopes is only 8-bits in both text and fig 144-15 (pg 203/204),  
 At the very lease these should agree.  
 Should we consider increasing the maximum size of PendingEnvelopes? This seemed like a reasonable size 10 years ago for pending grants but maybe not now.  
 SuggestedRemedy  
 Increase the size of these to a 10 bits. (4 x larger)  
 Likewise increase size of EchoPendingEnvelopes on pg 203 line 33 and in Figure 144-15 (adjust Pad to 27 also).

Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change "This is an unsigned 8-bit value signifying the maximum number of envelope allocations" to "This is an unsigned 16-bit value signifying the maximum number of envelope allocations"  
 Change "This is an unsigned 8-bit value holding the number of envelope descriptors" to "This is an unsigned 16-bit value holding the number of envelope descriptors"  
 In Figure 144–15, change size of EchoPendingEnvelopes from 1 to 2, and decrease pad from 28 to 27.

Cl 144 SC 144.3.6.3 P202 L22 # 458  
 Nicholl, Shawn Xilinx  
 Comment Type E Comment Status A  
 In "Figure 144-14 - REGISTER\_REQ MPCPDU" unexpected use of hyphen. Contrast with "Figure 103-26 - REGISTER\_REQ MPCPDU" in existing 802.3-2018 which shows "Length/Type = 0x8808" and "Opcode = 0x0004". There are other figures in the document with unexpected hyphen (eg. Figure 144-30, 144-31, 144-32).  
 SuggestedRemedy  
 Remove the hyphen from the figures.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See comment #488.

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Cl 144 SC 144.3.6.4 P202 L49 # 217  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Is "destination address" the same as "Destination Address" and "DestinationAddress"?  
 SuggestedRemedy  
 replace with "DestinationAddress"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.6.4 P203 L11 # 218  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 PLID has already been introduced.  
 SuggestedRemedy  
 Change  
 "physical layer identifier (PLID, see 144.3.4.1)" to  
 "PLID (see 144.3.4.1)"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.6.4 P203 L14 # 219  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 MLID has already been introduced.  
 SuggestedRemedy  
 Change:  
 "management link identifier (MLID, see 144.3.4.2)" to  
 "MLID, (see 144.3.4.2)"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.6.5 P204 L39 # 108  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D bucket  
 "Figure 144-14" should be a cross-reference.  
 Likewise for "Figure 144-16" on page 208, line 52  
 SuggestedRemedy  
 Change "Figure 144-14" and "Figure 144-16" on page 208, line 52 to be cross-references.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.6.6 P206 L17 # 220  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 Elsewhere (ex. when assigning timestamp) we use LocalTime not local clock. It would be better if we were consistent.  
 SuggestedRemedy  
 Change "the local clock" to "LocalTime" (in italics)  
 Response Response Status C  
 ACCEPT.

Cl 144 SC 144.3.6.6 P206 L40 # 43  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 In table 144-7, change all instance of "OLT cannot receive" to "OLT is not capable of receiving" and "OLT can receive" to "OLT is capable of receiving"  
 Response Response Status C  
 ACCEPT.

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Cl 144 SC 144.3.6.6 P207 L19 # 221  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Improper left margin. Reset para style to T,text  
 SuggestedRemedy per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.6.6 P207 L20 # 325  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status A  
 The draft makes it very clear how the ONU should react when an OLT advertises multiple speeds during a discovery attempt. There is no description of how the ONU should handle a case when multiple coexistence types are advertised. It can be left to the ONU to decide.  
 SuggestedRemedy Remove the second two sentences of the paragraph and replace with: The OLT MPMC client may allow a concurrent registration of ONUs with different rates by setting both bits 5 and 6 to 1. The processing of DiscoveryInfo flags by the ONU and the ONU behavior in dual-rate systems is further specified in 144.3.9. The OLT MPMC client may also allow a concurrent registration of ONUs with different coexistence options by setting both bits 14 and 15 to 1. For ONUs that support both coexistence types, the choice of which type to attempt to register is implementation dependent.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.

Minor editorial tweaks

Remove the second two sentences of the paragraph and replace with: "The OLT MPMC client may allow a concurrent registration of ONUs with different rates by setting both bits 5 and 6 to 1. The processing of DiscoveryInfo flags by the ONU and the ONU behavior in dual-rate systems is further specified in 144.3.9. The OLT MPMC client may also allow a concurrent registration of ONUs with different coexistence options by setting both bits 14 and 15 to 1. For ONUs that support both coexistence types, the choice of which type to attempt to register is implementation-dependent."

Cl 144 SC 144.3.6.7 P208 L42 # 222  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 This statement is misleading "Generally, the SYNC\_PATTERN MPCPDUs are transmitted in envelopes with the LLID equal to DISC\_PLID (see 144.3.5)." as it may not be the general case but does describe a required case for unregistered ONUs. Subsequent statement in this section contradicts the "Generally" phrasing.  
 SuggestedRemedy Change the statement as follows:  
 "The SYNC\_PATTERN MPCPDUs are transmitted in envelopes with the LLID equal to DISC\_PLID (see 144.3.5) to allow unregistered ONUs to obtain the synchronization pattern."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.

Change the statement as follows:  
 "As part of the Discovery Process, the SYNC\_PATTERN MPCPDUs are transmitted in envelopes with the LLID equal to DISC\_PLID (see 144.3.5) to allow unregistered ONUs to obtain the synchronization pattern."

Cl 144 SC 144.3.6.7 P208 L52 # 348  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 "Figure 144-16" needs to be a proper cross reference.  
 SuggestedRemedy Make it so.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7 P210 L34 # 299  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D bucket  
 There is a reference to a place in this document that is red text and does not have a hyperlink.  
 SuggestedRemedy Change 141.1.3 to a Cross-Reference.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See comment #223

Proposed Responses

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Cl 144 SC 144.3.7 P210 L34 # 7  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 Reference in red?  
 SuggestedRemedy  
 Change to 142.1.3 and make it live  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7 P210 L34 # 223  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Why is this a ref to 143.1.3 and in red font?  
 SuggestedRemedy  
 make this a live link to 142.1.3  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7 P210 L34 # 349  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 Turn "143.1.3" into a proper cross reference or remove the Red text.  
 SuggestedRemedy  
 Make it so.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7 P210 L34 # 274  
 Marris, Arthur Cadence Design Systems  
 Comment Type E Comment Status D bucket  
 Fix cross reference (see 143.1.3)  
 SuggestedRemedy  
 Fix cross reference (see 143.1.3)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See comment #223

Cl 144 SC 144.3.7 P210 L38 # 224  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status A  
 We should be clear that the Discovery process is aborted only if a SYNC\_PATTERN is receive for the DISC\_PLID.  
 SuggestedRemedy  
 Change:  
 "If a SYNC\_PATTERN MPCPDU is received ..." to  
 "If a SYNC\_PATTERN MPCPDU directed to the DISC\_PLID is received ..."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Changes per comment.  
 Also implement changes per  
[http://www.ieee802.org/3/ca/public/meeting\\_archive/2019/07/kramer\\_3ca\\_7\\_0719.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2019/07/kramer_3ca_7_0719.pdf)

Cl 144 SC 144.3.7 P210 L46 # 8  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 Compound adjective "16 bit wide"  
 SuggestedRemedy  
 Change to "16-bit wide"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 144 SC 144.3.7 P210 L50 # 225  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status A  
 This is the only instance of the term off-line. It is easier on the reader if we are consistent in our use of terms. Unregistered is used at least 22 times, newly connected is use 3x.  
 SuggestedRemedy  
 Replace with "Off-line" and "newly connected" with "unregistered". Note that on pg 210 line 26 just strike "newly connected or".  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change "off-line" to "unregistered".

Cl 144 SC 144.3.7 P211 L1 # 303  
 Kramer, Glen Broadcom  
 Comment Type T Comment Status A  
 "Each ONU waits a random amount of time before transmitting the REGISTER\_REQ MPCPDU that is shorter than the length of the discovery window."  
 A very confusing sentence. What is shorter then the discovery window, the REGISTER\_REQ MPCPDU or the random amount of time?  
 SuggestedRemedy  
 Split this into two sentences:  
 "Each ONU waits a random amount of time before transmitting the REGISTER\_REQ MPCPDU. The wait time together with the REGISTER\_REQ MPCPDU transmission time (including optical overhead, burst synchronization sequence, and FEC paity data) do not exceed the length of the discovery window."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Split this into two sentences:  
 "Each ONU waits a random amount of time before transmitting the REGISTER\_REQ MPCPDU. The wait time together with the REGISTER\_REQ MPCPDU transmission time (including optical overhead, burst synchronization sequence, and FEC parity data) does not exceed the length of the discovery window."

Cl 144 SC 144.3.7 P211 L3 # 9  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status R can-vs-may  
 Can versus may  
 SuggestedRemedy  
 Change "REGISTER\_REQ MPCPDUs can be received by the OLT" to "REGISTER\_REQ MPCPDUs may be received by the OLT"  
 Response Response Status C  
 REJECT.  
 "Can" (i.e., "is able" or "is capable") is correct and is intended. "May" (i.e., "is allowed" or "is permitted") is semantically wrong here.

Cl 144 SC 144.3.7 P211 L3 # 44  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status A can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "valid REGISTER\_REQ MPCPDUs can be received" to "valid REGISTER\_REQ MPCPDUs may be received"  
 Response Response Status C  
 ACCEPT.



Cl 144 SC 144.3.7 P211 L9 # 226  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status A  
 It is not clear to me why we expect the ONU to lie to the OLT as implied by this statement "Note that even though a compliant ONU is not prohibited from supporting more than one data rate in any transmission channel, it is expected that a single supported data rate for upstream and downstream channel is indicated in the RegisterRequestInfo field." While I agree that an ONU should only attempt to register at a single rate it should advertise it's capabilities truthfully.  
 The description of the information in the RegisterRequestInfo seems to begin with "Included in the REGISTER\_REQ MPCPDU is the ONU's MAC address and ..." at line 3, which would make a better para break than this misguided note.

*SuggestedRemedy*

Start a new para beginning at line 3 "Included in the REGISTER\_REQ MPCPDU is the ONU's MAC address and ..." and combine with the para starting "Note even thought ..."

## Change:

"Note that even though a compliant ONU is not prohibited from supporting more than one data rate in any transmission channel, it is expected that a single supported data rate for upstream and downstream channel is indicated in the RegisterRequestInfo field." to "Note that even though a compliant ONU is not prohibited from supporting more than one data rate in any transmission channel, it is expected that an ONU only attempt to register at a single rate as indicated in the RegisterRequestInfo field bits 5 and 6."

Response Response Status C

ACCEPT IN PRINCIPLE.

## Change:

"Note that even though a compliant ONU is not prohibited from supporting more than one data rate in any transmission channel, it is expected that a single supported data rate for upstream and downstream channel is indicated in the RegisterRequestInfo field." to  
 "Note that even though a compliant ONU may be capable of supporting more than one data rate in any transmission channel, it is expected that an ONU only attempts to register at a single rate as indicated in the RegisterRequestInfo field bits 5 and 6."

Additionally, in the sentence "Additionally, a registering ONU notifies the OLT of its transmission capabilities in the upstream and downstream channels by setting appropriately the flags in the RegisterRequestInfo field, as specified in 144.3.6.3.", replace "in the upstream and downstream channels" with "in the current upstream channel"

Cl 144 SC 144.3.7 P211 L13 # 10  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 Wrong field names  
*SuggestedRemedy*  
 Change "the Laser On Time and Laser Off Time fields." to "the <i>LaserOnTime</i> and <i>LaserOffTime</i> fields." - make sure names are italicized  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7 P211 L26 # 45  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status D can-vs-may  
 "can" used and not intended per Style Guide  
*SuggestedRemedy*  
 Change "the ONU is registered and normal message traffic can begin" to "the ONU is registered and normal message traffic may begin"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7 P211 L32 # 46  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status D can-vs-may  
 "can" used and not intended per Style Guide  
*SuggestedRemedy*  
 Change "The ONU can then reregister" to "The ONU may then reregister"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 144 SC 144.3.7 P211 L33 # 324  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status D  
 Reregister and Deregister are not valid flags.  
 SuggestedRemedy  
 Change to, "...REGISTER\_MPCPDU may indicate a value, NACK, that if specified forces the receiving ONU into reregistering." In the next sentence, change to "...REGISTER\_REQ MPCPDU contains the NACK bit..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7.1 P213 L14 # 351  
 Laubach, Mark Broadcom  
 Comment Type E Comment Status D bucket  
 The "u" in "us" is not a symbol.  
 SuggestedRemedy  
 Should be the proper mu symbol.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7.3 P213 L38 # 227  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 The description of ChState does not sound like an integer.  
 SuggestedRemedy  
 Change type to "8-bit Boolean array"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change to "Array of eight boolean values"

Cl 144 SC 144.3.7.3 P213 L51 # 11  
 Hajduczenia, Marek Charter Communications  
 Comment Type TR Comment Status D  
 Undefined variables / constants? MissedReportCount, MISSED\_REPORT\_LIMIT  
 SuggestedRemedy  
 Need to be added and defined  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 No proposal included, discussion needed?

Cl 144 SC 144.3.7.3 P214 L4 # 317  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status D  
 There is no way for the ONU to send a register ack once it has been registered. Figure 144-22 shows that the ONU can only send a register request once it has reached the REGISTERED state. Once the REGISTERED state in Figure 144-21 has been reached, only the other conditions (1, 2, 4) are expected.  
 SuggestedRemedy  
 Replace MsgRegisterAck with MsgRegisterReq in two places. Also replace Deregister with NACK.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7.3 P214 L7 # 323  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status D  
 Deregister is not a valid flag.  
 SuggestedRemedy  
 Change to NACK.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Responses

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Cl 144 SC 144.3.7.3 P214 L9 # 228  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 The description of GrantEndTime does sound like an integer.  
 SuggestedRemedy  
 Change type to "32-bit unsigned integer"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7.3 P214 L36 # 229  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 The description of MaxDelay does sound like an integer.  
 SuggestedRemedy  
 Change type to "32-bit unsigned integer"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7.3 P214 L37 # 47  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status D can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "the maximum delay the ONU can apply to" to "the maximum delay the ONU may apply to"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7.3 P214 L44 # 391  
 Dawe, Piers Mellanox  
 Comment Type T Comment Status D  
 10.3125 Gb/s  
 SuggestedRemedy  
 10.3125 GBd. Also 25.78125 Gb/s -> GBd  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7.3 P214 L49 # 300  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Missing non-breaking spaces in number that have 4 or more digits to the right of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual.  
 SuggestedRemedy  
 Change: 25.78125  
 To: 25.781 25  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 144 SC 144.3.7.3 P215 L1 # 48  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status D can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "this variable can take the following values" to "this variable takes the following values"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Responses

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Cl 144 SC 144.3.7.3 P215 L21 # 230

Remein, Duane Futurewei Technologies, Inc.

Comment Type TR Comment Status D

This definition of RegAllowed disallows an ONU capable of both 10 & 25 G rates from registering with an OLT that is also capable of both 10 & 25G rates at the 10G rate. There may be good reasons that we haven't thought of that would make such behavior beneficial. There are several solutions:  
 1) add a bit for 10G Discovery Window for single rate ONUs only.  
 2) add a note indicating that the OLT may lie to the ONU regarding capabilities to force registration at 10G rate.

SuggestedRemedy

I would prefer option 1.  
 Reflect any changes in 144.3.9 also

Proposed Response Response Status W

PROPOSED REJECT.

To allow ONU deterministic behavior, ONU is required to register at the highest rate supported by both the OLT and this ONU.

The OLT doesn't lie to the ONU. It can choose what capability to advertize (see 144.3.9)

To force 10G- and 25G-capable ONUs to register at 10G, the OLT "temporarily disables" its 25G receive capability, so option 2 is employed. This is the same method that is employed with 10G and 1G capable ONUs in 802.3av.

No changes required.

Cl 144 SC 144.3.7.3 P215 L45 # 231

Remein, Duane Futurewei Technologies, Inc.

Comment Type T Comment Status D

The description of RegStart does sound like an integer.

SuggestedRemedy

Change type to "32-bit unsigned integer"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 144 SC 144.3.7.3 P215 L53 # 232

Remein, Duane Futurewei Technologies, Inc.

Comment Type T Comment Status D

The description of SpSeq does sound like an integer.

SuggestedRemedy

Change type to "32-bit unsigned integer"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 144 SC 144.3.7.4 P216 L12 # 352

Laubach, Mark Broadcom

Comment Type E Comment Status D bucket

Of the items in the a) to f) list, one ends in a period, the rest do not. Use consistent line endings.

SuggestedRemedy

Editor to choose how to have consistent (or appropriate) line endings

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Remove "." at the end of bullet items

Cl 144 SC 144.3.7.5 P216 L48 # 233

Remein, Duane Futurewei Technologies, Inc.

Comment Type ER Comment Status D

No variable name MsgRegsiter is used. Maybe should be MsgRegister?

SuggestedRemedy

per comment

Proposed Response Response Status W

PROPOSED ACCEPT.

Proposed Responses

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Cl 144 SC 144.3.7.8 P218 L36 # 234  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 "Registered" should be in italics  
 SuggestedRemedy per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 Two instances

Cl 144 SC 144.3.7.8 P219 L9 # 235  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status D  
 In valid symbol in exit criteria from WAIT\_FOR\_SYNC "msgSyndPattern.Index >>?<< SpSeq  
 SuggestedRemedy Replace "?" with less than or equal to symbol  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 Replace "?" with b"!=" (not equal)

Cl 144 SC 144.3.7.8 P219 L9 # 12  
 Hajduczenia, Marek Charter Communications  
 Comment Type TR Comment Status D  
 Wrong symbol in line: "?"  
 SuggestedRemedy Likely it is supposed to be "!="  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.7.8 P219 L36 # 353  
 Laubach, Mark Broadcom  
 Comment Type T Comment Status D  
 In Figure 144-22, is there a blank line in the middle of the steps in COMMIT\_DISC\_ENV or is something technical missing?  
 SuggestedRemedy Verify if something missing, and if so fix it. If it is indeed a blank line consider removing.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Remove the blank line

Cl 144 SC 144.3.7.8 P219 L49 # 316  
 Lynskey, Eric Broadcom  
 Comment Type E Comment Status D bucket  
 In Figure 144-22, timestampDrift should be capitalized.  
 SuggestedRemedy Change to TimestampDrift.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.8 P220 L3 # 236  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 see 1.4.278 should be a live link  
 SuggestedRemedy per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Responses

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Cl 144 SC 144.3.8 P220 L8 # 237  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 It would be useful to the reader to refer back to Figure 144-3 & 144-4.  
 SuggestedRemedy  
 At the end of the first para add: "The following description of the granting process makes use of the interfaces and functional blocks found in Figure 144-3 and Figure 144-4."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 Comment type changed to "T"

Cl 144 SC 144.3.8.1 P220 L36 # 238  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 The description of MPCP\_PROCESS\_DLY and GATE\_TIMEOUT does sound like an integer.  
 SuggestedRemedy  
 Change type to "32-bit unsigned integer"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.8.1 P220 L40 # 301  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Use a non-breaking space in number that have 4 or more digits to the left of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual, not a comma.  
 SuggestedRemedy  
 Change: 6,400  
 To: 6 400 or 6400 as 4 digit numbers don't have to have the space unless they are in a column with larger numbers.  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 144 SC 144.3.8.1 P220 L47 # 302  
 Wienckowski, Natalie General Motors  
 Comment Type E Comment Status D  
 Use a non-breaking space in number that have 4 or more digits to the left of the decimal per 13.3.2 of the 2014 IEEE-SA Style Manual, not a comma.  
 SuggestedRemedy  
 Change: 19,531,250  
 To: 19 531 250  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 144 SC 144.3.8.1 P220 L47 # 239  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status D  
 Assuming GATE\_TIMEOUT really is a constant as implied then 50 ms is not the default value, it is the only allowed value.  
 SuggestedRemedy  
 Strike ", default value"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Responses

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Cl 144 SC 144.3.8.3 P221 L4 # 240  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 This variable is stated as a Boolean array and it is confusing to refer to it as "A Boolean that represents"  
 SuggestedRemedy  
 Change:  
 "A Boolean that represents" to  
 "Each element in this Boolean array represents"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Use this text:  
 "Each element of this array is associated with the respective MCRS channel and represents whether..."  
 Strike the last sentence

Cl 144 SC 144.3.8.7 P222 L33 # 242  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status D  
 Given only one requirement maps to this clause there should ideally be only one shall statement.  
 SuggestedRemedy  
 Change:  
 "The OLT shall implement the GATE Generation state diagram as shown in Figure 144–23. A separate instance of the state diagram shall be implemented per each registered ONU (PLID)." to  
 "The OLT shall implement a separate instance for each registered ONU (PLID) of the GATE Generation state diagram as shown in Figure 144–23."  
 No change to PICS needed.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 The existing text reads better. No changes needed.

Cl 144 SC 144.3.8.3 P221 L22 # 241  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 In all other variable definitions we give the size of the variable or field, we should here also.  
 SuggestedRemedy  
 Change ass follows:  
 "LLID: LLID" -> "LLID: the 16-bit LLID"  
 StartTime: Start time" -> "StartTime: the 32-bit start time"  
 "Length: The length" -> "Length: the 22-bit length"  
 observe proper italics format.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.8.8 P223 L40 # 244  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status D  
 There does not appear to be any field defined as MsgGate.ChMap  
 SuggestedRemedy  
 Change to MsgGate.ChannelMap (2x in this SD) as used elsewhere and defined in 144.3.6.1.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.8.6 P222 L22 # 305  
 Kramer, Glen Broadcom  
 Comment Type E Comment Status D bucket  
 "An array 16-bit elements" is missing "of"  
 SuggestedRemedy  
 Change to "An array of 16-bit elements"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.8.8 P223 L40 # 243  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status D  
 Ampersand as an operator is not included in our list of conventions.  
 SuggestedRemedy  
 Use "AND"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Responses

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Cl 144 SC 144.3.8.11 P226 L8 # 13  
 Hajduczenia, Marek Charter Communications  
 Comment Type TR Comment Status D  
 Undefined primitive: MPRS\_CTRL?  
 SuggestedRemedy  
 Is MCRS\_CTRL intended?  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.9.1 P227 L6 # 14  
 Hajduczenia, Marek Charter Communications  
 Comment Type E Comment Status D bucket  
 Table 144-9 has very inconsistent line width  
 SuggestedRemedy  
 Align with standard for 802.3 drafts  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.3.9.1 P227 L10 # 245  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Allowing  
 15G-EP and 50G-EP  
 ON ON  
 to cross the line is confusing.  
 SuggestedRemedy  
 ensure "EPON" appears on a single line  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.4.2 P229 L28 # 246  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 Shouldn't this be the "CCP Client" not the "MPMC Client" (at least per Figure 144-3, 4, 28 & 29)? This seems to be a common error throughout 144.4 however there also appear to be a few cases where MPCP Client is correct. Below is a list of suspect uses (pg/line & quote.  
 229/35 local MPMC Client,  
 229/37 OLT MPMC Client,  
 229/46 local MPMC Client,  
 230/17 MPMC Client initiates,  
 230/34 MPMC Client initiates,  
 231/3 MPMC Client initiates,  
 231/24 MPMC Client initiates,  
 231/37 MPMC Client may monitor,  
 231/39 MPMC Client may (this instance may be OK check carefully),  
 231/41 notify the MPMC Client,  
 231/44 the MPMC Client at the ONU.  
 238/25 MPMC Client and is processed

SuggestedRemedy  
 per comment  
 We could consider just changing the four figures as that would be less invasive than what is suggested in this comment. Note that CCP Client does not appear in the draft at this time (including top level layering diagrams such as 144-2).

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 This will require TF discussion. Generally, a client includes the name of a sublayer of which it is a client ( we also use MAC Client and PMA Client). So, "MPMC Client" is correct for a client of Multi-Point MAC Control sublayer. Everywhere in text we use "MPMC Client" and never "MPCP Client" or "CCP Client". However, a few pictures label the boxes "MPCP Client" and "CCP Client". If we decide to reconcile these differences we can do one of two things:  
 1) Replace 36 occurrences of "MPMC Client" with either "MPCP Client " or "CCP Client"  
 2) In Figures 144-3, -4, -10, -11, -28, -29, replace "MPCP Client" with "MPMC Client (MPCP)" and "CCP Client" with "MPMC Client (CCP)"



Proposed Responses

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Cl 144 SC 144.4.2 P229 L44 # 247  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 Add clarification to the statement "Any non-persistent changes are reverted upon ONU reset and re-registration."  
 SuggestedRemedy  
 Add to the end of the sentence "(i.e., the channel reverts to it's default state)"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add to the end of the sentence "(i.e., the channel reverts to its default state)"  
 Change: "it's" to "its"

Cl 144 SC 144.4.2 P230 L1 # 248  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Does one have to change both US & DS? Seems a bit onerous to me.  
 SuggestedRemedy  
 Change:  
 "enabling / disabling one of downstream and upstream channels" to  
 "enabling / disabling one of the downstream or upstream channels"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.4.2.1 P230 L4 # 249  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status D  
 What prevents the OLT from persistently disabling the only DS channel an ONU has available and thereby breaking the ONU?  
 SuggestedRemedy  
 Add at the end of the para "The OLT shall not disable a downstream channel at the ONU if it is the single remaining enabled channel at that ONT"  
 Update PICS.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This would be a requirement to the MPMC Client (CCP), which is outside the scope of the standard. In general, we should not limit device capabilities, because an operator may make a mistake. Sometimes it may be necessary to disable all channels and brick the ONU in order to preserve the rest of EPON. NMS user interface usually have sufficient guards in place to prevent accidental msiconfiguration.

Cl 144 SC 144.4.2.1 P230 L13 # 319  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status D  
 It says in 144.1.4.1 that the definition and behavior of the MPMC Client is outside the scope of this standard. There is quite a bit of text in 144.4.2.1, 144.4.2.2, 144.4.2.3, and 144.4.2.4 that seems to describe the behavior of the MPMC Client. Specifically, there is text that says when the OLT starts and stops granting the ONU. A lot of the text in these subclauses is duplicated and not necessary.  
 SuggestedRemedy  
 Remove all text in 144.4.2.1 starting with page 230 line 13. Remove all text in 144.4.2.2 starting with page 230 line 32. Remove all text in 144.4.2.3 starting with page 231 line 1. Remove all text in 144.4.2.4 starting with page 231 line 22.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This text is intended to be informative only. There are no requirements made.

Proposed Responses

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Cl 144 SC 144.4.2.1 P230 L19 # 318  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status D  
 ccp\_timer and CCP\_RETRY\_LIMIT not defined.  
 SuggestedRemedy  
 Remove steps i and ii in four places: 144.4.2.1, 144.4.2.2, 144.4.2.3, and 144.4.2.4.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.4.2.5 P231 L38 # 250  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type E Comment Status D bucket  
 Grammar typo  
 SuggestedRemedy  
 change:  
 "allowing the ONU notify the OLT" to  
 "allowing the ONU to notify the OLT"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 144 SC 144.4.2.5 P231 L41 # 320  
 Lynskey, Eric Broadcom  
 Comment Type T Comment Status D  
 Behavior of MPMC Client.  
 SuggestedRemedy  
 Remove all text in 144.4.2.5 beginning with line 41. Replace with: To notify the MPMC Client at the OLT about a local channel state change, the MPMC Client at the ONU may send an unsolicited CC\_RESPONSE CCPDU to the OLT, indicating the new state of all of its downstream and upstream channels.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This text is intended to be informative only. There are no requirements made.

Cl 144 SC 144.4.3 P232 L7 # 49  
 Hajduczenia, Marek Charter Communications  
 Comment Type ER Comment Status D can-vs-may  
 "can" used and not intended per Style Guide  
 SuggestedRemedy  
 Change "For CCPDUs originating at the OLT, this can be the" to "For CCPDUs originating at the OLT, this may be the"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 Page was wrong (233) and fixed (232)

Cl 144 SC 144.4.3 P232 L16 # 251  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type T Comment Status D  
 Figure 144-30 does not include an "OperandList" as indicated by this text.  
 SuggestedRemedy  
 In Figure 144-30 change "Data/Reserved" to "OperandList/Reserved"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add additional field "OperandList"  
 Rename "Data/Reserved/Pad" into "Pad" (as it is done in Figure 144-11)

Cl 144 SC 144.4.3.1 P233 L9 # 252  
 Remein, Duane Futurewei Technologies, Inc.  
 Comment Type TR Comment Status D  
 Opcode in Figures 144-31 & 32 do not agree with the text.  
 SuggestedRemedy  
 Align figures and text; CC\_REQUEST should use Opcode 20 and CC\_RESPONSE Opcode 21 (text is correct).  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Opcodes are correct. The figures are wrong. 144-31 shows CC\_RESPONSE instead of CC\_REQUEST and 144-32 shows the opposite. Use correct figures.

## Proposed Responses

## IEEE P802.3ca D2.0 25/50G-EPON Task Force Initial Working Group ballot comments

Cl 144 SC 144.4.3.1 P233 L21 # 321

Lynskey, Eric Broadcom

Comment Type T Comment Status D

If the intent is to reserve space for support of up to 16 channels in the future, the space in the frame should be reserved for both downstream and upstream status.

## SuggestedRemedy

In Figure 144-31, add 14 octets of Reserved following StatusUC1. Adjust the pad.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 144 SC 144.4.3.1 P234 L14 # 253

Remein, Duane Futurewei Technologies, Inc.

Comment Type TR Comment Status D

What prevents the "previous persistent state" for one channel combined with "previous persistent state" for another change from creating an ONU with all channels disabled and thereby appear to be broken?

## SuggestedRemedy

Add footnote to PersistenceFlag = 1

1 The ONU shall refuse any instruction that would result in persistently disabling all channels in a given direction.

Proposed Response Response Status W

PROPOSED REJECT.

ONU shall never refuse a command from the OLT (NMS), no matter what the consequences to the ONU are. Any limitations, if needed, should be placed on the NMS, not on the ONU.

Cl 144 SC 144.4.3.2 P234 L42 # 322

Lynskey, Eric Broadcom

Comment Type T Comment Status D

If the intent is to reserve space for support of up to 16 channels in the future, the space in the frame should be reserved for both downstream and upstream actions.

## SuggestedRemedy

In Figure 144-32, add 14 octets of Reserved following ActionUC1. Adjust the pad.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 144 SC 144.4.4.1 P236 L11 # 15

Hajduczenia, Marek Charter Communications

Comment Type ER Comment Status D

Wrong table reference in CH\_STATE\_ABSENT, CH\_STATE\_DISABLED\_REMOTE, CH\_STATE\_ENABLED.

## SuggestedRemedy

Change Table 144-11. to Table 144-12.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 144 SC 144.4.4.4 P238 L23 # 50

Hajduczenia, Marek Charter Communications

Comment Type ER Comment Status D can-vs-may

"can" used and not intended per Style Guide

## SuggestedRemedy

Change "(array element) can be accessed" to "(array element) is accessed"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 144 SC 144.5.4.4 P242 L53 # 354

Laubach, Mark Broadcom

Comment Type E Comment Status D bucket

Tables in the PICS need bottom ruling enabled.

## SuggestedRemedy

Make it so.

Proposed Response Response Status W

PROPOSED ACCEPT.

Proposed Responses

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Cl 149 SC 149.1.3 P71 L27 # 476  
 Brandt, David Rockwell Automation  
 Comment Type E Comment Status D wrong-ballot  
 PCS layer label is inconsistent with Figure 44-1 and Figure 125-1.  
 SuggestedRemedy  
 Change: "RS-FEC PCS"  
 To: "64B/65B RS-FEC PCS"  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 149 SC 149.3.2.2.4 P89 L24 # 468  
 Brandt, David Rockwell Automation  
 Comment Type E Comment Status D wrong-ballot  
 Figure 149-6 lacks arrow ends on TXD<32> and TXD<63>.  
 SuggestedRemedy  
 Add arrow ends on TXD<32> and TXD<63>.  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

I do not think this draft includes clause 149. Wrong project?

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Cl 149 SC 149.1.3.1 P72 L38 # 479  
 Brandt, David Rockwell Automation  
 Comment Type E Comment Status D wrong-ballot  
 Missing dashes.  
 SuggestedRemedy  
 Change: "3260 bit block"  
 To: "3260-bit block", in 2 locations  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

Cl 149 SC 149.3.9 P120 L20 # 477  
 Brandt, David Rockwell Automation  
 Comment Type E Comment Status D wrong-ballot  
 Missing space  
 SuggestedRemedy  
 Change: "OAM10-bit"  
 To: "OAM 10-bit"  
 Proposed Response Response Status Z  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

I do not think this draft includes clause 149. Wrong project?

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Proposed Responses

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Cl 149 SC 149.3.9.3 P128 L1 # 478

Brandt, David Rockwell Automation  
 Comment Type E Comment Status D wrong-ballot

Should this refer to the "State Variables to OAM Register Mapping" that were edited in Clause 97 to be BASE-T1? Why do they need to appear twice?

SuggestedRemedy

Refer to the modified Clause 97 Table 97-6 for the BASE-T1 mappings and then define the additional mappings for MultiGBASE-T1.

Proposed Response Response Status Z

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

I do not think this draft includes clause 149. Wrong project?

Cl 149 SC 149.5.3.1 P160 L11 # 469

Brandt, David Rockwell Automation  
 Comment Type T Comment Status D wrong-ballot

I don't see where the frame error ratio comes from. If I assume this is actual MAC data with addresses and FCS, I get FER =  $1e-12 * (800 + 22) * 8 = 6.6e-9$ . I note that 149.5.3.2 does not add any MAC frame overhead.

SuggestedRemedy

Please check the math or describe better.

Proposed Response Response Status Z

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

I do not think this draft includes clause 149. Wrong project?

Cl 149 SC 149.5.3.2 P160 L20 # 470

Brandt, David Rockwell Automation  
 Comment Type T Comment Status D wrong-ballot

149.5.3.1 seem inconsistent. 149.5.3.1 has "frame error ratio", but wouldn't these frames crossing XGMII also be counted as 149.5.3.2 "frame loss ratio" when they get to the MAC? There should be no further correction after RS-FEC. Both use the same link segment specified in 149.7.

SuggestedRemedy

Consider whether the same terminology, packet sizes and measurement points can be used.

Proposed Response Response Status Z

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

I do not think this draft includes clause 149. Wrong project?

Cl 149 SC 149.9.2.2 P169 L41 # 471

Brandt, David Rockwell Automation  
 Comment Type T Comment Status D wrong-ballot

This paragraph has 2 shalls that apply to entire products. The seems out of our scope.

SuggestedRemedy

Suggest the "shalls" be replaced with text in the spirit of the last sentence of the paragraph.  
 Change 1st: "shall", To: "is expected be able to"  
 Change 2nd: "shall be tested", To: "is expected to allow products to be tested"  
 Delete: ES4 and ES5.

Proposed Response Response Status Z

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

I do not think this draft includes clause 149. Wrong project?

