---

*Cl* **1**          *SC* **1.4**                    *P* **20**          *L* **17**                    # 550

Hajduczenia, Marek                    Charter Communicatio

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

Clarify editorial instruction

*SuggestedRemedy*

Change "Change definition 1.4.278" to read "Change definition 1.4.278 as shown below"

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

ACCEPT.

---

*Cl* **1**          *SC* **1.4.129a**                    *P* **21**          *L* **7**                    # 520

Wey, Jun Shan                    ZTE TX

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

From this definition, it is clear that N is either 1 or 2. However, in various places in the draft, examples of N=4 is implied. The document should be made consistent regarding the number of channels.

*SuggestedRemedy*

Add the follwing clarification in this definition, or elsewhere as appropriate:
"Values of N equal to 1 and 2 are normative in this standard. Other values of N are sometimes shown as examples for illustration purpose only."

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

REJECT.

Comment type changed from E to T

Nx25G-EPON is just a collective name, nothing more, implying multiple 25G lanes. No changes needed.

---

*Cl* **1**          *SC* **1.4.244a**                    *P* **21**          *L* **11**                    # 417

Remein, Duane                    Huawei

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

This definition misses the fact that an envelope is channel specific.

*SuggestedRemedy*

Change from:
"In Multi-Channel Reconciliation Sublayer (MCRS, see Clause 143), an envelope encapsulates data belonging to a specific LLID, i.e., the data or idles sourced from a specific MAC instance." to:
"In Multi-Channel Reconciliation Sublayer (MCRS, see Clause 143), an envelope encapsulates data belonging to a specific LLID being transmitted on a specific MCRS channel, i.e., the data or idles sourced from a specific MAC instance and sent over a specific MCRS channel."

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

ACCEPT.

---

*Cl* **1**          *SC* **1.4.244b**                    *P* **21**          *L* **16**                    # 552

Hajduczenia, Marek                    Charter Communicatio

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

There are only two added definitions that do not start with a complete sentence.

*SuggestedRemedy*

Change "a transmission window allocated to a single LLID (including GLID)" to "In Clause 143, an envelope allocation represents a transmission window allocated to a single LLID (including GLID)"

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

ACCEPT.

---

*Cl* **1**          *SC* **1.4.313**                    *P* **20**          *L* **31**                    # 551

Hajduczenia, Marek                    Charter Communicatio

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

Clarification on what "it" means in the context

*SuggestedRemedy*

Change "it is also a collective term" to "an LLI is also a collective term"

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

ACCEPT IN PRINCIPLE.

Change marked in ">><<"

Change "it is also a collective term" to "an LLI>>D<< is also a collective term"

---

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl* **1**          Page 1 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn          *SC* **1.4.313**          9/13/2018 5:42:27 PM
SORT ORDER: Clause, Subclause, page, line

| | | | | |
|---|---|---|---|---|
| *Cl* **1** | *SC* **1.4.333a** | *P* **21** | *L* **26** | # 553 |

Hajduczenia, Marek                     Charter Communicatio

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

MPRS is no more - need to align the terminology

*SuggestedRemedy*

Change "multi-point RS" to "Multi-Channel RS (MCRS)"

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

ACCEPT.

---

| | | | | |
|---|---|---|---|---|
| *Cl* **1** | *SC* **1.4.333a** | *P* **21** | *L* **26** | # 554 |

Hajduczenia, Marek                     Charter Communicatio

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

There are only two added definitions that do not start with a complete sentence.

*SuggestedRemedy*

Change "one of a number of defined paths" to "In Clause 143, an MCRS channel represents one of a number of defined paths"
Strike "(see Clause 143)" at the end of the definition

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

ACCEPT.

---

| | | | | |
|---|---|---|---|---|
| *Cl* **31A** | *SC* **31A** | *P* **22** | *L* **8** | # 418 |

Remein, Duane                     Huawei

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

In multiple places the term "modify" is used in editors instructions.  No doubt someone in the WG will point out that the term "change" is preferred per the WG Template.

*SuggestedRemedy*

Change all instances of "modify" to "change" in editing instructions now.

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

ACCEPT.

---

| | | | | |
|---|---|---|---|---|
| *Cl* **56** | *SC* **56.1** | *P* **25** | *L* **13** | # 518 |

Powell, Bill                     Nokia

*Comment Type* **TR**      *Comment Status* **A**                     *Figure 56-5a*

The current Figure reference for Nx25G EPON is Figure 56-5 (end of first paragraph of Clause 56.1  and figure labeled 56-5a on the next page).  However, Figure 56-5 is used for the EPoC architecture.

*SuggestedRemedy*

Change the figure reference in this paragraph and the current Nx25G EPON figure on the next page to Figure number 56-6.

OR, if use of Fig. 56-5a is intentional for Nx25G EPON, at least change the reference to the Nx25G EPON figure (currently Fig. 56-5 in CL 56.1) to also reference Fig. 56-5a.

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

ACCEPT IN PRINCIPLE.

See comment #521

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| | | | | |
|---|---|---|---|---|
| *Cl* **56** | *SC* **56.1** | *P* **25** | *L* **13** | # 521 |

Wey, Jun Shan                     ZTE TX

*Comment Type* **ER**      *Comment Status* **A**                     *Figure 56-5a*

"…Figure 56-5 for Nx25G-EPON topologies." should be Figure 56-5a.

*SuggestedRemedy*

"…Figure 56-5a for Nx25G-EPON topologies."

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

ACCEPT.

---

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

*Cl* **56**
*SC* **56.1**

Page 2 of 40
9/13/2018  5:42:27 PM

| *Cl* **56** | *SC* **56.1.2.1** | *P* **27** | *L* **6** | # 519 |
|---|---|---|---|---|

Powell, Bill                                        Nokia

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

This clause is called "Multipoint MAC Control Protocol (MPCP)."  However we have now added Nx25G EPON to this clause, which refers to MPMC in Fig. 5a and several places in CL 144, which still define MPMC as "Multipoint MAC Control."

*SuggestedRemedy*

Possible solutions:
(1) Change the title of CL56.1.2.1 to "Multipoint MAC Control (MPCP & MPMC)
   OR
(2)  Create a new subclause 56.1.2.1a (insert between current 56.1.2.1 & 56.1.2.2) to describe Nx25G EPON's use of MPMC.  Also move the Nx25G EPON text in both paragraphs of 56.1.2.1 to the new clause.

After group discussion, if the TF doesn't have a strong opinion toward the second option, I recommend the frist option above.

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

REJECT.

Multipoint MAC Control (MPMC) is a sublayer, that exists in all EPONs. MPCP is one of the protocols that resides in that sublayer. In .3ca MPMC, in addition to MPCP, we also have another protocol, called CCP. See bullet 3 in comment #549. The clause 56.1.2.1 just talks about the MPCP, and MPCP exists in all EPONs. It would be wrong to bring MPMC here.

| *Cl* **56** | *SC* **56.1.3** | *P* **27** | *L* **36** | # 545 |
|---|---|---|---|---|

Kramer, Glen                                      Broadcom

*Comment Type*  **T**         *Comment Status*  **A**                    *PMD-names*

Per accepted PMD naming convention (see slide 17, kramer_3ca_4a_0518.pdf), the upstream PMD rate is only shown for the asymetric PMDs.

*SuggestedRemedy*

Replace all occurences of 25G/25GBASE-PQ… and 50G/10GBASE-PQ... with 25GBASE-PQ… and 50GBASE-PQ

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

ACCEPT IN PRINCIPLE.

See motion #4 from September 2018 meeting for changes to PMD names. Apply fixes globally

| *Cl* **56** | *SC* **56.1.3** | *P* **28** | *L* **1** | # 419 |
|---|---|---|---|---|

Remein, Duane                                      Huawei

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

Previous entries in this table list OLT first and then ONU.  We should be consistent with that ordering.

*SuggestedRemedy*

List OLT then ONU, keep rate order as is (i.e., 25/10G..D, 25/10G..U, 25/25G..D, 25/25G..U, 50/10..D, 50/10G..U, … )

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

ACCEPT.

| *Cl* **56** | *SC* **56.1.3** | *P* **29** | *L* **26** | # 420 |
|---|---|---|---|---|

Remein, Duane                                      Huawei

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

This para is incorrect (we don't use 25GBASE_R signaling at all).

*SuggestedRemedy*

Change from:
"Additionally, EFM introduces a family of Physical Layer signaling systems which are derived from 25GBASE–R, but which include RS, PCS and PMA sublayers adapted for Nx25G-EPON, along with a mandatory FEC capability, as defined in Clause 142. All of these systems employ the PMD defined in Clause 141. The family of P2MP Physical Layer signaling systems utilizes exclusively 25GBASE-R signaling for the downstream and upstream directions, supporting the following series of PMD combinations:" to
"Additionally, EFM introduces a family of P2MP Physical Layer signaling systems derived from 25GBASE–R, referred to as 25GBASE-PQ, which include an RS (Clause 143), PCS and PMA sublayers with a mandatory FEC capability (Clause 142) adapted for Nx25G-EPON. The family of P2MP systems utilizes 25GBASE-PQ signaling for the downstream and upstream directions. All 25GBASE-PQ systems employ the PMDs defined in Clause 141 and support the following series of PMD combinations:

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

ACCEPT IN PRINCIPLE.

See comment #555

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

*Cl* **56**
*SC* **56.1.3**

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9/13/2018 5:42:27 PM

*Cl* **56**        *SC* **56.1.3**                    *P* **29**          *L* **27**              #  555

Hajduczenia, Marek                          Charter Communicatio

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

Avoid listing PMDs over and over again in multiple locations in the standard.

*SuggestedRemedy*

Change "The family of P2MP Physical Layer signaling systems utilizes exclusively
25GBASE-R
signaling for the downstream and upstream directions, supporting the following series of
PMD
combinations:
a) <TBD, list of PMDs to be filled in, once we know what combinations are supported when
PMD
tables get filled in>."

to read

"The family of P2MP Physical Layer signaling systems utilizes exclusively 25GBASE-R
signaling for the downstream and upstream directions, supporting a series of PMD
combinations as defined in Table 141-6." Make sure the link is live

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

ACCEPT IN PRINCIPLE.

Strike "The family of P2MP Physical Layer signaling systems utilizes exclusively 25GBASE-
R signaling for the downstream and upstream directions, supporting the following series of
PMD combinations: a) <TBD, list of PMDs to be filled in, once we know what combinations
are supported when PMD tables get filled in>. All Nx25G-EPON PMDs are defined in
Clause 141."

---

*Cl* **56**        *SC* **56.1.3**                    *P* **29**          *L* **33**              #  421

Remein, Duane                              Huawei

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

This was just stated in the previous sentences.

*SuggestedRemedy*

Strike: "All Nx25G-EPON PMDs are defined in Clause 141."

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

ACCEPT IN PRINCIPLE.

See comment #555.

---

*Cl* **141**        *SC* **141**                    *P* **34**          *L* **1**              #  556

Hajduczenia, Marek                          Charter Communicatio

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

Do not break EPON name across lines

*SuggestedRemedy*

Insert forced line break before Nx25G-EPON

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

ACCEPT.

---

*Cl* **141**        *SC* **141.1**                    *P* **34**          *L* **8**              #  557

Hajduczenia, Marek                          Charter Communicatio

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

Aggregate line rate - what is this new animal?

*SuggestedRemedy*

There are 4 instances in the whole draft, all in intro text in Clause 141. It is likely that MAC
rate is implied (since it is in bps and not Bd) and also implied aggregate throughput.
Change all instances of "an aggregate line rate" with "a MAC rate"
Change "All Nx25G-EPON PMDs operating in the downstream direction at 50 Gb/s are
collectively referred to as 50G-EPON PMDs while those operating at a maximum rate of 25
Gb/s in the downstream direction are referred to as 25G-EPON PMDs." to "All Nx25G-
EPON PMDs operating in the downstream direction at the MAC rate of 50 Gb/s are
collectively referred to as 50G-EPON PMDs while Nx25G-EPON PMDs operating in the
downstream direction at the MAC rate of 25 Gb/s are referred to as 25G-EPON PMDs." to
align terminology and the text flow better

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

ACCEPT IN PRINCIPLE.

Change all instances of "an aggregate line rate" with "a MAC data rate"

Change "All Nx25G-EPON PMDs operating in the downstream direction at 50 Gb/s are
collectively referred to as 50G-EPON PMDs while those operating at a maximum rate of 25
Gb/s in the downstream direction are referred to as 25G-EPON PMDs."
to
"All Nx25G-EPON PMDs supporting the downstream MAC data rate of 50 Gb/s are
collectively referred to as 50G-EPON PMDs while Nx25G-EPON PMDs supporting the
downstream MAC data rate of 25 Gb/s are collectively referred to as 25G-EPON PMDs."

---

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general                    *Cl* **141**            Page 4 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn            *SC* **141.1**          9/13/2018 5:42:27 PM
SORT ORDER: Clause, Subclause, page, line

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*Cl* **141**      *SC* **141.1.3**                  *P* **34**           *L* **26**           # 422

Remein, Duane                                    Huawei

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

We seem to have two sections on power budgets 141.1.3 "Power budget classes", here
and another at 141.2.5."PMD power classes" that both say essentially the same thing.

*SuggestedRemedy*

Strike 141.1.3

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

ACCEPT IN PRINCIPLE.

Strike 141.1.3 per comment.
In 141.2.5, use formatting similar to current 141.1.3, i.e., have a bulleted list.

---

*Cl* **141**      *SC* **141.1.4**                  *P* **34**           *L* **36**           # 424

Remein, Duane                                    Huawei

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

We have a good mix of "PHY Link Types",  "PHY Link types", "PHY link types" and "PQ
PHY link types".  Consistency would be better.

*SuggestedRemedy*

Use "PHY link type" consistently.

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

ACCEPT IN PRINCIPLE.

Since "PHY Link Type" is really intended as a compound designator for a thing (a link,
comprising two PHYs), the Editor's preference is to go with "PHY Link Type". Align
capitalization accordingly.

Do not remove "PQ" in two instances. They are correct as they are.

---

*Cl* **141**      *SC* **141.1.4**                  *P* **34**           *L* **36**           # 423

Remein, Duane                                    Huawei

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

This clause has no text.  It also seems to be misplaced and should be part of 141.2 PMD
Nomenclature.

*SuggestedRemedy*

Move under section 141.2 as 141.2.2 (see Ed comment on pg 37 line 141.2 line 15) and
add the following:
The Nx25G-EPON PHYs are supported by the Link Types specified in Table 141-1 through
141-5.

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

ACCEPT IN PRINCIPLE.

No changes in the table / subclause location.

Use the following text in 141.1.4: "Characteristics of Nx25G-EPON PHY Link Types are
summarized in Table 141-1 through Table 141-5. The indicated characteristics of PHY Link
Types are results of a specific pairing of an OLT PMD and an ONU PMD. The supported
PMD pairs are specified in Table 141-7 and Table 141-8."

Make sure links are live.

---

*Cl* **141**      *SC* **141.1.4**                  *P* **34**           *L* **37**           # 558

Hajduczenia, Marek                               Charter Communicatio

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

Missing text

*SuggestedRemedy*

Add the following text into 141.1.4 (and make sure sure all links are live): "Table 141-1
through Table 141-5 show all the PHY link types supported by Nx25G-EPON architecture."

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

ACCEPT IN PRINCIPLE.

See comment #423

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

*Cl* **141**
*SC* **141.1.4**

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9/13/2018 5:42:27 PM

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*Cl* **141**        *SC* **141.2**                     *P* **37**        *L* **15**        # 425
Remein, Duane                          Huawei

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

This section seems to go from detailed information to generalized information.  It seems better to introduce the topic of nomenclature first before going into details.

*SuggestedRemedy*

Under 141.2 add the following text:
Nx25G-EPON PMDs are classified based on PHY link type (see 141.2.1) which is specified by rate (both upstream and downstream), wavelength, channel insertion loss and coexistence technology.  PMD names are determined by PHY link type, direction, signaling scheme, protocol, line code  and optical power budget as summarized in 141.2.2.
{note the ref to 141.2.2 assumes that 141.1.6 is moved to 141.2.2}
Move section 141.1.4 "PHY Link Types" and Tables 141-1 thru 141-5 to 141.2.1.
Move section 141.2.6 "PMD naming" to 141.2.2 and renumber the remaining sections.

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

ACCEPT IN PRINCIPLE.

Insert a new subclause 141.2.1 with the following text (this avoids hanging paragraph

141.2.1 Introduction
Nx25G-EPON PMDs are classified based on transmit and receive rate, coexistence type, transmission direction, and power level.

Remove 141.2.2 and its content

Change "141.2.4 PMD direction classes" to "141.2.4 PMD transmission direction classes"

---

*Cl* **141**        *SC* **141.2.2**                   *P* **37**        *L* **28**        # 559
Hajduczenia, Marek                     Charter Communicatio

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

Always avoid the use of "always" unless describing unavoidable situations

*SuggestedRemedy*

Strike all instances of "always" in 141.2.2

*Response*                *Response Status*   **C**
ACCEPT.

---

*Cl* **141**        *SC* **141.2.3**                   *P* **37**        *L* **36**        # 560
Hajduczenia, Marek                     Charter Communicatio

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

Unclear what the purpose of the qualitifier is "previously existing"

*SuggestedRemedy*

Strike "previously existing" - there are many more previously existing technologies

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

ACCEPT IN PRINCIPLE.

Change

Nx25G-EPON PMDs defined in this clause support WDM coexistence with one of two previously existing PON technologies; 10G-EPON or GPON.

 to

Nx25G-EPON PMDs defined in this clause support WDM coexistence with 10G-EPON or GPON.

---

*Cl* **141**        *SC* **141.2.5**                   *P* **37**        *L* **48**        # 561
Hajduczenia, Marek                     Charter Communicatio

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

Repetition of text from 141.1.3

*SuggestedRemedy*

Change "Nx25G-EPON PMDs defined in this clause are defined as one of two power classes; a medium or a high
power budget class" to "Nx25G-EPON PMDs defined in this clause are defined as one of two power classes; a medium or a high
power budget class, defined in 141.1.3." - make link live. Strike "A medium PMD power class supports a P2MP media channel insertion loss of ≤ 24 dB
e.g., a PON with the split ratio of at least 1:16 and the distance of at least 20 km or a PON with the split ratio
of at least 1:32 and the distance of at least 10 km. A high PMD power class supports a P2MP media channel
insertion loss of ≤ 29 dB e.g., a PON with the split ratio of at least 1:32 and the distance of at least 20 km."

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

ACCEPT IN PRINCIPLE.

See comment #422

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TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl* **141**          Page 6 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn          *SC* **141.2.5**          9/13/2018  5:42:27 PM
SORT ORDER: Clause, Subclause, page, line

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| *Cl* **141** | *SC* **141.2.5** | *P* **37** | *L* **52** | # 522 |
|---|---|---|---|---|

Wey, Jun Shan      ZTE TX

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

Typo "din"

*SuggestedRemedy*

"in"

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

ACCEPT.

---

| *Cl* **141** | *SC* **141.2.5** | *P* **37** | *L* **52** | # 426 |
|---|---|---|---|---|

Remein, Duane      Huawei

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

typo "indicate din" should be "indicated in"

*SuggestedRemedy*

per comment

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

ACCEPT.

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| *Cl* **141** | *SC* **141.2.6** | *P* **38** | *L* **6** | # 563 |
|---|---|---|---|---|

Hajduczenia, Marek      Charter Communicatio

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

Descriptions would be more legible if placed into a structured table

*SuggestedRemedy*

Replace content of 141.2.6 with hajduczenia_3ca_1_0918.pdf

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

ACCEPT IN PRINCIPLE.

Use hajduczenia_3ca_1a_0918.pdf with the following changes
- remove lines for w1 and w2
- remove w1 and w2 from PMD name definition
- change "Values" to "Allowed values"
- remove G, P, Q, BASE value entries from "Values" column

---

| *Cl* **141** | *SC* **141.2.6** | *P* **38** | *L* **11** | # 562 |
|---|---|---|---|---|

Hajduczenia, Marek      Charter Communicatio

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

"If r1 is equal to r2 (i.e., symmetric PMDs) r2 is omitted" is not true anymore based on discussion at the last meeting

*SuggestedRemedy*

Strike the line

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

ACCEPT IN PRINCIPLE.

See comment #563

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| *Cl* **141** | *SC* **141.2.6** | *P* **38** | *L* **27** | # 427 |
|---|---|---|---|---|

Remein, Duane      Huawei

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

Change "coexist" to "coexistence"

*SuggestedRemedy*

per comment

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

ACCEPT IN PRINCIPLE.

See comment #563

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| *Cl* **141** | *SC* **141.2.7** | *P* **38** | *L* **45** | # 564 |
|---|---|---|---|---|

Hajduczenia, Marek      Charter Communicatio

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

There is very little in the way of description in this subclause: "This subclause describes how"

*SuggestedRemedy*

Change to "Table 141-6 shows how"

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

ACCEPT IN PRINCIPLE.

Add the following text page 38, end of line 46:

"Table 141-6 shows the list of all supported PMD types."

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

*Cl* **141**
*SC* **141.2.7**

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9/13/2018 5:42:28 PM

*Cl* **141**      *SC* **141.2.7**            *P* **39**        *L* **2**          # 428
Remein, Duane                              Huawei

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

There is no reference to Table 141–6.  It is unclear to me what this table adds that is not included in other tables.

*SuggestedRemedy*

Either remove the table to add introductory text and reference.

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

ACCEPT IN PRINCIPLE.

See comment #564

---

*Cl* **141**      *SC* **141.2.7**            *P* **39**        *L* **43**         # 430
Remein, Duane                              Huawei

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

We've used the term "power budget" quite a bit up to this point.  In this context the term is more encompassing that in previous uses.

*SuggestedRemedy*

Change:
"The power budget is determined" to:
"The end-to-end power budget is determined"

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

ACCEPT IN PRINCIPLE.

In 141.2.7, change "The power budget" to "The PHY link power budget"

---

*Cl* **141**      *SC* **141.2.7.1**          *P* **39**        *L* **31**         # 565
Hajduczenia, Marek                         Charter Communicatio

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

"symmetric-rate ONU PMDs with symmetric-rate OLT PMDs" - there are now both symmetric and asymmetric PMDs shown

*SuggestedRemedy*

Change to "ONU PMDs with OLT PMDs", same change on page 40, line 3

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

ACCEPT IN PRINCIPLE.

See comment #429

---

*Cl* **141**      *SC* **141.2.7.1**          *P* **39**        *L* **31**         # 429
Remein, Duane                              Huawei

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

This description of table 141-7 appears to be incorrect as the table includes asymmetric and symmetric PMDs.

*SuggestedRemedy*

Change:
"Table 141–7 illustrates recommended pairings of symmetric-rate ONU PMDs with symmetric-rate OLT PMDs to achieve the power budgets as shown in Table 141–1 through Table 141–5." to
"Table 141–7 illustrates recommended pairings of OLT PMDs with ONU PMDs to achieve the medium power budgets as shown in Table 141–1 through Table 141–5."

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

ACCEPT.

---

*Cl* **141**      *SC* **141.2.7.2**          *P* **40**        *L* **3**          # 431
Remein, Duane                              Huawei

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

This description of table 141-8 appears to be incorrect as the table includes asymmetric and symmetric PMDs.

*SuggestedRemedy*

Change:
"Table 141–8 illustrates recommended pairings of asymmetric-rate ONU PMDs with asymmetric-rate OLT PMDs to achieve the power budgets as shown in Table 141–1 through Table 141–5." to
"Table 141–8 illustrates recommended pairings of OLT PMDs with ONU PMDs to achieve the power budgets as shown in Table 141–1 through Table 141–5."

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

ACCEPT IN PRINCIPLE.

Change:
"Table 141–8 illustrates recommended pairings of asymmetric-rate ONU PMDs with asymmetric-rate OLT PMDs to achieve the power budgets as shown in Table 141–1 through Table 141–5." to
"Table 141–8 illustrates recommended pairings of OLT PMDs with ONU PMDs to achieve the high power budgets as shown in Table 141–1 through Table 141–5."

---

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

*Cl* **141**          Page 8 of 40
*SC* **141.2.7.2**    9/13/2018  5:42:28 PM

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*Cl* **141**      *SC* **141.3**              *P* **40**        *L* **30**        # 432

Remein, Duane                              Huawei

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

We have a good mix of "PQ-type PMD", "PQ type PMD", and "PQ compliant". Consistency would be better.

*SuggestedRemedy*

For "PQ-type PMD" and "PQ type PMD" use "Nx25G-EPON PMD"
For "A PQ compliant" use "An Nx25G-EPON compliant"

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

ACCEPT IN PRINCIPLE.

Replace "PQ-type PMD" with "PQ type PMD"

---

*Cl* **141**      *SC* **141.3.1**              *P* **40**        *L* **38**        # 433

Remein, Duane                              Huawei

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

The following statement is incorrect "representing 256B/257B blocks,". The stream of bits is not composed solely of 256B/257B blocks but includes Parity, IBI, SP, and EOB delimiter all of which are not 256B/257B encoded.

*SuggestedRemedy*

Strike the statement.

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

ACCEPT.

---

*Cl* **141**      *SC* **141.3.1.1**            *P* **40**        *L* **51**        # 434

Remein, Duane                              Huawei

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

Delay constraints. In previous generations of EPON delay was constrained over the entire RS-PMA chain (see below). We now have separate sections for RS and PCS/PMA and need to distribute the total allowed delay variation with some going to RS and the rest to the PCS/PMA.
"76.1.2 Delay constraints
The MPCP relies on strict timing based on the distribution of timestamps. The actual delay is implementation dependent but an implementation shall maintain a combined delay variation through RS, PCS, and PMA sublayers of no more than 1 time_quantum (see 77.2.2.1) so as not to interfere with the MPCP timing."

*SuggestedRemedy*

In 141.3.1.1 and 142.1.2 replace the {TBD} with the following and change section 143.4.3 to read:
"The MPCP relies on strict timing based on the distribution of timestamps. The actual total delay is implementation dependent but an implementation shall maintain a delay variation as summarized in Table 144-TBD. Implementations shall declare the expected total delay for each direction as specified in {cl 45 ref]."

In 144.3.1.2 change:
"The actual delay is implementation dependent; however, a complying implementation shall maintain a delay variation of no more than <TBD EQs> through the MAC." to read:
"The actual delay is implementation dependent; however, a complying implementation shall maintain a delay variation in accordance with Table 144-x."

Table 144-x Delay variation allocation in Nx25G-EPON

| Layer/Sub-layer | Allowed Delay variation (EQT) |
|---|---|
| MCRS | 1 |
| Nx25G-EPON PCS/PMA | 2 |
| Nx25G-EPON PMD | 1 |
| MAC to PHY(1) | 4 |
| PHY(2) | 3 |

Notes:
1) Total delay variation for an Nx25G-EPON implementation covering both MAC and PHY layers.
2) Total delay variation for an Nx25G-EPON implementation including PCS, PMA and PMD.
3) Total expected delay is declared as specified in {Cl 45 PMA/PMD Ref} and {Cl 45 PCS Ref}. Implementations which combine MCRS, PCS, PMA and PMD may use either one or both of these mechanisms.

Editors Note: we will need to determine how to declare MCRS total delay which may affect Table 144-x"

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

REJECT.

---

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

*Cl* **141**         Page 9 of 40
*SC* **141.3.1.1**      9/13/2018  5:42:28 PM

This comment was WITHDRAWN by the commenter.

AI for Glen and Duane to come up with a delay variability requirements' text.

*Cl* **141**          *SC* **141.3.1.2**                    *P* **41**          *L* **2**                    # 435

Remein, Duane                                        Huawei

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

There are 9 instances of "Clause 142 PMA" (2 of which have some hidden character between the "C" and "l").  Most readers will not know what the "Clause 142 PMA" is and thusthe statement is unhelpful to them. The link to the top of clause 142 is also not helpful, as it is 26 pages away from the PMA section of interest.

*SuggestedRemedy*

Change all instances of
"Clause 142 PMA" (including those with hidden characters) to
"Nx25G-EPON PMA (see 142.3)"

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

ACCEPT IN PRINCIPLE.

In Clause 142, replace all instances of "Clause 142 PMA" with "PMA defined in 142.3"

*Cl* **141**          *SC* **141.3.1.2**                    *P* **41**          *L* **8**                    # 436

Remein, Duane                                        Huawei

*Comment Type*     **E**          *Comment Status*  **R**

These two sentences are a bit wordy, not to mention incorrect, and can be improved;

*SuggestedRemedy*

Change:
"The Clause 142 PMA continuously sends the appropriate stream of bits to the PMD for transmission on the medium, at a nominal signaling speed of 25.78125 GBd in the case of Nx25G-EPON OLT and ONU PMDs. The Clause 142 PMA continuously sends the appropriate stream of bits to the PMD for transmission on the medium, at a nominal signaling speed of 10.3125 GBd in the case of 25/10G-EPON and 50/10G–EPON ONU PMDs." to
"The Nx25G PMA (see 142.3) continuously sends the appropriate stream of bits to the PMD for transmission on the medium, at a nominal signaling speed of 25.78125 GBd in the case of Nx25G-EPON OLT and ONU PMDs or at a nominal signaling speed of 10.3125 GBd in the case of 25/10G-EPON and 50/10G–EPON ONU PMDs."

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

REJECT.

Nothing wrong with the original text. Replacing two correct sentences with a single more complex and wordy sentence is hardly an improvement.

*Cl* **141**          *SC* **141.3.1.4**                    *P* **41**          *L* **19**                    # 437

Remein, Duane                                        Huawei

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

The wording of this sentence can be improved.

*SuggestedRemedy*

Change:
"The PMD continuously sends a stream of bits to the Clause 142 PMA corresponding to the signals received from the MDI, at the nominal signaling speed of 25.78125 GBd in the case of Nx25G–EPON OLT and ONU PMDs or to the Clause 142 PMA at the nominal signaling speed of 10.3125 GBd in the case of 25/10G–EPON and 50/10G-EPON OLT PMDs." to
"The PMD continuously sends a stream of bits to theNx25G-EPON PMA (see 142.3) corresponding to the signals received from the MDI, at the nominal signaling speed of 25.78125 GBd in the case of Nx25G–EPON OLT and ONU PMDs or at the nominal signaling speed of 10.3125 GBd in the case of 25/10G–EPON and 50/10G-EPON OLT PMDs."

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

REJECT.

This comment was WITHDRAWN by the commenter.

*Cl* **141**          *SC* **141.3.1.4**                    *P* **41**          *L* **28**                    # 438

Remein, Duane                                        Huawei

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

This phrase "Clause 142 PCS" is unhelpful to most readers, who will not know what the "Clause 142 PCS" is.

*SuggestedRemedy*

Change to" Nx25G-EPON PCS"

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

ACCEPT IN PRINCIPLE.

Change all instances of "Clause 142 PCS"  to "PCS defined in 142.2"

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

*Cl* **141**          Page 10 of 40
*SC* **141.3.1.4**          9/13/2018 5:42:28 PM

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*Cl* **141**    *SC* **141.3.1.5**    *P* **41**    *L* **41**    # 439

Remein, Duane                Huawei

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

the term PMD_UNITDATA[
i].indication(rx_bit) should not break the line.

*SuggestedRemedy*

make the term non-breaking  {Esc n s}.

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

ACCEPT.

---

*Cl* **141**    *SC* **141.3.1.5**    *P* **41**    *L* **46**    # 566

Hajduczenia, Marek            Charter Communicatio

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

Wrong format for NOTE

*SuggestedRemedy*

Apply proper style for NOTE

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

ACCEPT.

---

*Cl* **141**    *SC* **141.3.2**    *P* **42**    *L* **1**    # 567

Hajduczenia, Marek            Charter Communicatio

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

Since now some of the test points are channels specific (as indicated by [i]), we cannot say
"test points TP1[i] through TP4[i]" - that implies all of them are indexed and they are not.

*SuggestedRemedy*

Change "TP1[i] through TP4[i]" to "TP1[i], TP2, TP3, and TP4[i]" globally
Change "TP5[i] through TP8[i]" to "TP5[i], TP6, TP7, and TP8[i]" globally

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

ACCEPT.

---

*Cl* **141**    *SC* **141.3.2**    *P* **42**    *L* **4**    # 440

Remein, Duane                Huawei

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

"defined on per channel basis" missing "a"

*SuggestedRemedy*

change to "defined on a per channel basis"

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

ACCEPT.

---

*Cl* **141**    *SC* **141.3.2**    *P* **42**    *L* **7**    # 568

Hajduczenia, Marek            Charter Communicatio

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

Wrong reference: 141.8 is labelling, safety, etc

*SuggestedRemedy*

Change 141.8 to 141.7 (that is where all tests are defined) - two instances

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

ACCEPT.

---

*Cl* **141**    *SC* **141.3.2**    *P* **42**    *L* **47**    # 441

Remein, Duane                Huawei

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

This figure seems to be lacking quite a bit to be called an "Nx25G-EPON block diagram"

*SuggestedRemedy*

Change title to "Nx25G-EPON PMD test points"

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

ACCEPT.

---

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general    *Cl* **141**    Page 11 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected    RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn    *SC* **141.3.2**    9/13/2018  5:42:28 PM
SORT ORDER: Clause, Subclause, page, line

*Cl* **141**        *SC* **141.3.5.1**                    *P* **43**            *L* **18**                # 442

Remein, Duane                                    Huawei

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

Section 141.3.5.1 uses the statement "The ONU PMD receiver is not required …" whereas section 141.3.5.2 uses the wording "The PQ-type PMD receiver is not required …"  These should be aligned

*SuggestedRemedy*

Change 141.3.5.1 to:
"The ONU Nx25G-EPON PMD receiver is not required ..."
Change 141.3.5.2 to:
"The OLT Nx25G-EPON PMD receiver is not required ..."

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

ACCEPT IN PRINCIPLE.

Given context where we are, adding Nx25G-EPON everywhere does not clarify anything - we are in Nx25G-EPON Clause

Change 141.3.5.2 to:
"The OLT PMD receiver is not required ..."

---

*Cl* **141**        *SC* **141.3.5.3**                    *P* **43**            *L* **31**                # 443

Remein, Duane                                    Huawei

*Comment Type*    **E**            *Comment Status*    **R**

Seems like excessive sub-division; ONU PMD signal detect, OLT PMD signal detect, and Nx25G-EPON Signal detect functions.

*SuggestedRemedy*

Strike the subclause title "141.3.5.3 Nx25G-EPON Signal detect functions" and move the section content under 141.3.5 PMD signal detect function

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

REJECT.

Current subclause structure is correct - we have section for ONU, OLT, and then Signal detect function definitions. Proposed change would create stranded text.

AI for Glen to prepare a contribution to add "[i]" to SIGNAL_DETECT consistently in Clause 141.

---

*Cl* **141**        *SC* **141.3.5.3**                    *P* **43**            *L* **38**                # 569

Hajduczenia, Marek                                Charter Communicatio

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

Table 141-9 contains TBD references

*SuggestedRemedy*

Change
Average input optical power <= Signal Detect Threshold (min) in Table {TBD} at the specified receiver wavelength
to
Average input optical power <= Signal Detect Threshold (min) in Table 141–14 or Table 141–15 at the specified receiver wavelength, as applicable

Change
Average input optical power >= Receive sensitivity (max) in Table {TBD} with a compliant signal input at the specified receiver wavelength
to
Average input optical power >= Receive sensitivity (max) in Table 141–14 or Table 141–15 with a compliant signal input at the specified receiver wavelength, as applicable

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

ACCEPT.

---

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general                *Cl*  **141**        Page 12 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn        *SC*  **141.3.5.3**        9/13/2018  5:42:28 PM
SORT ORDER: Clause, Subclause, page, line

*Cl* **141**      *SC* **141.5.**              *P* **44**          *L* **27**          # 444
Remein, Duane                            Huawei

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

There is no definition of what is considered "The operating range" in this para and at line 49.  Presumable this means reach and split but that is not mentioned anywhere.  Does it also extend to wavelength and line rate?  If so then it is OK per the following statement to operate at any wavelength and rate "A transceiver which exceeds the operational range requirement while meeting all other optical specifications is considered compliant." Note that in Cl 60 the term range was used in Table 60-1 instead of reach in the reference table so there was a minimal connection to phrasing.

*SuggestedRemedy*

Change in both cases:
"The operating ranges … " to: "The maximum reach … "

and change:
"… exceeds the operational range requirement ..." to "… exceeds the operational reach requirement ..."

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

ACCEPT IN PRINCIPLE.

Change all instances of

A transceiver which exceeds the operational range requirement while meeting all other optical specifications is considered compliant.

To

A transceiver which exceeds the maximum reach requirement while meeting all other optical specifications is considered compliant.

Change all instances of

The operating ranges for PQ PHY link types

to

The operating parameters for PQ PHY link types

*Cl* **141**      *SC* **141.5.1**              *P* **44**          *L* **34**          # 570
Hajduczenia, Marek                       Charter Communicatio

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

Tables are not displayed within the associated subclauses

*SuggestedRemedy*

Force Table 141–12 and Table 141–13 to follow 141.5.1 Transmitter optical specifications
Force Table 141–14 and Table 141–15 to follow 141.5.2 Receiver optical specifications
Similar changes needed in 141.6.1 Transmitter optical specifications and 141.6.2 Receiver optical specifications

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

ACCEPT.

*Cl* **141**      *SC* **141.6**              *P* **44**          *L* **46**          # 445
Remein, Duane                            Huawei

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

As near as I can tell there are no specifications in 141.2.

*SuggestedRemedy*

Strike ", as specified in 141.2"

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

ACCEPT.

*Cl* **141**      *SC* **141.6**              *P* **45**          *L* **39**          # 516
Harstead, Ed                             Nokia

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

Table 141-12, footnote (b): "This value is informative only." is ambiguous.  "This" could mean the 2 dB, or it could be the same "this" in the previous sentence-- which refers to normative values in the body of the table.  Same concern in Tables 141-13, -16, and -17.

*SuggestedRemedy*

Reword, for example, "For reference, this implies that the minimum average launch power per channel at minimum extinction ratio and
maximum TDP is 2 dBm (informative)."

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

ACCEPT IN PRINCIPLE.

Comment type was changed to T.

Change "This value is informative only." to "This minimum average launch power value is informative only.". The same change applies to Tables 141-13, Tables 141-16, and Tables 141-17.

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TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl* **141**          Page 13 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn          *SC* **141.6**          9/13/2018 5:42:28 PM
SORT ORDER: Clause, Subclause, page, line

| | | | | |
|---|---|---|---|---|
| *Cl* **141** | *SC* **141.6.2** | *P* **45** | *L* **52** | # 447 |

Remein, Duane                     Huawei

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

Unhelpful link with unhelpful text "Clause 141 ONU PMDs,"

*SuggestedRemedy*

Change to "Nx25G-EPON ONU PMDs,"

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

ACCEPT IN PRINCIPLE.

Change to "ONU PMDs"

| | | | | |
|---|---|---|---|---|
| *Cl* **141** | *SC* **141.6.2** | *P* **45** | *L* **52** | # 446 |

Remein, Duane                     Huawei

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

No PMDs are "(as specified in 141.2)"

*SuggestedRemedy*

Strike the parenthetical.

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

ACCEPT.

| | | | | |
|---|---|---|---|---|
| *Cl* **141** | *SC* **141.6.2** | *P* **45** | *L* **54** | # 524 |

Wey, Jun Shan                     ZTE TX

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

Table 141-10 is for the downstream wavelength, not for ONU PMD.

*SuggestedRemedy*

Change to Tables 141-18 and 141-19

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

ACCEPT.

| | | | | |
|---|---|---|---|---|
| *Cl* **141** | *SC* **141.6.2** | *P* **46** | *L* **44** | # 527 |

Wey, Jun Shan                     ZTE TX

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

Table 141-10 in this and the next paragraphs need to be replaced by the correct reference.

*SuggestedRemedy*

Change to Tables 141-18 and 141-19

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

ACCEPT.

| | | | | |
|---|---|---|---|---|
| *Cl* **141** | *SC* **141.7.13** | *P* **54** | *L* **10** | # 448 |

Remein, Duane                     Huawei

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

Incomplete sentences.

*SuggestedRemedy*

Change (4x in this section)
", value is less than 128 ns …"  to
" and has a value of less than 128 ns …"

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

ACCEPT.

| | | | | |
|---|---|---|---|---|
| *Cl* **141** | *SC* **141.7.13** | *P* **54** | *L* **11** | # 517 |

Harstead, Ed                     Nokia

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

Table 141–16 and 141–17 specify Turn-on time (max) and Turn-off time (max) to be 128 ns.  Which means 128 ns is an acceptable value.  The text in 141.7.13 says they must be "less than 128 ns", which means 128 ns is not an acceptable value.

*SuggestedRemedy*

Reword text to indicate 128 ns maximum.  Or, delete values here since they are already captured in the table.

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

ACCEPT IN PRINCIPLE.

Comment type changed from E to T

Change all instances of "value is less than 128 ns" to "value is less than or equal to 128 ns"

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

*Cl*  **141**
*SC*  **141.7.13**

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*Cl* **141**      *SC* **141.7.13**              *P* **54**        *L* **12**         # 449

Remein, Duane                              Huawei

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

"Treceiver_settling is defined in 141.7.13.2 (informative), value is less than ..." How can a normative parameter be defined in and informative subclause?

*SuggestedRemedy*

Change to read "A technique for measuring Treceiver_settling is illustrated in 141.7.13.2 (informative) and has a value of less than ...

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

ACCEPT IN PRINCIPLE.

Change to read "A method for measuring Treceiver_settling is illustrated in 141.7.13.2 (informative) and has a value of less than …

---

*Cl* **141**      *SC* **141.7.13.1**            *P* **54**        *L* **26**         # 571

Hajduczenia, Marek                        Charter Communicatio

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

Stray T in "as defined in TT able 141–16"

*SuggestedRemedy*

Remove the green "T"

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

ACCEPT.

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*Cl* **141**      *SC* **141.7.13.2**            *P* **54**        *L* **36**         # 572

Hajduczenia, Marek                        Charter Communicatio

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

"The test setup for measuring Ton and Toff is described in Figure 141–4."  -figure does not describe really anything.

*SuggestedRemedy*

Change "described in Figure 141–4" to "shown in Figure 141–4"

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

ACCEPT.

---

*Cl* **141**      *SC* **Table 141-12**          *P* **45**        *L* **23**         # 523

Wey, Jun Shan                             ZTE TX

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

The unit of extinction ratio should be "dB"

*SuggestedRemedy*

"for extinction ratio >= 9 dB
for extinction ratio < 9 dB"

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

ACCEPT.

---

*Cl* **141**      *SC* **Table 141-13**          *P* **46**        *L* **24**         # 525

Wey, Jun Shan                             ZTE TX

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

The unit of extinction ratio should be "dB"

*SuggestedRemedy*

"for extinction ratio >= 9 dB
for extinction ratio < 9 dB"

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

ACCEPT.

---

*Cl* **141**      *SC* **Tables 141-12, 141-13,**  *P* **45**      *L*              # 526

Wey, Jun Shan                             ZTE TX

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

The upperbound TDP values in footnote (a) in Tables 141-12, 141-13, 141-16,and 141-17 are inconsistent. In Table 141-13, the footnote states TDP< 0 dB, while in the other tables, it's TDP< 0.5 dB.

*SuggestedRemedy*

Make the appropriate correction

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

ACCEPT IN PRINCIPLE.

In Table 141-13, change "TDP < 0 dB," to "TDP < 0.5 dB,"

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TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl* **141**          Page 15 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected      RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn          *SC* **Tables 141-12, 141-**     9/13/2018 5:42:28 PM
SORT ORDER: Clause, Subclause, page, line

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*Cl* **142**     *SC* **142.2.2**          *P* **65**     *L* **18**          # 450

Remein, Duane                          Huawei

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

Proposed resolution to Editor's Note

*SuggestedRemedy*

See remein_3ca_1_0918.pdf

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

ACCEPT IN PRINCIPLE.

See remein_3ca_1a_0918.pdf for all tracked changes.

---

*Cl* **142**     *SC* **142.2.2**          *P* **65**     *L* **18**          # 451

Remein, Duane                          Huawei

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

Figure and text on transmit bit ordering missing.

*SuggestedRemedy*

Add the following text at the end of the section (142.2 in remein_3ca_1_0918):
As shown in {Figure 142-5} the PCS transmitter first inputs two transfers from the xMII and
consolidates these into a single 64-bit vector which is encoded into a 64B/66B vector. Four
66-bit vectors are accumulated, scrambled, and transcoded into a 257-bit vector which is
transferred to the INPUT_FIFO and also copied to the FEC encoder. Data is transferred to
the TX_FIFO, along with framing information (see {142.2.5.4.2}) by the PCS Framer
process. The PCS Transmit process transfers all information bits to the PMA. The Nx25G-
EPON PCS shall transmit bits in the order shown in {Figure 142-5}.

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

ACCEPT IN PRINCIPLE.

See comment #450 for reference

Add the following text at the end of the section 142.2:

As shown in Figure 142-5, the PCS transmitter first inputs two transfers from the xMII and
consolidates these into a single 72-bit vector which is then encoded into a 66-bit vector.
Four 66-bit vectors are accumulated, scrambled, and transcoded into a 257-bit vector
which is transferred to the INPUT_FIFO and also copied to the FEC encoder. Data is
transferred to the TX_FIFO, along with framing information (see 142.2.5.4.2) by the PCS
Framer process. The PCS Transmit process transfers 257-bit blocks containing framing,
information, and parity bits to the PMA. The PCS shall transmit bits in the order shown in
Figure 142-5.

---

*Cl* **142**     *SC* **142.2.2.1**          *P* **65**     *L* **26**          # 452

Remein, Duane                          Huawei

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

We are very inconsistent in capitalizing process when referring to a SD. We should pick
one.

*SuggestedRemedy*

use lower case in all instances (that way the editor does not have to pick and choose in
which of the >150 cases to use which case).

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

ACCEPT IN PRINCIPLE.

Make sure all "process" instances capitalized ("Process").

---

*Cl* **142**     *SC* **142.2.2.1.2**          *P* **65**     *L* **51**          # 547

Kramer, Glen                          Broadcom

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

In table 142-1, the value for /IBI/ is the same as the value for /RA/.

*SuggestedRemedy*

1) Change xMII control code and Nx25GBASE-PQ control code for /IBI/ to 0x0A (to match
definition in 142.2.2.5.1)
2) Insert hyphen after "Inter" in Inter Envelope Idle and Inter Burst Idle.

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

ACCEPT.

Addressed in comment #450

---

*Cl* **142**     *SC* **142.2.2.1.2**          *P* **65**     *L* **54**          # 453

Remein, Duane                          Huawei

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

CC /IBI/ should not be the same as /RA/

*SuggestedRemedy*

Change xMII and Nx25GBASE-PQ IBI control codes to 0x0A

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

ACCEPT.

Addressed in comment #450

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

*Cl* **142**          Page 16 of 40
*SC* **142.2.2.1.2**          9/13/2018 5:42:28 PM

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*Cl* **142**    *SC* **142.2.2.2**         *P* **67**         *L* **3**         # 454

Remein, Duane                              Huawei

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

Typo "input" should be capitalized in "Once the complete SBD is appended to the TX_FIFO the input process begins transferring"

*SuggestedRemedy*

per comment

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

ACCEPT.

---

*Cl* **142**    *SC* **142.2.2.2**         *P* **67**         *L* **53**         # 455

Remein, Duane                              Huawei

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

If the number of SP zones and their bit pattern must be announced before an ONU is allowed to transmit and this is determined by the OLT design, I don't see the values in setting a default.  At most this should be optional.

*SuggestedRemedy*

Make the SP1 and SP2 default patterns optional.

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

ACCEPT IN PRINCIPLE.

Use text for subclause 142.1.3.1 per remein_3ca_1a_0918.pdf

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*Cl* **142**    *SC* **142.2.2.4.2**         *P* **70**         *L* **11**         # 596

Laubach, Mark                              Broadcom

*Comment Type*  **TR**       *Comment Status*  **A**                     *post-deadline*

Comment #131 on D1.0 had a portion of it not implemented correctly:
"2) Change the box text "Information Bit
Interleaver" to "Information Bit
De-interleaver"

*SuggestedRemedy*

Please fix the figure accordingly

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

ACCEPT.

---

*Cl* **142**    *SC* **142.2.2.4.2**         *P* **73**         *L* **20**         # 595

Laubach, Mark                              Broadcom

*Comment Type*  **TR**       *Comment Status*  **A**                     *post-deadline*

Need to add text to clarify shortening of upstream bursts relative to transmitted user bits.

*SuggestedRemedy*

Add new paragraph/note:
"Note - when the last codeword of an upstream burst is shortened, the shortening bits are at the end of the Transmitter User Bits effectively expanding the number of Zero Bits (see Figure 142-6)."

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

ACCEPT.

---

*Cl* **142**    *SC* **142.2.2.4.5**         *P* **74**         *L* **8**         # 594

Laubach, Mark                              Broadcom

*Comment Type*  **TR**       *Comment Status*  **A**                     *post-deadline*

Need to remove potential confusion of FEC encoding versus interleaver decoding

*SuggestedRemedy*

Delete "encoding and"

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

ACCEPT IN PRINCIPLE.

Delete "The control bit of
each 257-bit block is not included in encoding and interleaving." on page 74, line 1.

---

*Cl* **142**    *SC* **142.2.2.4.5**         *P* **75**         *L* **34**         # 529

Wey, Jun Shan                              ZTE TX

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

There are 128 switches at each stage, so the value of i should be from 0 to 127.

*SuggestedRemedy*

Change the current text of "i - 0, ..., 7" to "i=0, …, 127"

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

ACCEPT.

---

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

*Cl* **142**
*SC* **142.2.2.4.5**

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9/13/2018  5:42:28 PM

*Cl* **142**    *SC* **142.2.2.5.1**    *P* **79**    *L* **45**    # 456

Remein, Duane          Huawei

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

typo "ofburst"

*SuggestedRemedy*

use "of burst"

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

ACCEPT.

---

*Cl* **142**    *SC* **142.2.2.5.1**    *P* **80**    *L* **22**    # 457

Remein, Duane          Huawei

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

Definitions for PAR_PLACEHLDR

*SuggestedRemedy*

Change Value: to "0x 0-09-09-09-09-09-09-09-09"

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

ACCEPT IN PRINCIPLE.
Change Value: to "0x 0-(09)<sub>32</sub>"

---

*Cl* **142**    *SC* **142.2.2.5.2**    *P* **80**    *L* **37**    # 458

Remein, Duane          Huawei

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

This definition of CLK_IN puts the PCS out of phase by 180 degrees (1/2 EQ) with the MCRS.

*SuggestedRemedy*

Change "each falling edge" to "each rising edge"
In 143.3.3.4  pg 110 line 6 and 143.3.4.3 pg 116 line 24 change "each positive edge" to "each rising edge"
In 143.3.3.4  pg 110 line 24 change "positive and negative" to "rising and falling"

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

ACCEPT.

---

*Cl* **142**    *SC* **142.2.2.5.2**    *P* **80**    *L* **54**    # 459

Remein, Duane          Huawei

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

No such defined term as "SP_COUNT"; "This FIFO holds at most SP_COUNT elements." The assertion is incorrect also.

*SuggestedRemedy*

Change to read: "This FIFO holds either SP_LENGTH or FEC_PARITY_SIZE elements, whichever is greater.

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

ACCEPT.

---

*Cl* **142**    *SC* **142.2.2.5.2**    *P* **81**    *L* **12**    # 460

Remein, Duane          Huawei

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

Constant name should not cross a line

*SuggestedRemedy*

Make "FEC_DELAY" non-breaking  {Esc n s}

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

ACCEPT.

---

*Cl* **142**    *SC* **142.2.2.5.2**    *P* **81**    *L* **28**    # 461

Remein, Duane          Huawei

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

Definition of SP[].  What is meant by "Each element consists of MSB 0 and the 257-bit blocks …"?  It appears that the definition agreed to in Pittsburgh Motion #8 did not get into in the draft.

*SuggestedRemedy*

Use the agreed definition provided in remein_3ca_3_0518.pdf:
The SP array is set to the provisioned value of the synchronization pattern as determined by the most recent settings of SP1, SP2, SP3, and their corresponding repeat parameters by the MPCP. The msb of each cell is set to zero.

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

ACCEPT IN PRINCIPLE.

Use the following definition

The SP array is set to the provisioned value of the synchronization pattern as determined by the most recent settings of SP1, SP2, SP3, and their corresponding length parameters by the MPCP. The msb of each cell is set to zero.

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

*Cl* **142**    Page 18 of 40
*SC* **142.2.2.5.2**    9/13/2018  5:42:28 PM

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*Cl* **142**      *SC* **142.2.2.5.2**           *P* **82**        *L* **7**           # 462

Remein, Duane                                    Huawei

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

No such fifo as OUTPUT_FIFO (yet)

*SuggestedRemedy*

Change "OUTPUT_FIFO" to "TX_FIFO"

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

ACCEPT.

---

*Cl* **142**      *SC* **142.2.2.5.3**           *P* **83**        *L* **6**           # 463

Remein, Duane                                    Huawei

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

We are eliminating the Gearbox.

*SuggestedRemedy*

Change:
"PassToGearbox(v)
This function passes a 257-bit vector v to the Gearbox for outputting to the PMA." to:
PassToPMA(v)
This function passes a 257-bit vector v to the PMA.

In Fig 142-15 change ""PassToGearbox" to "PassToPMA" in 2 places.

Strike para 142.2.2.6 Gearbox (pg 83)

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

ACCEPT.

---

*Cl* **142**      *SC* **142.2.2.5.3**           *P* **83**        *L* **9**           # 544

Kramer, Glen                                     Broadcom

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

Transcode() function definition is wrong. It does not do scrambling (see 91.5.2.5).

*SuggestedRemedy*

1) Change definition of Transcode() as shown below:
Transcode( a[4] )
This function performs 64B/66B to 256B/257B transcoding per 91.5.2.5 and
returns the result. It takes an array of four scrambled 66-bit blocks a[4] as an argument and returns a 257-bit
vector.
2) In Fig 142-13, in State PROCESS_DATA, insert the following line before
TxInput<256:0> <=Transcode( XBUFFER[3:0] ):

XBUFFER[3:0]  <= Scramble( XBUFFER[3:0] )

3) Add the definition for Scramble ( a[4] ) function:
Scramble( a[4] )
This function scrambles the payload of a 66-bit block per 49.2.6. It takes an array of four 66-bit blocks a[4] as an argument and returns an array of four scrambled 66-bit blocks.

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

ACCEPT.

---

*Cl* **142**      *SC* **142.2.2.5.3**           *P* **83**        *L* **11**          # 464

Remein, Duane                                    Huawei

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

Stray characters "a[4] "

*SuggestedRemedy*

Strike

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

REJECT.

This comment was WITHDRAWN by the commenter.

---

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl* **142**          Page 19 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn          *SC* **142.2.2.5.3**     9/13/2018  5:42:28 PM
SORT ORDER: Clause, Subclause, page, line

*Cl* **142**     *SC* **142.2.2.5.4**          *P* **84**          *L* **17**          # 546
Kramer, Glen                           Broadcom

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

In Figure 142-13, variables got mixed up in state NEXT_VECTOR.

*SuggestedRemedy*

Restore the text in NEXT_VECTOR to its original form on slide 6 in remein_3ca_3a_0518.pdf

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

ACCEPT.

---

*Cl* **142**     *SC* **142.2.3**          *P* **83**          *L* **31**          # 465
Remein, Duane                          Huawei

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

I believe both 10 & 25G rates will be specified in Cl 142. "In the OLT, the PCS receive function may operate at a 25.78125 Gb/s rate, as specified herein ({NG-EPON type, symmetric}), or at a 10.3125 Gb/s rate, compliant with Clause {TBD} ({NG-EPON type, asymmetric})."

*SuggestedRemedy*

Change to read:
"In the OLT, the PCS receive function may operate at a 25.78125 Gb/s rate or at a 10.3125 Gb/s rate."

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

ACCEPT IN PRINCIPLE.

"In the OLT, the PCS receive function may operate at the line rate of 25.78125 Gb/s or 10.3125 Gb/s."

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*Cl* **142**     *SC* **142.2.3.2**          *P* **83**          *L* **48**          # 466
Remein, Duane                          Huawei

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

This text was adopted from 76.3.3.2 and needs to be aligned with the new synchronizer SD.

Note that the suggested description assumes that FecDecoded is a ternary variable with values of Invalid, True and False and when read assumes the value of Invalid. The variable must be set to either True or False by the FEC Decode process at the conclusion of each and every FEC CW decode.

*SuggestedRemedy*

Replace with:
"The ONU Synchronizer process begins by setting MatchCount to zero. The process then compares the upper 10-bits of the rx_buffer to the FEC_CW_DELIM constant. If a match is found the process increments MatchCount in the VERIFY state otherwise it executes the Slip() function in the SLIP_1 state to remove one bit from the rx_buffer and reinitializes. In the VERIFY state if MatchCount is less than MATCH_TARGET the rx_buffer is slipped by one FEC_CW_SIZE and the process compares the upper 10 bits of the next FEC codeword to FEC_CW_DELIM. If MatchCount is greater than or equal to MATCH_TARGET in the VERIFY state the process moves to the ALIGNED state where it sets FecFailCount to zero. If the FecDecoded goes False the process moves to the FEC_FAILURE state where FecFailCount is incremented. If FecDecoded goes to True control returns to the ALIGNED state whereas if it goes to False again the FecFailCount in incremented again. If FecFailCount reaches FEC_FAIL_LIMIT the Synchronizer process is reinitialized.

The ONU Synchronizer shall implement the state diagram as depicted in Figure 142-14."

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

ACCEPT IN PRINCIPLE.

Replace with:
"The ONU Synchronizer process begins by setting MatchCount to zero. The process then compares the upper 10-bits of the rx_buffer to the FEC_CW_DELIM constant. If a match is found, the process increments MatchCount in the VERIFY state; otherwise, it executes the Slip() function in the SLIP_1 state to remove the oldest bit from the rx_buffer and add a new bit. In the VERIFY state, if MatchCount is less than MATCH_TARGET, the rx_buffer is slipped by one full FEC codeword (FEC_CW_SIZE_BITS). Control is then passed back to the COMPARE state and the process compares the last 10 bits of the next FEC codeword to FEC_CW_DELIM. If MatchCount is greater than or equal to MATCH_TARGET in the VERIFY state, the synchronization is declared and the process moves to the ALIGNED state, where it sets FecFailCount to zero. If FecDecodeFailed becomes True, the process moves to the FEC_FAILURE state where FecFailCount is incremented. If FecDecodeSucceeded becomes True, control returns to the ALIGNED state whereas if FecDecodeFaile becomes True again, the FecFailCount in incremented again. If FecFailCount reaches FEC_FAIL_LIMIT, the loss of synchronization is declared and the ONU Synchronizer process is reinitialized.

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general     *Cl*  **142**     Page 20 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn     *SC*  **142.2.3.2**     9/13/2018  5:42:28 PM
SORT ORDER: Clause, Subclause, page, line

The ONU Synchronizer shall implement the state diagram as depicted in Figure 142-14."

*Cl* **142**    *SC* **142.2.3.2**              *P* **84**        *L* **16**          # 467

Remein, Duane                                    Huawei

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

In NEXT_VECTOR state the following actions are incorrect.
TxNext <= TxNext
TxPrev <= NextTxVector()

*SuggestedRemedy*

Change action to:
TxPrev <= TxNext
TxNext <= NextTxVector()

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

ACCEPT.

*Cl* **142**    *SC* **142.2.3.2**              *P* **84**        *L* **33**          # 468

Remein, Duane                                    Huawei

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

I was in error when I suggested removing the scrambler function.  It needs to be added
back in.
My apologies to the Editor.

*SuggestedRemedy*

After xIndex <= 0 add the following:
TxInput<256:0>  <= Scramble( TxInput<256:0> )

Descriptive text is included in remein_3ca_1_0918.pdf.

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

ACCEPT IN PRINCIPLE.

See comment #544 for changes to Figure 142-13.

*Cl* **142**    *SC* **142.2.3.2**              *P* **84**        *L* **33**          # 469

Remein, Duane                                    Huawei

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

There is no info conveyed to the reader by setting TxInput<257> to "1".

*SuggestedRemedy*

Change:
"TxInput<57>  <= 1" to:
"TxInput<57>  <=  SCRAMBLED"
Add to constants in proper order:
SCRAMBLED
 TYPE binary
 Value: 1
 When bit 257 of a TxInput or TxOutput vector is set to this value it indicates that vector
bits 256:0 are scrambled data.

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

ACCEPT IN PRINCIPLE.

Change:
"TxInput<257>  <= 1" to:
"TxInput<257>  <=  SCRAMBLED"

Add to constants in proper order:
SCRAMBLED
 TYPE binary
 Value: 1
 This constant indicates that the contents of the 257-bit vector are scrambled. When the bit
TxInput<257> or TxOutput<257> is set to 1, then bits TxInput<256:0> or TxOutput<256:0>
in the same vector carry scrambled data.

*Cl* **142**    *SC* **142.2.3.2**              *P* **84**        *L* **35**          # 470

Remein, Duane                                    Huawei

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

There is no function "FEC_Encoder"

*SuggestedRemedy*

Change to: "FEC_Encode" (no "r")

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

ACCEPT.

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

*Cl*  **142**
*SC*  **142.2.3.2**

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*Cl* **142**     *SC* **142.2.3.2**          *P* **84**      *L* **45**          # 471

Remein, Duane                          Huawei

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

These paras are incorrect and do not describe the synchronizer accepted.
"While in codeword lock, the synchronizer copies the FEC-protected bits from each data block and the parity bits of the codeword into an input buffer. When the codeword is complete, the FEC decoder is triggered, and the input buffer is freed for the next codeword. When in codeword lock, the state diagram continues to check for sync header validity. If 16 or more sync headers in a codeword pair (62 blocks) are invalid, then the state diagram deasserts codeword lock. In addition, if the persist_dec_fail signal becomes set, then codeword lock is deasserted (this check ensures that
certain false-lock cases are not persistent.)"

*SuggestedRemedy*

Strike

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

ACCEPT.

*Cl* **142**     *SC* **142.2.3.2**          *P* **86**      *L* **7**           # 472

Remein, Duane                          Huawei

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

In Figure 142–15 state INIT TxOutput<257:0> statement should be an assignment not a comparison.

*SuggestedRemedy*

per comment

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

ACCEPT.

*Cl* **142**     *SC* **142.2.3.2.1**        *P* **86**      *L* **43**          # 473

Remein, Duane                          Huawei

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

No such constant as FecFailLimit or MatchTarget.

*SuggestedRemedy*

Change to FEC_FAIL_LIMIT and MATCH_COUNT resp.

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

ACCEPT IN PRINCIPLE.

Change to FEC_FAIL_LIMIT and MATCH_TARGET resp.

*Cl* **142**     *SC* **142.2.3.2.1**        *P* **86**      *L* **50**          # 474

Remein, Duane                          Huawei

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

Typo "lock start" should be "lock state"

*SuggestedRemedy*

per comment

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

ACCEPT.

*Cl* **142**     *SC* **142.2.3.2.1**        *P* **87**      *L* **1**           # 475

Remein, Duane                          Huawei

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

Where is a PD used?

*SuggestedRemedy*

Strike definition.

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

ACCEPT IN PRINCIPLE.

Change PD to FEC_CW_DELIM and use the following definition

See 142.2.2.5.1.

in 142.2.2.5.1, change definition of FEC_CW_DELIM to read as follows

TYPE: 10-bit vector
The burst delimiter bit pattern found at the end of each FEC Parity block.
VALUE: 0x3-CA

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl* **142**          Page 22 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn          *SC* **142.2.3.2.1**       9/13/2018  5:42:28 PM
SORT ORDER: Clause, Subclause, page, line

| | | | | |
|---|---|---|---|---|
| *Cl* **142** | *SC* **142.2.3.2.2** | *P* **87** | *L* **8** | # 476 |

Remein, Duane                                    Huawei

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

No such variable FecDecodeFail

*SuggestedRemedy*

Replace with:
FecDecoded
  TYPE: Ternary
  The FecDecoded variable can assume one of three values; "Invalid", True, or False.
When read it assumes a value of "Invalid".  The variable is set by the FEC decoding engine
at the completion of each codeword decoding operation.

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

REJECT.

This comment was WITHDRAWN by the commenter.

| | | | | |
|---|---|---|---|---|
| *Cl* **142** | *SC* **142.2.3.2.2** | *P* **87** | *L* **12** | # 477 |

Remein, Duane                                    Huawei

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

No such variable FecDecodeSucceed

*SuggestedRemedy*

Strike

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

REJECT.

This comment was WITHDRAWN by the commenter.

| | | | | |
|---|---|---|---|---|
| *Cl* **142** | *SC* **142.2.3.2.2** | *P* **87** | *L* **21** | # 478 |

Remein, Duane                                    Huawei

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

No such variable Match

*SuggestedRemedy*

Strike

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

ACCEPT.

| | | | | |
|---|---|---|---|---|
| *Cl* **142** | *SC* **142.2.3.2.2** | *P* **87** | *L* **31** | # 479 |

Remein, Duane                                    Huawei

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

typo "hold" should be "holds"

*SuggestedRemedy*

per comment

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

ACCEPT.

| | | | | |
|---|---|---|---|---|
| *Cl* **142** | *SC* **142.2.3.2.3** | *P* **87** | *L* **36** | # 480 |

Remein, Duane                                    Huawei

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

No such function Compare

*SuggestedRemedy*

Strike

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

ACCEPT.

| | | | | |
|---|---|---|---|---|
| *Cl* **142** | *SC* **142.2.3.2.4** | *P* **88** | *L* **1** | # 592 |

Kramer, Glen                                    Broadcom

*Comment Type* **T**        *Comment Status* **A**        *post-deadline*

In ONU synchronizer state diagram (Figure 142-16), FecDecoded variable needs to be
defined as a three-valued logic: (true - successful decoding; false - failed decoding, Z -
waiting for FEC decoding. This is an unnecessary complicated solution to a simple
behavior.

*SuggestedRemedy*

Revert to the original version of this state diagram (kramer_3ca_1_0318.pdf) and use two
booleans: FecDecodeSuccess and FecDecodeFailure.
The changes to the state diagram and the definitions of these two variables are provided in
kramer_3ca_4_0918.pdf.

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

ACCEPT.

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

*Cl* **142**
*SC* **142.2.3.2.4**

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*Cl* **142**      *SC* **142.2.3.2.4**           *P* **88**      *L* **1**           # 593

Kramer, Glen                              Broadcom

*Comment Type*   **T**         *Comment Status*  **A**                        *post-deadline*

The generic section of the current MCRS specification allows the number of channels to onlt be powers of 2 (i.e, 1, 2, 4, 8, etc.). This is an unnecessary restriction and it does not make the MCRS state diagram simpler.  MCRS is only specified this way because of how variables rCol and wCol are defined (no explicit reset to 0, only on roll-over)

*SuggestedRemedy*

1) Define an generic constant NUM_CH to represent the number of supported MCRS channels
NUM_CH
　TYPE: integer
　Value: application specific (see 143.3.3.2)
　The NUM_CH constant represents the number of channels supported by an MCRS-based device.

2) In Nx25G-EPON application-specific section, add the following:
NUM_CH
　Value: 1 for devices supporting only 25 Gb/s operation over a single channel;
　　　2 for devices supporting 50 Gb/s operation over two channels.

2) Make changes to MCRS Input (Fig 143-13) and MCRS Output (Fig 143-17) state diagrams as shown in red in kramer_3ca_5_0918.pdf.

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

ACCEPT IN PRINCIPLE.

1) Define an generic constant NUM_CH to represent the number of supported MCRS channels
NUM_CH
　TYPE: unsigned integer
　Value: application specific (see 143.3.3.2)
　The NUM_CH constant represents the number of channels supported by an MCRS-based device.

2) In Nx25G-EPON application-specific section, add the following:
NUM_CH
　Value: 1 for devices supporting only 25 Gb/s operation over a single channel;
　　　2 for devices supporting 50 Gb/s operation over two channels.

2) Make changes to MCRS Input (Fig 143-13) and MCRS Output (Fig 143-17) state diagrams as shown in red in kramer_3ca_5_0918.pdf.

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*Cl* **142**      *SC* **142.3.2**           *P* **90**      *L* **4**           # 481

Remein, Duane                             Huawei

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

Well this could be embarrassing:
"switch the decoder in appropriately"
Standards should never be inappropriate.

*SuggestedRemedy*

Change to read:
"switch in the decoder as appropriate."

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

ACCEPT.

---

*Cl* **142**      *SC* **Figure 142-2**           *P* **66**      *L* **13**           # 528

Wey, Jun Shan                             ZTE TX

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

"MPRS" should be "MCRS"

*SuggestedRemedy*

Replace "MPRS" with "MCRS"

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

ACCEPT.

---

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

*Cl*  **142**
*SC*  **Figure 142-2**

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9/13/2018 5:42:28 PM

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*Cl* **143**      *SC* **143.1**                *P* **93**        *L* **10**            #  482
Remein, Duane                         Huawei

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

I think an important point to be made here is that the MCRS is applicable to either P2P or P2MP applications.

*SuggestedRemedy*

Change:
"Generally, single-channel RS specifications enabled a single MAC to interface to a single PHY in point-to-point links, or a multiple MACs to interface to a single PHY in P2MP links (e.g., EPON architectures). This concept is expanded in this clause to allow multiple MACs to interface with multiple PHYs (see Figure 143–1)." to:
"Generally, single-channel RS specifications enabled a single MAC to interface to a single PHY in point-to-point (P2P) links, or a multiple MACs to interface to a single PHY in P2MP links (e.g., EPON architectures). This concept is expanded in this clause to allow single or multiple MACs to interface with multiple PHYs in either P2P or P2MP applications (see Figure 143–1)."

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

ACCEPT IN PRINCIPLE.

"Generally, single-channel RS specifications enabled a single MAC to interface to a single PHY in point-to-point links, or a multiple MACs to interface to a single PHY in P2MP links (e.g., EPON architectures). This concept is expanded in this clause to allow multiple MACs to interface with multiple PHYs (see Figure 143–1)."

to:

"Generally, single-channel RS specifications enabled a single MAC to interface to a single PHY in point-to-point (P2P) links, or multiple MACs to interface to a single PHY in P2MP links (e.g., EPON architectures). This concept is expanded in this clause to allow single or multiple MACs to interface with multiple PHYs in either P2P or P2MP applications (see Figure 143–1)."

---

*Cl* **143**      *SC* **143.1**                *P* **93**        *L* **47**            #  573
Hajduczenia, Marek                 Charter Communicatio

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

There is very little value on aggregating multiple 100M MIIs together, given that these PHYs and associated PCS layers are very mature at this time and unlikely to benefit from MCRS and associated multi-lane cpabilities

*SuggestedRemedy*

Strike the editorial note in lines 46-47

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

ACCEPT.

---

*Cl* **143**      *SC* **143.2**                *P* **94**        *L* **1**             #  537
Wey, Jun Shan                         ZTE TX

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

The summary of major concept should be updated to clarify the details of the MCRS_CTRL primitives.

*SuggestedRemedy*

Insert new text in item a). See Supplement file wey_3ca_2_0918

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

ACCEPT IN PRINCIPLE.

Add the following text at the end of a): ", which indicate envelope start time, durations, and transmission channels"

---

*Cl* **143**      *SC* **143.2**                *P* **94**        *L* **12**            #  534
Wey, Jun Shan                         ZTE TX

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

Bandwidth granted to a GLID is shared among multiple member LLIDs (see e.g. zhangweiliang_3ca_1b_0317). So within a granted GLID bandwidth there would be multiple envelopes of multiple LLIDs.

As part of the GLID related updates, Sec. 143.2 (summary of major concept) should be revised.

*SuggestedRemedy*

Add item g) If MCRS_CTRL primitive carries GLID bandwidth, the scheduler in MCRS schedules data from member LLIDs of GLID, based on the policy configured by OAM.

See Supplement file wey_3ca_1_0918

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

REJECT.

This comment was WITHDRAWN by the commenter.

---

*Cl* **143**      *SC* **143.2.1**              *P* **94**        *L* **24**            #  574
Hajduczenia, Marek                 Charter Communicatio

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

Wrong expansion: logical link identification - see 1.4.313

*SuggestedRemedy*

change to "logical link identifier"

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

ACCEPT.

---

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl* **143**              Page 25 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn      *SC* **143.2.1**          9/13/2018  5:42:28 PM
SORT ORDER: Clause, Subclause, page, line

*Cl* **143**      *SC* **143.2.2**                      *P* **94**        *L* **37**        # 575
Hajduczenia, Marek                      Charter Communicatio

*Comment Type*   **T**        *Comment Status*   **A**
An example of such uneven allocation might be handy.

*SuggestedRemedy*
Insert the following text at the end of 143.2.2: "For example, in 50/10G-EPON OLT, there are 2 transmit MCRS channels associated with 25GMII and 1 receive MCRS channel associated with XGMII."

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

Insert the following text at the end of 143.2.2: "For example, in 50/10G-EPON OLT, there are two transmit MCRS channels attached to two 25GMII and one receive MCRS channel attached to one XGMII."

*Cl* **143**      *SC* **143.2.3**                      *P* **94**        *L* **47**        # 483
Remein, Duane                      Huawei

*Comment Type*   **E**        *Comment Status*   **A**                          *bucket*
MCRS_CTRL.
request() crosses line

*SuggestedRemedy*
Make MCRS_CTRL.request() none breaking {Esc n s}

*Response*                  *Response Status*   **C**
ACCEPT.

*Cl* **143**      *SC* **143.2.4.2**                      *P* **95**        *L* **21**        # 576
Hajduczenia, Marek                      Charter Communicatio

*Comment Type*   **E**        *Comment Status*   **A**                          *bucket*
More "always" statements

*SuggestedRemedy*
Remove "always" in line 22

*Response*                  *Response Status*   **C**
ACCEPT.

*Cl* **143**      *SC* **143.2.4.2**                      *P* **95**        *L* **22**        # 484
Remein, Duane                      Huawei

*Comment Type*   **TR**        *Comment Status*   **A**
This sentence and Fig 143-3 are misleading:
"An envelope includes one or more data frames and can contain at most two partial frames (one at the beginning and one at the end of the envelope) and any number of whole frames (see Figure 143–3)."
While true if only one channel is available to the system it is not generally true for a multi-channel system where the objective is to attain a MAC data rate of more than that of a single channel.  In such systems, single frames will be spread over multiple channels and thus each envelope can transport multiple frame fragments.

*SuggestedRemedy*
Change to read:
"In a system with a single channel an envelope includes one or more data frames and can contain at most two partial frames (one at the beginning and one at the end of the envelope) and any number of whole frames (see Figure 143–3).  In systems with multiple channels envelopes may overlap as explained in 143.2.5 and frames can be simultaneously transmitted over multiple channels with each channel transporting parts of a single frame.  However, at the conclusion of the overlapped transmission only a single frame can remain fragmented."

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

Change to read:
"In a system with a single channel an envelope includes one or more data frames and can contain at most two partial frames (one at the beginning and one at the end of the envelope) and any number of non-fragmented frames (see Figure 143–3). In systems with multiple channels, envelopes may overlap (see 143.2.5) and a frame may be striped over multiple channels with each channel transporting parts of this frame. However, at the conclusion of the overlapped transmission, only a single frame may remain fragmented."

*Cl* **143**      *SC* **143.2.4.4**                      *P* **96**        *L* **46**        # 577
Hajduczenia, Marek                      Charter Communicatio

*Comment Type*   **E**        *Comment Status*   **A**                          *bucket*
External reference: 46.3.1.4

*SuggestedRemedy*
Apply Forrest Green color to "46.3.1.4"

*Response*                  *Response Status*   **C**
ACCEPT.

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

*Cl* **143**        Page 26 of 40
*SC* **143.2.4.4**        9/13/2018  5:42:28 PM

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*Cl* **143**      *SC* **143.2.4.4**          *P* **97**          *L* **3**          # 530

Wey, Jun Shan                    ZTE TX

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

Preample should be IPG

*SuggestedRemedy*

Replace "preample" with "IPG"

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

ACCEPT IN PRINCIPLE.

Change

The default preamble generated by the MAC and the reduced preamble are highlighted.

To

The default IPG generated by the MAC and the reduced IPG are highlighted.

---

*Cl* **143**      *SC* **143.2.5**          *P* **97**          *L* **50**          # 485

Remein, Duane                    Huawei

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

Channel bonding can be done to either US or DS and need not be done to US _AND_ DS.

*SuggestedRemedy*

Change:
"simultaneously bound to N1 MCRS transmit channels and N2 MCRS receive channels" to:
"simultaneously bound to N1 MCRS transmit channels or N2 MCRS receive channels"
and change:
"transmit data rate of N1×25 Gb/s and the receive data rate of N2×25 Gb/s" to:
"transmit data rate of N1×25 Gb/s or the receive data rate of N2×25 Gb/s"

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

ACCEPT IN PRINCIPLE.

PLS interface always binds to both upstream and downstream channels, and their numbers may be different as indicated in the text right now (N1 and N2).

Add the following text at the end of: "N1 MCRS transmit channels and N2 MCRS receive channels" - ", where N1 may not equal N2."

---

*Cl* **143**      *SC* **143.2.5**          *P* **97**          *L* **51**          # 578

Hajduczenia, Marek                    Charter Communicatio

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

N1 and N2 are undefined - these variables show up in the text in a rather unexpected way and not explained what these are

*SuggestedRemedy*

Either add some explanation to what N1 and N2 are, or remove them altogether - right now, it does not serve to explain what it is intended

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

ACCEPT IN PRINCIPLE.

Replace N1 with $N_{TX}$
Replace N2 with $N_{RX}$

---

*Cl* **143**      *SC* **143.2.5**          *P* **98**          *L* **30**          # 579

Hajduczenia, Marek                    Charter Communicatio

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

Figure 143-6 uses different colors for LLID a and LLID B, making LLID B bars hard to read (color is too light)

*SuggestedRemedy*

Use the same color for LLID A and B alike. Also, for improved readability, consider using dashed horizontal axes and dotted vertical guide lines

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

ACCEPT IN PRINCIPLE.

See hajduczenia_3ca_2_0918.pdf for updated figure.

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

*Cl* **143**
*SC* **143.2.5**

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*Cl* **143**       *SC* **143.2.5.1**              *P* **98**            *L* **41**              # 538
Wey, Jun Shan                    ZTE TX

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

Section 143.2.5.1 describes LLID transmission over multiple MCRS channels. The description is missing the following aspects and should be further expanded.
☐ MCRS should collect the information of channel availability and the related time duration for data transmission.
☐ An EQ is delivered over the channel that has the earliest transmission availability. If there are more than one such channel, the one with the lowest channel index value is selected.
☐ EQs are delivered over multiple channels based on channel transmission availability. The EQs transmitted over the same channel are formed into one envelope.
☐ The grant allocation in figure 143-7 could be optimized to maximize the peak rate.

*SuggestedRemedy*

See also Supplement file wey_3ca_2_0918

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

ACCEPT IN PRINCIPLE.

Change first para in 143.2.5.1 to read

The dynamic channel bonding is achieved by interleaving data belonging to a single LLID (i.e., data from a single MAC instance) over multiple envelopes on multiple MCRS channels, as illustrated in Figure 143–7. Each EQ is transmitted on the channel that has the earliest transmission availability. If there are multiple such channels, the one with the lowest channel index is selected. In other words, the overlapping envelopes are filled with EQs in the increasing order of MCRS channel index.

*Cl* **143**       *SC* **143.2.5.3**              *P* **99**            *L* **43**              # 486
Remein, Duane                    Huawei

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

While 33 is a good number for 50G-EPON it may not be right in a generic sense.

*SuggestedRemedy*

Change:
"The number of rows is set to
"… 32. This provides sufficient buffering ..." to:
"… a size sufficient to accommodate the expected skew, for example 33. "In this example a size of 33 provides sufficient buffering …"

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

ACCEPT IN PRINCIPLE.

Change

The number of rows is set to 32. This provides sufficient buffering to mitigate approximately 80 ns of skew between any two channels (assuming a 25GMII).

To

If the number of rows is set to 32, this provides sufficient buffering to mitigate approximately 80 ns of skew between any two channels (assuming a 25GMII).

*Cl* **143**       *SC* **143.3.1**              *P* **103**            *L* **5**              # 580
Hajduczenia, Marek                    Charter Communicatio

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

"In addition to the M PLS service interfaces" - irrespective of how many times I read it, it always reads as "MPLS" = Multi Protocol Label Switching

*SuggestedRemedy*

To avoid confusion, can we switch from "M" to "K" (for example)?

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

ACCEPT IN PRINCIPLE.

Change
"In addition to the M PLS service interfaces"
to
"In addition to the M instances of the PLS service interface"

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

*Cl* **143**
*SC* **143.3.1**

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*Cl* **143**      *SC* **143.3.1**                *P* **103**      *L* **7**        # 581
Hajduczenia, Marek                Charter Communicatio

*Comment Type*  **E**        *Comment Status*  **A**                        *bucket*
Forward looking reference to EPON-specific figure

*SuggestedRemedy*
Drop "and Figure 143-18" - it is not needed + update Figure 143-10 accordingly

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

Drop "and Figure 143-18" - it is not needed

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*Cl* **143**      *SC* **143.3.1.1**              *P* **103**      *L* **41**       # 582
Hajduczenia, Marek                Charter Communicatio

*Comment Type*  **E**        *Comment Status*  **A**                        *bucket*
"In all single channel RSs"

*SuggestedRemedy*
Change to "In all single channel RS,"

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

Change to "In all single-channel RS definitions,"

---

*Cl* **143**      *SC* **143.3.1.1**              *P* **103**      *L* **45**       # 583
Hajduczenia, Marek                Charter Communicatio

*Comment Type*  **E**        *Comment Status*  **A**                        *bucket*
Primitive name broken across line

*SuggestedRemedy*
Make sure PLS_DATA…is not broken across lines

*Response*              *Response Status*  **C**
ACCEPT.

---

*Cl* **143**      *SC* **143.3.1.1.1**            *P* **103**      *L* **53**       # 584
Hajduczenia, Marek                Charter Communicatio

*Comment Type*  **E**        *Comment Status*  **A**                        *bucket*
External reference: 46.1.7.1

*SuggestedRemedy*
Add Forrest Green tag to the reference text. Also in 143.3.1.1.3

*Response*              *Response Status*  **C**
ACCEPT.

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*Cl* **143**      *SC* **143.3.1.2**              *P* **105**      *L* **8**        # 487
Remein, Duane                     Huawei

*Comment Type*  **E**        *Comment Status*  **A**                        *bucket*
1st instance of MPCP

*SuggestedRemedy*
Change "MPCP" to Multi-Point Control Protocol (MPCP)

*Response*              *Response Status*  **C**
ACCEPT.

---

*Cl* **143**      *SC* **143.3.1.2.1**            *P* **105**      *L* **11**       # 535
Wey, Jun Shan                     ZTE TX

*Comment Type*  **TR**       *Comment Status*  **R**
Bandwidth granted to a GLID is shared among multiple member LLIDs (see e.g.
zhangweiliang_3ca_1b_0317). So within a granted GLID bandwidth there would be multiple
envelopes of multiple LLIDs. The format of MCRS_CTRL[ch].request(link_id, epam,
env_length) primitive indicates EQs from LLID(link_id) form an envelope of
length(env_length) from position(epam) on channel(ch). The syntax is correct if link_id
represents a ULID/MLID/PLID. However, if link_id represents a GLID, it is incorrect to use
the parameter 'env_length' in the MCRS_CTRL primitive, as EQs from different member
LLIDs form multiple envelopes on the specified channel. The MCRS_CNTL primitive should
indicate the length of the granted GLID bandwidth instead. It is more appropriate to use
'grant_length' which would apply to all LLID types.

*SuggestedRemedy*
See Supplement file wey_3ca_1_0918

*Response*              *Response Status*  **C**
REJECT.

This is an attempt to specify the operation of a DBA mechanism, something that has been
historically out of the scope of 802.3 P2MP standards.

---

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

*Cl* **143**
*SC* **143.3.1.2.1**

Page 29 of 40
9/13/2018  5:42:29 PM

---

*Cl* **143**        *SC* **143.3.2**                    *P* **105**        *L* **50**            # 540

Kramer, Glen                                Broadcom

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

The description of Envelope Header format does not indicate bit transmisison order for the header.
Envelope header fields are defined not in correct order.
Missing any information of CRC8 calculation method (generating polynomial, bit order, etc.)

*SuggestedRemedy*

Replace subclause 143.3.2 with the text, figures, and tables shown in
kramer_3ca_1_0918.pdf. (kramer_3ca_2_0918.pdf shows clean text version)

Main changes:
1) Indicate bit signifince for various header fileds in Figure 143-11, as shown in
kramer_3ca_1_0918.pdf (see red text)
2) Clarify bit order: "Octets within each envelope header field are transmitted from least
significant to most significant. Bits within each octet are transmitted from LSB to MSB."
(same text as we use for MPCPDUs).
3) Add references to CRC8 sublcuase in C65 and add examples of CRC8 values.

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

ACCEPT.

---

*Cl* **143**        *SC* **143.3.2**                    *P* **106**        *L* **44**            # 488

Remein, Duane                               Huawei

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

Typo "received" should be "receiver"
in "value is ignored at the received except for"

*SuggestedRemedy*

per comment

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

ACCEPT.

---

*Cl* **143**        *SC* **143.3.3.1**                  *P* **108**        *L* **33**            # 489

Remein, Duane                               Huawei

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

Empty section

*SuggestedRemedy*

delete

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

ACCEPT.

---

*Cl* **143**        *SC* **143.3.3.3**                  *P* **108**        *L* **51**            # 541

Kramer, Glen                                Broadcom

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

The concept of EQ is introduced in clause 143. It makes more sense to have all EQ
constants defined in the same clause.

*SuggestedRemedy*

1) Move definitions of IBI_EQ and RATE_ADJ_EQ from 142.2.2.5.1 Constants to 143.3.3.3
Constants.
2) in 143.3.3.3, change the definition of INTER_ENV_IDLE into following:
IEI_EQ
  TYPE: 72-bit vector
  Value: 0xFF-08-08-08-08-08-08-08-08
  The Inter-Envelope Idle represents an EQ value transmitted between envelopes.
3) Replace remaining instances of INTER_ENV_IDLE with IEI_EQ.

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

ACCEPT.

---

*Cl* **143**        *SC* **143.3.3.3**                  *P* **108**        *L* **52**            # 490

Remein, Duane                               Huawei

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

ADJ_BLOCK_SIZE details needed

*SuggestedRemedy*

TYPE: integer
Value: implementtion dependent.
The ADJ_BLOCK_SIZE represents the number of EQs that encode to a single FEC
codeword in the Nx25G-EPON system.

This change is included in remein_3ca_2_0918.pdf.

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

REJECT.

This comment was WITHDRAWN by the commenter.

---

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl* **143**                    Page 30 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected      RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn          *SC* **143.3.3.3**              9/13/2018 5:42:29 PM
SORT ORDER: Clause, Subclause, page, line

*Cl* **143**      *SC* **143.3.3.3**           *P* **108**        *L* **52**           # 491

Remein, Duane                               Huawei

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

The value or size of severl constants and variables are application dependent.  As such in 143.3.3 and 143.3.4 this shold be reflected in the definition.  Application specific definitons should be noted in 143.4.1.x.

*SuggestedRemedy*

See remein_3ca_2_0918.pdf for specific changes and additions

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

ACCEPT IN PRINCIPLE.

See remein_3ca_2a_0918.pdf for specific changes and additions

---

*Cl* **143**      *SC* **143.3.3.3**           *P* **109**        *L* **3**           # 492

Remein, Duane                               Huawei

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

INTER_ENV_IDLE has been replaced with IEI_EQ.

*SuggestedRemedy*

Replace "INTER_ENV_IDLE" with "IEI_EQ"  here and at pg 115 line 43
On pg 117 line 19 & 20 replace "INTER_ENV_IDLE" with "Inter-Envelope Idle"

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

ACCEPT IN PRINCIPLE.

See comment #541

---

*Cl* **143**      *SC* **143.3.3.3**           *P* **109**        *L* **15**           # 493

Remein, Duane                               Huawei

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

RATE_ADJ_EQ details needed

*SuggestedRemedy*

replace "{TBD}" with "0xFF-09-09-09-09-09-09-09"

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

ACCEPT IN PRINCIPLE.

See comment #541

---

*Cl* **143**      *SC* **143.3.3.3**           *P* **109**        *L* **19**           # 494

Remein, Duane                               Huawei

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

RATE_ADJ_SIZE details needed

*SuggestedRemedy*

TYPE: integer
Value: implementation dependent.
The RATE_ADJ_SIZE variable represents the number of EQs that encode to a single FEC parity word in the Nx25G-EPON system.

This change is included in remein_3ca_2_0918.pdf.

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

ACCEPT IN PRINCIPLE.

TYPE: integer
The RATE_ADJ_SIZE variable represents the number of EQs that encode to a single FEC parity word in the Nx25G-EPON system.

Specyfing value as implementation-dependent does not add any value.

---

*Cl* **143**      *SC* **143.3.3.4**           *P* **109**        *L* **31**           # 495

Remein, Duane                               Huawei

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

BlkLeft details needed

*SuggestedRemedy*

TYPE: integer
The BlkLeft variable represents the number of EQs remaining in the envelope currently being processed by the MCRS.

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

ACCEPT.

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl* **143**          Page 31 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn          *SC* **143.3.3.4**          9/13/2018 5:42:29 PM
SORT ORDER: Clause, Subclause, page, line

*Cl* **143**        *SC* **143.3.3.4**                    *P* **109**            *L* **36**            # 496

Remein, Duane                              Huawei

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

ENV_TX is not a 72-bit shift register as implied by "72-bit binary array"

*SuggestedRemedy*

Change TYPE: to "array of 72-bit vectors"

This change is included in remein_3ca_2_0918.pdf.

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

REJECT.

This comment was WITHDRAWN by the commenter.

*Cl* **143**        *SC* **143.3.3.4**                    *P* **109**            *L* **40**            # 497

Remein, Duane                              Huawei

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

Given that this is section is intended to be generic we should omit this sentence "For 100 Gb/s devices N = 4, for 50 Gb/s devices N = 2, and for 25 Gb/s devices N = 1." as the rate is dependent on the base xMII rate which can be either 25G or 10G.

*SuggestedRemedy*

per comment

This change is included in remein_3ca_2_0918.pdf.

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

REJECT.

This comment was WITHDRAWN by the commenter.

*Cl* **143**        *SC* **143.3.3.4**                    *P* **109**            *L* **46**            # 498

Remein, Duane                              Huawei

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

Given the finite size of the variable the following statement is not quite correct: "if negative this variable represents the number of EQ periods since the end of the last envelope on the channel."
Also it should be noted that EnvLeft[] is none roll-over (assuming an ONU can go > 21ms without a grant).

*SuggestedRemedy*

Change:
"if negative this variable represents the number of EQ periods since the end of the last envelope on the channel." to:
"if negative this variable represents the minimum number of EQ periods since the end of the last envelope on the channel."

Add at end of description "At terminal count this variable does not rollover."

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

ACCEPT IN PRINCIPLE.

Delete "if negative this variable represents the number of EQ periods since the end of the last envelope on the channel."

Change "If positive" to "The"

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general        *Cl* **143**                Page 32 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected      RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn        *SC* **143.3.3.4**            9/13/2018  5:42:29 PM
SORT ORDER: Clause, Subclause, page, line

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*Cl* **143**          *SC* **143.3.3.4**                    *P* **109**          *L* **51**                    # 499

Remein, Duane                          Huawei

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

The primary purpose of this variable is skew remediation not the row index into ENV_TX which would only requires a 5 bit variable.

*SuggestedRemedy*

Change:
"The EnvPam variable indicates the row index in the ENV_RX into which the received data is to be written, its primary function is to remove skew accumulated during transport between two or more channels from a single transmitter." to:
"The EnvPam variable is used to remove skew accumulated during transport between two or more channels from a single transmitter.  Its lower bits are also used as the row index for ENV_RX into which the received data is to be written (see 143.3.4)."

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

ACCEPT IN PRINCIPLE.

Change:

"The EnvPam variable indicates the row index in the ENV_RX into which the received data is to be written, its primary function is to remove skew accumulated during transport between two or more channels from a single transmitter."

to:

"The EnvPam variable is used to remove delay variability (including skew) accumulated during transport between two or more channels from a single transmitter. All or some number of lower bits of EnvPam are also used as the row index for the ENV_RX buffer into which the received data is to be written (see 143.3.4)."

---

*Cl* **143**          *SC* **143.3.3.4**                    *P* **110**          *L* **16**                    # 500

Remein, Duane                          Huawei

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

We seem to have lost rCol definition

*SuggestedRemedy*

Add:
rCol
   TYPE: Integer
   The rCol variable represents the ENV_TX buffer column currently being read by the Transmit process. Each column corresponds to a separate transmission channel, i.e., a separate xMII interface. The size of this variable is implementation specific.

This change is included in remein_3ca_2_0918.pdf.

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

REJECT.

This comment was WITHDRAWN by the commenter.

---

*Cl* **143**          *SC* **143.3.3.4**                    *P* **110**          *L* **25**                    # 501

Remein, Duane                          Huawei

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

There is only one TX_CLK so this phrase is extraneous and should be stricken "for channel c".

*SuggestedRemedy*

per comment

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

REJECT.

This comment was WITHDRAWN by the commenter.

---

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl* **143**          Page 33 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected      RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn          *SC* **143.3.3.4**          9/13/2018  5:42:29 PM
SORT ORDER: Clause, Subclause, page, line

*Cl* **143**    *SC* **143.3.3.4**              *P* **110**       *L* **29**        # 502
Remein, Duane                                    Huawei

*Comment Type*    **T**         *Comment Status*    **A**
TxActive description needed

*SuggestedRemedy*
Replace { description } with "When True the TxActive[c] variable indicates that channel c is
currently enabled for use. When this variable is False transmission on channel c is
prohibited at all times."

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

Replace { description } with

"When set to True, the TxActive[c] variable indicates that channel c is currently enabled for
transmission. The channel transmits the envelopes or inter-envelope idles in the absence
of envelopes. When set to False, transmission on channel c is prohibited and this channel
generates only inter-burst idles towards the xMII."

*Cl* **143**    *SC* **143.3.3.5**              *P* **111**       *L* **11**        # 503
Remein, Duane                                    Huawei

*Comment Type*    **TR**        *Comment Status*    **A**
GetFillerEQ function not copied properly corrupting EnvStartHeader definition.

*SuggestedRemedy*
Refer back to remein_3ca_2_0718 page 20 & 21 for proper definitions of both functions.

*Response*                    *Response Status*    **C**
ACCEPT.

*Cl* **143**    *SC* **143.3.3.6.1**            *P* **113**       *L* **21**        # 504
Remein, Duane                                    Huawei

*Comment Type*    **TR**        *Comment Status*    **A**
What does "LinkId[wCol] ? 0x00-00" mean?

*SuggestedRemedy*
Change "?" to "!="

*Response*                    *Response Status*    **C**
ACCEPT.

*Cl* **143**    *SC* **143.3.3.6.2**            *P* **113**       *L* **45**        # 505
Remein, Duane                                    Huawei

*Comment Type*    **T**         *Comment Status*    **A**
This statement is redundant with the 2nd sentence in the next para and should be stricken:
"One instance of the state diagram is instantiated for each xMII."

*SuggestedRemedy*
per comment

*Response*                    *Response Status*    **C**
ACCEPT.

This is a technical change. Comment type changed from E to T.

*Cl* **143**    *SC* **143.3.4.3**              *P* **116**       *L* **7**         # 506
Remein, Duane                                    Huawei

*Comment Type*    **TR**        *Comment Status*    **D**
ENV_RX is not a 72-bit shift register

*SuggestedRemedy*
Change TYPE: to "array of 72-bit vectors"

This change is included in remein_3ca_2_0918.pdf.

*Proposed Response*           *Response Status*    **Z**
REJECT.

This comment was WITHDRAWN by the commenter.

*Cl* **143**    *SC* **143.3.4.3**              *P* **116**       *L* **11**        # 507
Remein, Duane                                    Huawei

*Comment Type*    **E**         *Comment Status*    **D**
Given that this is section is intended to be generic we should omit this sentence "For 100
Gb/s devices N = 4, for 50 Gb/s devices N = 2, and for 25 Gb/s devices N = 1." as the rate
is dependent on the base xMII rate which can be either 25G or 10G.

*SuggestedRemedy*
per comment

This change is included in remein_3ca_2_0918.pdf.

*Proposed Response*           *Response Status*    **Z**
REJECT.

This comment was WITHDRAWN by the commenter.

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl*  **143**                  Page 34 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn      *SC*  **143.3.4.3**              9/13/2018  5:42:29 PM
SORT ORDER: Clause, Subclause, page, line

*Cl* **143**     *SC* **143.3.4.3**         *P* **116**     *L* **52**         # 508
Remein, Duane                              Huawei

*Comment Type* **TR**     *Comment Status* **D**
We seem to have lost wCol and wRow definitions

*SuggestedRemedy*
Add:
wCol
    The wCol variable represents the ENV_RX buffer column currently being written by the
Receive process. Each column corresponds to a separate reception channel, i.e., a
separate xMII interface.

wRow
    The wRow variable represents the ENV_RX buffer row index currently being written by
the Receive process.

This change is included in remein_3ca_2_0918.pdf.

*Proposed Response*        *Response Status* **Z**
REJECT.

This comment was WITHDRAWN by the commenter.

---

*Cl* **143**     *SC* **143.4.1**         *P* **121**     *L* **3**         # 509
Remein, Duane                              Huawei

*Comment Type* **E**     *Comment Status* **A**                  *bucket*
Duplicate alpha list) Alpha list) not needed.

*SuggestedRemedy*
Remove the dup "alpha)"s

*Response*        *Response Status* **C**
ACCEPT.

---

*Cl* **143**     *SC* **143.4.1**         *P* **121**     *L* **3**         # 510
Remein, Duane                              Huawei

*Comment Type* **T**     *Comment Status* **A**
Assuming we will use 10G in the US direction

*SuggestedRemedy*
Change:
"supporting 25 Gb/s operation" to:
"supporting 25 Gb/s or 10 Gb/s operation"

*Response*        *Response Status* **C**
ACCEPT.

---

*Cl* **143**     *SC* **143.4.1**         *P* **121**     *L* **4**         # 585
Hajduczenia, Marek                         Charter Communicatio

*Comment Type* **E**     *Comment Status* **A**                  *bucket*
Double lettered list

*SuggestedRemedy*
Remove one of the list levels

*Response*        *Response Status* **C**
ACCEPT.

---

*Cl* **143**     *SC* **143.4.1**         *P* **121**     *L* **10**         # 511
Remein, Duane                              Huawei

*Comment Type* **T**     *Comment Status* **R**
Duplicate statement with Pg 119 line 43: An MCRS channel that carries information from
the OLT to the ONU is referred to as the downstream channel (DC), and the channel that
carries information from an ONU to the OLT is referred to as the upstream channel (UC).

*SuggestedRemedy*
Strike

*Response*        *Response Status* **C**
REJECT.

Different concetps: transmission direction versus channel direction.

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

*Cl* **143**
*SC* **143.4.1**

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9/13/2018 5:42:29 PM

*Cl* **143**     *SC* **143.4.1.2**         *P* **121**      *L* **48**        #  531
Wey, Jun Shan                    ZTE TX

*Comment Type*   **ER**       *Comment Status* **A**                     *bucket*
　　Typo "were" should be "where"

*SuggestedRemedy*

*Response*              *Response Status*  **C**
　　ACCEPT.

---

*Cl* **143**     *SC* **143.4.1.2**         *P* **122**      *L* **1**        #  512
Remein, Duane                    Huawei

*Comment Type*   **E**       *Comment Status* **A**                     *bucket*
　　This para should be part of the preceding para which deals with "A distinction is made regarding the underlying mechanisms of achieving the asymmetric data rates."

*SuggestedRemedy*
　　Combine the two paras.

*Response*              *Response Status*  **C**
　　ACCEPT.

---

*Cl* **143**     *SC* **143.4.1.2**         *P* **122**      *L* **12**        #  532
Wey, Jun Shan                    ZTE TX

*Comment Type*   **TR**       *Comment Status* **A**
　　"...transmit on DC0 and DC1" is incorrect

*SuggestedRemedy*
　　Change to 'receive' on DC0 and DC1

*Response*              *Response Status*  **C**
　　ACCEPT.

　　This is a technical change. Commrnt type changed from E to T.

---

*Cl* **143**     *SC* **143.5**         *P* **124**      *L* **2**        #  586
Hajduczenia, Marek              Charter Communicatio

*Comment Type*   **E**       *Comment Status* **A**                     *bucket*
　　Wrong capitalization: MULTI-CHANNEL Reconciliation SUBLAYER

*SuggestedRemedy*
　　Change to "Multi-Channel Reconciliation Sublayer"
　　The same fix needed on page 125, line 4/5

*Response*              *Response Status*  **C**
　　ACCEPT.

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

*Cl* **143**
*SC* **143.5**

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---

*Cl* **144**        *SC* **144**                    *P* **127**        *L* **1**            # 548

Kramer, Glen                                Broadcom

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

The following state diagrams in clause 144 were copied from Clause 77, but they are not applicable to 802.3ca:
Figure 144–17—Discovery Processing OLT Register state diagram
Figure 144–18—Discovery Processing OLT Final Registration state diagram
Figure 144–19—Discovery Processing ONU Registration state diagram
Figure 144–20—DISCOVERY Activation ONU state diagram (missing alignment with SYNC_PATTERN Validation ONU state diagram)
Figure 144–24—Gate Processing state diagram at OLT
Figure 144–28—Report Processing state diagram at ONU
Figure 144–29—Report Processing state diagram at OLT

MPCP cannot generate keep-alive REPORTs because without specific PLID envelope allocation, they cannot be transmitted. A different method is required.

Many of the constant, variable, function, and message definitions are missing

*SuggestedRemedy*

Replace the existing Clause 144 with the material provided in kramer_3ca_3_0918.pdf. Main changes:

1) DISCOVERY and SYNC_PATTERN MPCPDU handing are combined into a single state daigram in the OLT and in the ONU to guarantee the proper alignment (i.e., ONU responds to discovery only if it received 2 or 3 SYNC_PATTERN MPCPDUs)

2) Clarified sublayer interfaces and added interface-specific abbreviations for indication and request primitives (MCSI + MCSR, MCII + MCIR, MADI + MADR)

3) Introduced a better and more concise notation for processing messages withing the state diagrams

4) Added missing definitions.

5) Total number of state diagrams reduced from 14 to 10

6) Added allocations fro LLID values per editorial note on page 152

7) Cleaned up definitions of set access methods (IsEmty, Clear, RemoveHead, PeekHead).

some subclauses (mostly introductory text) are to be supplied at a later time.

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

ACCEPT IN PRINCIPLE.

Use kramer_3ca_3a_0918.pdf with changes at the meeting.

---

Insert editorial note for Duane to update all summary diagrams.

---

*Cl* **144**        *SC* **144**                    *P* **127**        *L* **1**            # 549

Kramer, Glen                                Broadcom

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

Clause 144 contains a lot of repetition and flow or material is confusing.

*SuggestedRemedy*

Organize the clause into separate areas (in this order):

1) General introduction of P2MP operations for readers familiar with Ethernet, but not with EPON.
2) Protocol-intependent operation (parsing and multiplexing)
3) Protocol-specific operatoions (currently two protocols: Myltipoint Control Protocol [MPCP] and Channel Control Protocol [CCP])

Adopt the clause outline as shown in kramer_3ca_3_0918.pdf.

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

ACCEPT.

---

*Cl* **144**        *SC* **144.1**                  *P* **128**        *L* **12**           # 587

Hajduczenia, Marek                          Charter Communicatio

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

Missing reference in red

*SuggestedRemedy*

Change "see LLID in <TBD, Clause 143>" to "see LLID in 143.2.1" - make sure the link is live

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

ACCEPT IN PRINCIPLE.

See comment #548

---

*Cl* **144**        *SC* **144.1.1**                *P* **128**        *L* **17**           # 588

Hajduczenia, Marek                          Charter Communicatio

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

Goals and objectives are not needed

*SuggestedRemedy*

Strike 144.1.1

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

ACCEPT.

---

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general                    *Cl* **144**              Page 37 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn                *SC* **144.1.1**          9/13/2018  5:42:29 PM
SORT ORDER: Clause, Subclause, page, line

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*Cl* **144**      *SC* **144.1.2**            *P* **128**      *L* **24**          # 589
Hajduczenia, Marek                    Charter Communicatio

*Comment Type* **E**        *Comment Status* **A**                    *bucket*
"Figure 144–2 depict" and should be "Figure 144–2 depicts"

*SuggestedRemedy*
Per comment

*Response*                *Response Status* **C**
ACCEPT.

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*Cl* **144**      *SC* **144.1.2**            *P* **128**      *L* **32**          # 590
Hajduczenia, Marek                    Charter Communicatio

*Comment Type* **E**        *Comment Status* **A**
"This clause also specifies a specific … " - a tad too specific :)

*SuggestedRemedy*
Change to "This clause also defines a specific"

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

See comment #548

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*Cl* **144**      *SC* **144.1.2**            *P* **128**      *L* **36**          # 591
Hajduczenia, Marek                    Charter Communicatio

*Comment Type* **E**        *Comment Status* **A**                    *bucket*
MPCP has been expanded before

*SuggestedRemedy*
Change "MultiPoint Control Protocol (MPCP)," to "MPCP"

*Response*                *Response Status* **C**
ACCEPT.

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*Cl* **144**      *SC* **144.2.3.4**          *P* **133**      *L* **25**          # 536
Wey, Jun Shan                        ZTE TX

*Comment Type* **TR**        *Comment Status* **A**
GLID definition (based on 143.2.1.4 in D1.2_diff) should be updated to clarify the
relationship between GLID and LLIDs.

*SuggestedRemedy*
See Supplement file wey_3ca_1_0918

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

See comment #548 for base changes. Replace text in 144.3.2.4 with

To assist in traffic management the Nx25G-EPON system supports consolidation of several
LLIDs into arbitrary groups using the Group Link ID (GLID). For example, all LLIDs for a
specific subscriber hosted on an ONU servicing numerous subscribers could be grouped
together into a single GLID; in another example all LLIDs supporting a specific traffic class
(e.g., best-effort traffic) on a multi-subscriber ONU could be grouped together. GLID values
are used only for the purposes of bandwidth granting by the OLT and reporting by the ONU.
The GLID report contains the sum of all queue lengths of member LLIDs from that ONU.
The bandwidth granted to a GLID is distributed among its member LLIDs. The method by
which the granted bandwidth is distributed among the member LLIDs is outside the scope
of this standard. The actual envelope transmission is identified by a PLID, an MLID, or a
ULID value, associated with a specific MAC instance that sourced the data (i.e., the LLID
field in the envelope headers may only contain PLID, MLID, or ULID, but never GLID).

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*Cl* **144**      *SC* **144.3**              *P* **132**      *L* **33**          # 513
Remein, Duane                        Huawei

*Comment Type* **E**        *Comment Status* **A**                    *bucket*
Use of Italics should be reserved for variables and not used for emphasis

*SuggestedRemedy*
Globally scour the draft for inappropriate use of italics and remove.

*Response*                *Response Status* **C**
ACCEPT.

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TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl* **144**          Page 38 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn          *SC* **144.3**          9/13/2018  5:42:29 PM
SORT ORDER: Clause, Subclause, page, line

*Cl* **144**     *SC* **144.3.2.3**          *P***136**        *L***48**          # 542
Kramer, Glen                              Broadcom

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

16-bit integer is not sufficient to hold RTT values in EQ anymore.

*SuggestedRemedy*

In the definitions of newRTT and RTT, change "TYPE: 16-bit unsigned integer" to "TYPE: 24-bit unsigned integer"

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

ACCEPT.

*Cl* **144**     *SC* **144.4.2.2**          *P***146**        *L***15**          # 543
Kramer, Glen                              Broadcom

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

SpIndex "may have values" is not specific enough, as it does not say that other valus are not permitted.

*SuggestedRemedy*

Replace the definition of SpIndex with the one below:
"This variable represents the index of the synchronization pattern announced by the OLT in the SYNC_PATTERN MPCPDU. The SpIndex variable takes values 0 or 1 in case when two synchronization patterns are used, or 0, 1, and 2, in case when three synchronization patterns are used. Details about individual synchronization pattern elements, their number, and meaning are covered in 142.2.2.2."

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

ACCEPT IN PRINCIPLE.

Replace the definition of SpIndex with the one below:
"This variable represents the index of the synchronization pattern announced by the OLT in the SYNC_PATTERN MPCPDU. The SpIndex variable takes values 0 or 1 in case when two synchronization patterns are used, or 0, 1, or 2, in case when three synchronization patterns are used. Details about individual synchronization pattern elements, their number, and meaning are covered in 142.2.2.2."

*Cl* **144**     *SC* **144.4.3**          *P***158**        *L***32**          # 539
Wey, Jun Shan                              ZTE TX

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

Clarification should be made to relate grant allocation to maximize the peak rate,

*SuggestedRemedy*

Insert new text as shown in Supplement file wey_3ca_2_0918

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

REJECT.

This comment was WITHDRAWN by the commenter.

*Cl* **144**     *SC* **144.4.4.1**          *P***168**        *L***3**          # 514
Remein, Duane                              Huawei

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

This statement is not clear: "When multiple channels are assigned, a transmission on each channel shall start at Grant Start Time and shall have the length as necessary to transmit all allocated envelopes together with the associated optical and FEC overhead."

*SuggestedRemedy*

Change from:
"When multiple channels are assigned, a transmission on each channel shall start at Grant Start Time and shall have the length as necessary to transmit all allocated envelopes together with the associated optical and FEC overhead." to read:
"When the bitmap indicates multiple channels are assigned, the transmission start time and duration are the same for all indicated channels as dictated by Grant Start Time and the sum of the EnvLength fields."

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

ACCEPT IN PRINCIPLE.

Change from:

"When multiple channels are assigned, a transmission on each channel shall start at Grant Start Time and shall have the length as necessary to transmit all allocated envelopes together with the associated optical and FEC overhead."

to read:

"When multiple channels are assigned in a single GATE MPCPDU, the transmission on each channel shall start at Grant Start Time and shall have the length as necessary to transmit all allocated envelopes (the sum of all EnvLength fields) together with the associated optical and FEC overhead."

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

*Cl* **144**
*SC* **144.4.4.1**

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*Cl* **144**      *SC* **144.4.4.4**          *P***172**      *L***31**          # 515

Remein, Duane                    Huawei

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

Is this Requirement within a requirement needed?  "The REGISTER MPCPDU is an
instantiation of the Generic MPCPDU and shall be as shown in
Figure 144–34 with details defined as follows:
a) DA. The destination address used shall be an individual MAC address.

*SuggestedRemedy*

Change:
"a) DA. The destination address used shall be an individual MAC address." to read:
"a) DA. The destination address used is an individual MAC address."

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

ACCEPT.

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*Cl* **144**      *SC* **Fig 144-3, 144-4**      *P***131**      *L*          # 533

Wey, Jun Shan                    ZTE TX

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

Figure 144-4 comes before Fig. 144-3

*SuggestedRemedy*

Reverse the figure numbers

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

ACCEPT.

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TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general          *Cl*  **144**          Page 40 of 40
COMMENT STATUS: D/dispatched  A/accepted  R/rejected     RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn          *SC*  **Fig 144-3, 144-4**          9/13/2018 5:42:29 PM
SORT ORDER: Clause, Subclause, page, line