

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

CI **FM** SC **FM** P2 L16 # 480
 Remein, Duane Futurewei Technologie
 Comment Type **E** Comment Status **D** bucket
 This is the only case of Point to Multipoint in the draft.
 SuggestedRemedy
 Replace with Point-to-multipoint.
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **1** SC **1.4.245a** P22 L33 # 481
 Remein, Duane Futurewei Technologie
 Comment Type **E** Comment Status **A**
 Surely there are other "unit of measurement of volume of information"
 SuggestedRemedy
 Change:
 "The unit of measurement of volume of information." to
 "A unit of information volume."
 Response Response Status **C**
 ACCEPT.

CI **45** SC **45.2.3** P38 L17 # 482
 Remein, Duane Futurewei Technologie
 Comment Type **ER** Comment Status **D** bucket
 The entry "45.2.1.45a" in Table 45-176 should be "45.2.3.45a" and a live link.
 SuggestedRemedy
 per comment
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **45** SC **45.2.3.8** P40 L4 # 483
 Remein, Duane Futurewei Technologie
 Comment Type **E** Comment Status **D** bucket
 IEEE Std 802.3cb-2018 changed table 45-182 Bit(s) from 3.9.15:3 to 3.9.15:4. This should be reflected in our draft.
 SuggestedRemedy
 Change the crossed out 3 to a crossed out 4 in the first row of table 45-182
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **45** SC **45.2.3.45a.2** P42 L45 # 485
 Remein, Duane Futurewei Technologie
 Comment Type **E** Comment Status **D** bucket
 "When bit this bit is set" is a bit overstated. Same error at pg 43 line 3 and 17.
 SuggestedRemedy
 Change to "When this bit is set"
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.
 Comment is against line 45, not 44. Fixed.

CI **45** SC **45.2.3.11ad** P40 L44 # 484
 Remein, Duane Futurewei Technologie
 Comment Type **TR** Comment Status **A**
 Not quite able to achieve 125 Gb/s just yet.
 SuggestedRemedy
 Change:
 "support the 125GBASE-PQ Tx only PCS" to:
 "support the 25GBASE-PQ Tx only PCS"
 Response Response Status **C**
 ACCEPT.

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Cl 56 SC 56.1.2 P47 L2 # 486
 Remein, Duane Futurewei Technologie

Comment Type TR Comment Status A

This statement is confusing at best "Each PCS and PMA channel operates at a 25.78125 GBd line rate in the downstream direction and a 25.78125 GBd or a 10.3125 GBd in the upstream direction."

SuggestedRemedy

Change to:
 "Each PCS and PMA channel in the downstream direction operates at a 25.78125 GBd line rate. A PCS and PMA channel in the upstream direction operates at either a 25.78125 GBd or a 10.3125 GBd line rate."

Response Response Status C

ACCEPT IN PRINCIPLE.

Since there is more than one PCS/PMA in upstream in 50/50G system, change to:
 "Each PCS and PMA channel in the downstream direction operates at a 25.78125 GBd line rate. Each PCS and PMA channel in the upstream direction operates at either a 25.78125 GBd or a 10.3125 GBd line rate."

Cl 56 SC 56.1.3 P49 L25 # 487
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D bucket

I believe Clause 141 defined more than one PMD.

SuggestedRemedy

Change
 "All these systems employ the PMD defined in" to
 "All these systems employ a PMD defined in"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 56 SC 56.1.3 P49 L35 # 488
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D bucket

There is a stray character (possibly an underlined space) at the end of this para.

SuggestedRemedy

Remove the stray character(s).

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 56 SC 56.1.3 P53 L1 # 489
 Remein, Duane Futurewei Technologie

Comment Type ER Comment Status D bucket

Table 56-4 is not clear with all the "XXXX" everywhere. Use the same insertion style that is used a clause 45 without the "XXXX"x. Note that this table is being inserted and therefore does not need any mark-up.

SuggestedRemedy

Remove all markup from table 56-4 (title and table proper).

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 141 SC 141.1.1 P54 L14 # 490
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D bucket

141.1.1 Terminology and conventions
 what of 142.1.1 Conventions, 143.3.3.1 Conventions, 143.3.4.1 Conventions and 144.1.6 Conventions?
 Should we have a convention convention? OR perhaps a convention for Conventions?

SuggestedRemedy

Change 141.1.1 to just "Terminology"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 141 SC 141.2.7 P58 L29 # 491
 Remein, Duane Futurewei Technologie

Comment Type T Comment Status A

What does "PMDs in the function transmitter launch power" mean in the parenthetical "a power budget is a characteristic of a link and depends on PMDs in the function transmitter launch power and receiver sensitivity"?

SuggestedRemedy

Change the parenthetical to read: "a power budget is a characteristic of a link and depends on the paired PMDs transmitter launch power and receiver sensitivity"

Response Response Status C

ACCEPT.

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Cl 141 SC 141.2.7 P58 L32 # 492
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 I do not see any "power budgets listed in Table 141-1 through Table 141-5."
 SuggestedRemedy
 change to read "power budgets listed in Table 141-8 through Table 141-9."
 Proposed Response Response Status Z
 REJECT.
 This comment was WITHDRAWN by the commenter.
 Reference is correct as is.

Cl 141 SC 141.2.7.1 P59 L20 # 493
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 I do not see any "medium power budgets as shown in Table 141-1 through Table 141-5"
 SuggestedRemedy
 Strike "as shown in Table 141-1 through Table 141-5"
 Proposed Response Response Status Z
 REJECT.
 This comment was WITHDRAWN by the commenter.
 There are 20-class power budgets shown in tables.

Cl 141 SC 141.2.7.2 P60 L20 # 494
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 I do not see any high power budgets as shown in Table 141-1 through Table 141-5"
 SuggestedRemedy
 Strike "as shown in Table 141-1 through Table 141-5"
 Proposed Response Response Status Z
 REJECT.
 This comment was WITHDRAWN by the commenter.
 There are 30-class power budgets shown in tables.

Cl 141 SC 141.3.1.1 P60 L50 # 615
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status A delay; PICS
 AI #1 Delay (variation) Constraints
 SuggestedRemedy
 Replace the Editor's note with the following.
 "Due to the nature of the Nx25G-EPON PMD delay variation within the PMD is expected to be very little (< ± 0.25 EQT)."
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 Replace the Editor's note with the following: "The Nx25G-EPON PMD delay variation within the PMD shall be less than 0.25 EQT."
 Add PICS

Cl 141 SC 141.3.1.2 P61 L7 # 495
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status R
 This is excessively wordy just to say we have a signaling rate of 10 or 25G; it is also incorrect (assuming 25/10 & 50/10 are included in Nx25G). "The PMA defined in 142.4 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 PMA defined in 142.4 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."
 SuggestedRemedy
 Change to "The PMA defined in 142.4 continuously sends the appropriate stream of bits to the PMD for transmission on the medium. A nominal signaling speed of 25.78125 GBd or 10.3125 GBd depending on the rate class of the PMD."
 Response Response Status C
 REJECT.
 Wordy != Bad. Text is technically correct as is.

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CI 141 SC 141.3.1.3 P61 L20 # 496
 Remein, Duane Futurewei Technologie

Comment Type ER Comment Status R

Also wordy and incorrect. "The PMD continuously sends a stream of bits to the PMA defined in 142.4 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 PMA defined in 142.4 at the nominal signaling speed of 10.3125 GBd in the case of 25/10G-EPON and 50/10G-EPON OLT PMDs."

SuggestedRemedy

Change to "The PMD continuously sends a stream of bits to the PMA defined in 142.4 corresponding to the signals received from the MDI, at the nominal signaling speed of 25.78125 GBd or 10.3125 GBd depending on the rate class of the PMD."

Response Response Status C

REJECT.

Wordy != Bad. Text is technically correct as is.

CI 141 SC 141.3.1.5 P61 L43 # 497
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D bucket

signal names should not cross a line as in "PMD_global_signal_detect". Make the signal name non-breaking.

SuggestedRemedy

per comment

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 141 SC 141.3.5.3 P63 L30 # 498
 Remein, Duane Futurewei Technologie

Comment Type T Comment Status A

We seem to have some duplicate redundancy "The value of the SIGNAL_DETECT parameter for Nx25G-EPON PMDs shall be generated according to the conditions defined in Table 141-10. The Signal Detect value definitions for Nx25G-EPON PMDs are shown in Table 141-10."

SuggestedRemedy

Strike "The Signal Detect value definitions for Nx25G-EPON PMDs are shown in Table 141-10."

Response Response Status C

ACCEPT.

CI 141 SC 141.5.2 P65 L36 # 433
 Johnson, John Broadcom

Comment Type T Comment Status A

Having an explicit TX spec for "Decision timing offset for transmitter and dispersion penalty" in Tables 141-13, 14, 17 and 18 is unnecessary. Clause 75 (10G-EPON) has this parameter in the TX tables, but more recent PMDs (100GBASE-LR4/ER4, 25GBASE-LR/ER) do not. They rely on the default value of +/- 0.05 UI that's included in the text of 52.9.10.4 which all of these clauses ultimately point to for TDP measurement. I don't think that the difference in between OLT TX (+/-0.05 UI) and ONU TX (+/-0.0625 UI) in 10G-EPON is significant enough to justify calling them out explicitly for Nx25G-EPON.

SuggestedRemedy

Delete the line for "Decision timing offset for transmitter and dispersion penalty" in Tables 141-13, 14, 17 and 18.

Response Response Status C

ACCEPT.

Wrong page, was 36, should be 65 (fixed)

CI 141 SC 141.5.2 P67 L1 # 627
 Kramer, Glen Broadcom

Comment Type TR Comment Status A

Signal Detect Threshold is measured in dBm, not GHz

SuggestedRemedy

In Tables 141-15 and 141-16, replace GHz with dBm in Units column

Response Response Status C

ACCEPT.

See comment #434

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Cl 141 SC 141.5.2 P67 L1 # 453
 Harstead, Ed Nokia

Comment Type TR Comment Status A UW1

In "Table 141–15—OLT Receive Characteristics, medium power class", there are 4 PHYs grouped together, which cover 10G upstream PHYs:

- 25/10GBASE-PQG-D2
- 50/10GBASE-PQG-D2
- 25/10GBASE-PQX-D2
- 50/10GBASE-PQX-D2

These include "G" and "X", but for "Channel wavelengths (range)" they all point to Table 75-6. Of course "Table 75–6—PR type OLT PMD receive characteristics" only specifies Wavelength (range) 1260 to 1280, the "G" variant.

Same observation for Table 141–16—OLT Receive Characteristics, high power class.

SuggestedRemedy

For 25G upstream PHYs, Table 141–15 indeed shows both "G" UW0 and "X" UW1 options. It appears to me that we need to explicitly specify in Table 141–15 an "X" UW1 wavelength for 10G.

Response Response Status C

ACCEPT IN PRINCIPLE.

Split the last column into two columns, a G column and an X column. Everywhere they will have common rows except for the Channel wavelengths (range), which will be split. I.e. the same as how the first two columns are handled. For "X" column, use the 1290 to 1310nm range.

Cl 141 SC 141.5.2 P67 L24 # 434
 Knittle, Curtis CableLabs

Comment Type TR Comment Status A

Missing parameter for Signal detect threshold, each channel (min), wrong unit

SuggestedRemedy

Replace TBD with -40, replace GHz with dBm

Response Response Status C

ACCEPT.

Cl 141 SC 141.5.2 P67 L28 # 435
 Knittle, Curtis CableLabs

Comment Type TR Comment Status A

Missing parameter for Receiver settling time (max)

SuggestedRemedy

Replace TBD with 800

Response Response Status C

ACCEPT.

Cl 141 SC 141.5.2 P67 L34 # 436
 Knittle, Curtis CableLabs

Comment Type TR Comment Status A

Missing parameter for Stressed eye J2 Jitter, each channel

SuggestedRemedy

Replace TBD w/ 0.3

Response Response Status C

ACCEPT.

Cl 141 SC 141.5.2 P67 L36 # 437
 Knittle, Curtis CableLabs

Comment Type TR Comment Status A

Missing parameter for Stressed eye J9 Jitter, each channel

SuggestedRemedy

Replace TBD w/ 0.47

Response Response Status C

ACCEPT.

Cl 141 SC 141.5.2 P68 L26 # 438
 Knittle, Curtis CableLabs

Comment Type TR Comment Status A

Missing parameter for Signal detect threshold, each channel (min), plus wrong unit

SuggestedRemedy

Replace TBD with -40, replace GHz with dBm

Response Response Status C

ACCEPT.

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Cl 141 SC 141.5.2 P68 L30 # 439
 Knittle, Curtis CableLabs
 Comment Type TR Comment Status A
 Missing parameter for Receiver settling time (max)
 SuggestedRemedy
 Replace TBD with 800
 Response Response Status C
 ACCEPT.

Cl 141 SC 141.5.2 P68 L35 # 440
 Knittle, Curtis CableLabs
 Comment Type TR Comment Status A
 Missing parameter for Stressed eye J2 Jitter, each channel
 SuggestedRemedy
 Replace each TBD w/ 0.3
 Response Response Status C
 ACCEPT.

Cl 141 SC 141.5.2 P68 L36 # 441
 Knittle, Curtis CableLabs
 Comment Type TR Comment Status A
 Missing parameter for Stressed eye J9 Jitter, each channel
 SuggestedRemedy
 Replace each TBD w/ 0.47
 Response Response Status C
 ACCEPT.

Cl 141 SC 141.6.1 P69 L15 # 499
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status A PICS
 Tables 141-17 & 18 are not referenced, This section seems to be lacking some text.
 SuggestedRemedy
 Add: "A medium power class Nx25G-EPON ONU PMD transmitter shall comply with the parameters shown in Table 141-17. A high power class Nx25G-EPON ONU PMD transmitter shall comply with the parameters shown in Table 141-18."
 Update PICS as needed.

Response Response Status C
 ACCEPT.

Cl 141 SC 141.6.2 P72 L29 # 442
 Knittle, Curtis CableLabs
 Comment Type TR Comment Status A
 Missing parameter for Detect threshold, each channel (min)
 SuggestedRemedy
 Replace TBD w/ -40
 Response Response Status C
 ACCEPT.

Cl 141 SC 141.6.2 P72 L35 # 443
 Knittle, Curtis CableLabs
 Comment Type TR Comment Status A
 Missing parameter for Stressed eye J2 Jitter, each channel
 SuggestedRemedy
 Replace TBD w/ 0.3
 Response Response Status C
 ACCEPT.

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Cl 141 SC 141.6.2 P72 L36 # 444
 Knittle, Curtis CableLabs
 Comment Type **TR** Comment Status **A**
 Missing parameter for Stressed eye J9 Jitter, each channel
 SuggestedRemedy
 Replace TBD w/ 0.47
 Response Response Status **C**
 ACCEPT.

Cl 141 SC 141.6.2 P73 L23 # 445
 Knittle, Curtis CableLabs
 Comment Type **TR** Comment Status **A**
 Missing parameter for Detect threshold, each channel (min)
 SuggestedRemedy
 Replace TBD w/ -40
 Response Response Status **C**
 ACCEPT.

Cl 141 SC 141.6.2 P73 L30 # 446
 Knittle, Curtis CableLabs
 Comment Type **TR** Comment Status **A**
 Missing parameter for Stressed eye J2 Jitter, each channel
 SuggestedRemedy
 Replace TBD w/ 0.3
 Response Response Status **C**
 ACCEPT.

Cl 141 SC 141.6.2 P73 L31 # 447
 Knittle, Curtis CableLabs
 Comment Type **TR** Comment Status **A**
 Missing parameter for Stressed eye J9 Jitter,e each channel
 SuggestedRemedy
 Replace TBD w/ 0.47
 Response Response Status **C**
 ACCEPT.

Cl 141 SC 141.7 P74 L4 # 431
 Hajduczenia, Marek Charter Communicatio
 Comment Type **T** Comment Status **A**
 A "should" statement that is not intended to be an optional requirement: " ... alternative verification methods should ensure adequate correlation ..."
 SuggestedRemedy
 Change to read "alternative verification methods need to ensure adequate correlation"
 Response Response Status **C**
 ACCEPT.

Cl 141 SC 141.7.2 P74 L16 # 500
 Remein, Duane Futurewei Technologie
 Comment Type **T** Comment Status **R**
 Referenced Table 88-11 lists "or valid 100GBASE-R signal" as an acceptable test pattern for use in several measurements. This is inappropriate for Nx25G-EPON.
 SuggestedRemedy
 Add to the end of the paragraph "A valid Nx25G-EPON signal may be used in any test where Table 88-11 indicates a valid 100GBASE-R signal may be used."
 Response Response Status **C**
 REJECT.
 The text is correct as it is, since this subclause describes just the PMD test, not a system-level test.

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Cl 141 SC 141.7.10 P75 L46 # 646
 Powell, William Nokia
 Comment Type T Comment Status A PICS, Receive sensitivity
 Receiver Sensitivity
 Current Section 141.7.10 only contains "TBD"
 SuggestedRemedy
 (Ref. powell_3ca_1_0319)
 Replace contents of 141.7.10 with:
 "Receiver sensitivity is defined for test patterns in 75.7.3 (10G) and 141.7.2 (25G), and an ideal input signal quality with the specified extinction ratio. The measurement procedure is described in 52.9.8 for 10 Gb/s PHYs and 88.8.9 for 25 Gb/s PHYs. The sensitivity shall be met for the bit error ratio defined in Table 141-15, Table 141-16, Table 141-19, or 141-20 as appropriate."
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 "Receiver sensitivity is defined for test patterns in 75.7.3 (10G) and 141.7.2 (25G). The test signal is required to have negligible impairments such as intersymbol interference (ISI), rise/fall times, jitter, and RIN. The measurement procedure is described in 52.9.8 for 10 Gb/s PHYs and 88.8.9 for 25 Gb/s PHYs. The sensitivity shall be met for the bit error ratio defined in Table 141-15, Table 141-16, Table 141-19, or Table 141-20 as appropriate."
 Update PICS

Cl 141 SC 141.7.10 P75 L48 # 454
 Umeda, Daisuke Sumitomo
 Comment Type TR Comment Status A PICS, Receive sensitivity
 Referred and modified 88.8.9 "Receiver sensitivity" on 100GBASE-LR4/ER4 and 114.7.9 "Receiver sensitivity" on 100GBASE-LR4/ER4. The modification is VECP = 0.5 dB for 25 Gb/s PHYs
 SuggestedRemedy
 Use the following definition.
 141.7.10 Receiver sensitivity
 Receiver sensitivity, which is defined for an ideal input signal for 10 Gb/s PHYs and an input signal with VECP = 0.5 dB for 25 Gb/s PHYs, is informative and compliance is not required. If measured, the test signal should have negligible impairments such as intersymbol interference (ISI), rise/fall times, jitter and RIN. Instead, the normative is stressed receiver sensitivity.
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 See comment #646

Cl 141 SC 141.7.11 P L # 455
 Umeda, Daisuke Sumitomo
 Comment Type TR Comment Status A ed receiver conformance test
 Referred and modified 88.8.10 "Stressed receiver sensitivity" on 100GBASE-LR4/ER4. The quality of reference transmitter is defined based on TDP in Figure 87-4. The recent standard of 25GBASE-LR/ER (114.7.10) uses the definition based on TDEC in Figure 95-4. But there's not enough correlation data between TDP and TDEC in the wide ER range, so I propose the reference transmitter based on TDP for 802.3ca.
 SuggestedRemedy
 Use the following definition.
 141.7.11 Stressed receiver sensitivity
 Stressed receiver sensitivity shall be within the limits given in Table 141-15, Table 141-16, Table 141-19 and Table 141-20 if measured using the method defined in 87.8.11 with the following exceptions:
 a) Added sinusoidal jitter is as specified in Table 88-13 for 25 Gb/s PHYs.
 b) The stressed eye J2 Jitter, stressed eye J9 Jitter, and vertical eye closure penalty are as given in Table 141-15, Table 141-16, Table 141-19 and Table 141-20.
 c) The test pattern is as given in Table 88-11 for 25 Gb/s PHYs, with the exception of Pattern 5.
 d) The reference receiver used to verify the conformance test signal is required to have the bandwidth given in 88.8.8 for 25 Gb/s PHYs.
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 See comment #647

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Cl 141 SC 141.7.11 P75 L50 # 647
Powell, William Nokia

Comment Type T Comment Status A ed receiver conformance test

Stressed RX conformance
The current 141.7.11 only contains "TBD"

SuggestedRemedy

(Ref. powell_3ca_1_0319)
Replace contents of 141.7.11 with:
"Compliance with stressed receiver sensitivity is mandatory for the following PMDs:
25GBASE-PQG-D2, 50/25GBASE-PQG-D2, 25GBASE-PQX-D2, 50/25GBASE-PQX-D2,
50/25GBASE-PQG-D2, 50GBASE-PQG-D2, 50/25GBASE-PQX-D2, 50GBASE-PQX-D2,
25/10GBASE-PQG-D2, 50/10GBASE-PQG-D2, 25/10GBASE-PQX-D2, 50/10GBASE-PQX-
D2, 25GBASE-PQG-D3, 0/25GBASE-PQG-D3, 25GBASE-PQX-D3, 50/25GBASE-PQX-
D3, 50/25GBASE-PQG-D3, 50GBASE-PQG-D3, 50/25GBASE-PQX-D3, 50GBASE-PQX-
D3, 25/10GBASE-PQG-D3, 50/10GBASE-PQG-D3, 25/10GBASE-PQX-D3, and
50/10GBASE-PQX-D3. The stressed receiver conformance test is intended to screen
against receivers with poor frequency response or timing characteristics that could cause
errors when combined with a distorted but compliant signal. To be compliant with stressed
receiver sensitivity, the receiver shall meet the specified bit error ratio at the power level
and signal quality defined in Table 141-15, Table 141-16, Table 141-19, or 141-20 as
appropriate, according to the measurement procedures of 52.9.9 for 10 Gb/s PHYs and
88.8.10 for 25 Gb/s PHYs."

Response Response Status C

ACCEPT IN PRINCIPLE.

Use the following text:

Compliance with stressed receiver sensitivity is mandatory for PMDs listed in Table 141-7.
The stressed receiver conformance test is intended to screen against receivers with poor
frequency response or timing characteristics that could cause errors when combined with a
distorted but compliant signal. To be compliant with stressed receiver sensitivity, the
receiver shall meet the specified bit error ratio at the power level and signal quality defined
in Table 141-15, Table 141-16, Table 141-19, or 141-20 as appropriate, according to the
measurement procedures of 52.9.9 for 10 Gb/s PHYs and 88.8.10 for 25 Gb/s PHYs.

Update PICS

Cl 141 SC 141.7.13 P76 L13 # 648
Powell, William Nokia

Comment Type T Comment Status A

Laser timing parameters
Current text reads:
- Ton is defined in 141.7.13.1 and has the value of less than or equal to 128 ns (defined in
Table 141-17 and Table 141-18).
- A method for measuring Treceiver_settling is illustrated in 141.7.13.2 (informative) and
has a value of less than {TBD} ns (defined in Table 141-15 and Table 141-16).
- TCDR is defined in {TBD, Clause 142} and has the value of less than {TBD} ns.
- Toff is defined in 141.7.13.1 and has the value of less than or equal to 128 ns (defined in
Table 141-17 and Table 141-18).

SuggestedRemedy

(Ref. powell_3ca_1_0319)
Eliminate bullet points 2 & 3 that include the TBDs. These items will be covered in other
subclauses and comments to this draft.

Thus, final text for 141.7.13 should read:

- Ton is defined in 141.7.13.1 and has the value of less than or equal to 128 ns (defined in
Table 141-17 and Table 141-18).
- Toff is defined in 141.7.13.1 and has the value of less than or equal to 128 ns (defined in
Table 141-17 and Table 141-18).

Response Response Status C

ACCEPT.

Cl 141 SC 141.7.13.1 P76 L31 # 501
Remein, Duane Futurewei Technologie

Comment Type T Comment Status A

Why is any valid 256B/257B symbol allow for Toff measurements when we have a defined
EBD?

SuggestedRemedy

Change "The data transmitted may be any valid 256B/257B symbols." to "The data
transmitted is the EBD257 as defined in 142.3.5.1."

Response Response Status C

ACCEPT IN PRINCIPLE.

Change

"The data transmitted may be any valid 256B/257B symbols."

to

"The data transmitted may be any of the patterns listed in Table 88-10."

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Cl 141 SC 141.7.14 P77 L1 # 623
 Kramer, Glen Broadcom
 Comment Type T Comment Status A 141.7.14
 Action item to update Figure 141-3 (remove Grant Length signal as it doesn't match the definition of grant in .3ca).
 SuggestedRemedy
 Update the figure and the text in 141.7.14.1 as shown in kramer_3ca_1_0319.pdf
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 Updated subclause (was 141.7.13.1, should be 141.7.14)
 Update the figure and the text in 141.7.14.1 as shown in kramer_3ca_1_0319.pdf. Also, use T_{rx_settling} consistently throughout the draft (text and drawings).

Cl 141 SC 141.7.14.1 P77 L39 # 649
 Powell, William Nokia
 Comment Type T Comment Status A 141.7.14
 RX settling time measurement
 Current text reads:
 "Treceiver_settling is denoted as the elapsed time beginning from the moment that the optical power in the receiver at TP7 reaches the conditions specified in 141.7.11 and ending at the moment that the electrical signal after the PMD at TP8[i] reaches within 15 % of its steady state average power, jitter (see {TBD}).
 Treceiver_settling is presented in Figure <TBD>....."
 SuggestedRemedy
 (Ref. powell_3ca_1_0319)
 Change the text at the end of the first sentence to read:
 ...the electrical signal after the PMD at TP8[i] reaches within 15 % of its "steady state average power and jitter (see Table 141-15 and Table 141-16)."
 Change the second sentence to read:
 Treceiver_settling is presented in Figure 141-3.
 [the new Fig. 141-3 from Glen]
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 See comment #623

Cl 141 SC 141.7.14.2 P79 L37 # 650
 Powell, William Nokia
 Comment Type T Comment Status A
 Current text in this line has a TBD.
 SuggestedRemedy
 Replace "TBD" with "Table 141-17 and Table 141-18."
 Response Response Status C
 ACCEPT.

Cl 141 SC 141.7.14.2 P79 L42 # 432
 Hajduczenia, Marek Charter Communicatio
 Comment Type T Comment Status A
 A "should" statement that is not intended to be an optional requirement: " ... Conformance should be assured for an optical signal at TP7 ..."
 SuggestedRemedy
 Change to read "Conformance needs to be assured for an optical signal at TP7"
 Response Response Status C
 ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 141 SC 141.7.15 P79 L53 # 655
 Powell, William Nokia
 Comment Type TR Comment Status D postdeadline

There is no home for Tcdr or definition in D1.5

SuggestedRemedy

Ref. powell_3ca_2_0319
 Insert a new sub-clause 141.7.15 with the following text:
 141.4.15 TCDR measurement

141.4.15.1 Definitions CDR lock time (denoted TCDR) is defined as a time interval required by the receiver to acquire phase lock on the incoming data stream. TCDR is measured as the time elapsed from the moment when the electrical signal after the PMD at TP8, as illustrated in Figure 141-3, reaches the conditions specified in 141.7.14 for receiver settling time to the moment when the signal phase is recovered and jitter is maintained for a network with BER of no worse than 10⁻².

A PMA instantiated in an OLT becomes synchronized at the bit level within 400 ns (TCDR) after the appearance of a valid synchronization pattern (as defined in 142.1.3) at TP8.

141.15.2 Test specification
 The test of the OLT PMA receiver TCDR time assumes that there is an optical PMD transmitter at the ONU with well known Ton time as defined in 141.7.13, and an optical PMD receiver at the OLT with well-known Treceiver_settling time as defined in 141.7.14. After Ton + Treceiver_settling time, the parameters at TP8 reach within 15% of their steady state values, measure TCDR as the time from the TX_ENABLE assertion, minus the known Ton + Treceiver_settling time, to the time the electrical signal at the output of the receiving PMA reaches up to the phase difference from the input signal of the transmitting PMA assuring BER of 10⁻², and maintaining its jitter specifications. The signals transmitted throughout this test are the SP1 and SP2 patterns as illustrated in Figure 142-3, or the SP1, SP2, & SP3 patterns as illustrated in Figure 142-4.

Proposed Response REJECT. Response Status Z

This comment was WITHDRAWN by the commenter.

Cl 141 SC 141.7.15 P79 L53 # 656
 Powell, William Nokia
 Comment Type T Comment Status D postdeadline

There is no home for Tcdr or definition in D1.5

SuggestedRemedy

Ref. powell_3ca_2_0319
 Insert a new sub-clause 141.7.15 with the following text:
 141.4.15 TCDR measurement 141.4.15.1 Definitions CDR lock time (denoted TCDR) is defined as a time interval required by the receiver to acquire phase lock on the incoming data stream. TCDR is measured as the time elapsed from the moment when the electrical signal after the PMD at TP8, as illustrated in Figure 141-3, reaches the conditions specified in 141.7.14 for receiver settling time to the moment when the signal phase is recovered and jitter is maintained for a network with BER of no worse than 10⁻². A PMA instantiated in an OLT becomes synchronized at the bit level within 400 ns (TCDR) after the appearance of a valid synchronization pattern (as defined in 142.1.3) at TP8. 141.15.2 Test specification The test of the OLT PMA receiver TCDR time assumes that there is an optical PMD transmitter at the ONU with well known Ton time as defined in 141.7.13, and an optical PMD receiver at the OLT with well-known Treceiver_settling time as defined in 141.7.14. After Ton + Treceiver_settling time, the parameters at TP8 reach within 15% of their steady state values, measure TCDR as the time from the TX_ENABLE assertion, minus the known Ton + Treceiver_settling time, to the time the electrical signal at the output of the receiving PMA reaches up to the phase difference from the input signal of the transmitting PMA assuring BER of 10⁻², and maintaining its jitter specifications. The signals transmitted throughout this test are the SP1 and SP2 patterns as illustrated in Figure 142-3, or the SP1, SP2, & SP3 patterns as illustrated in Figure 142-4.

Proposed Response PROPOSED ACCEPT IN PRINCIPLE. Response Status W

Use the text per suggested remedy, replacing all funny characters with line feed, and
 ===== BILL & GLEN to have a chat about definitions.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 141 SC 141.9.1 P81 L2 # 502
Remein, Duane Futurewei Technologie

Comment Type T Comment Status A

Should "IEC 61280-4-2:2000" cross the line? Probably not.

SuggestedRemedy

Make the reference non-breaking.

Response Response Status C

ACCEPT.

Likely an editorial comment, no?

Cl 141 SC 141.9.3 P81 L34 # 503
Remein, Duane Futurewei Technologie

Comment Type TR Comment Status A

"channel insertion loss specified in T able 141-21" but Table 141-21 does not describe insertion loss.

SuggestedRemedy

Change ref to Table 141-1 through 141-5

Response Response Status C

ACCEPT IN PRINCIPLE.

Change "Table 141-21" to "Table 141-1 through Table 141-5". Make links live.

Cl 141 SC 141.10 P82 L1 # 422
Hajduczenia, Marek Charter Communicatio

Comment Type TR Comment Status A

PICS needed and missing

SuggestedRemedy

Use hajduczenia_3ca_1_0319.pdf

Response Response Status C

ACCEPT.

Cl 142 SC 142.1.1.3 P86 L1 # 504
Remein, Duane Futurewei Technologie

Comment Type T Comment Status D

Figure 142-2— needs update

SuggestedRemedy

See file remain_3ca_3_0319.pdf (or remain_3ca_0319 PCS FBD.vcs). In draft globally replace "Parity staging buffer" (1x Fig 142-6) and "ParityStagingBuffer" (9x) with "TxParBuf" using proper formatting.

Proposed Response Response Status W

PROPOSED ACCEPT.

==== GLEN to suggest updates to figures

Change

"The LDPC encoder in Figure 142-6 places the M-bit FEC parity bits into the ParityStagingBuffer for use by"

to

"The LDPC encoder in Figure 142-6 places the M-bit FEC parity bits into the parity staging buffer (<i>TxParBuf</i>) for use by"

Afterwards, globally replace "Parity staging buffer" (Fig 142-6) and "ParityStagingBuffer" with "TxParBuf" using proper formatting.

Cl 142 SC 142.1.1.4 P86 L42 # 628
Kramer, Glen Broadcom

Comment Type T Comment Status A

Action item from Long Beach: "Subtraction for rollover (144.3.6.8, Page:172, Line: 52)"

I am not entirely convinced we need any explanation for subtraction. The subtraction operation is straightforward.

SuggestedRemedy

The explanation text is added to 142.1.1.4 (see kramer_3ca_6_0319.pdf). Discuss at the meeting if the standard needs to explain such fundamental concepts.

Response Response Status C

ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 142 SC 142.1.1.4 P87 L39 # 505
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status A
 Stray period between parenthesis in Table 142-1 for "Indicates precedence or a set of function arguments"
 SuggestedRemedy
 Strike the stray period
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 Likely an editorial comment, no?
 Change (.) to (...)

Cl 142 SC 142.1.1.4 P87 L43 # 506
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status A
 Symbol for "is a member of" and ""is not a member of"" are not included in Table 142-1 but is used in Figure 144-5
 SuggestedRemedy
 Add both to the bottom of the table.
 Response Response Status C
 ACCEPT.

Cl 142 SC 142.1.2 P88 L15 # 616
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status A Delay
 AI #16 Delay Constraints
 SuggestedRemedy
 Replace the Editor's note with the following.
 Due to the nature of the Nx25G-EPON PCS and PMA the combined delay variation within these sublayers is expected to be very little (< ± one EQT for 25 Gbps and < ± two EQT for 10 Gbps).
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 Replace the Editor's note with the following:

The combined delay variation through the Nx25G-EPON PCS and PMA is expected to be less than four EQTs for channels operating at 25.78125 GBd and less than 10 EQTs for channels operating at 10.3125 GBd.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 142 SC 142.1.3 P88 L24 # 507
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status A
 Why is "(SP)" used to explain "FEC-unprotected area"? There is no lone "SP" in the figure.

SuggestedRemedy
 Strike the wayward "(SP)"

Response Response Status C
 ACCEPT IN PRINCIPLE.

Change
 synchronization pattern (SP) zones.

To
 synchronization pattern zones.

Change

The upstream burst begins with a FEC-unprotected area (SP), comprising several explicit zones, each playing a separate role: SP1 zone, optimized for laser on (Ton) and Automatic Gain Control (AGC, Tsettling); SP2 zone, optimized for Clock and Data Recovery (CDR, TCDR); and SP3 zone, optimized for the start-of-burst delimiter (SBD) pattern. Each SP element is a multiple of 257 bits, aligning with the PCS (defined in 142.2 and 142.3) line code of 256B/257B.

to

The upstream burst begins with a synchronization pattern, which is not FEC protected. The synchronization pattern is comprised of: SP1 zone, optimized for laser on (Ton) and Automatic Gain Control (AGC, Tsettling); SP2 zone, optimized for Clock and Data Recovery (CDR, TCDR); and SP3 zone, optimized for the start-of-burst delimiter (SBD) pattern. Each SP element is a multiple of 257 bits, aligning with the PCS (defined in 142.2 and 142.3) line code of 256B/257B.

Cl 142 SC 142.1.3 P88 L27 # 508
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D bucket
 Are these zones or elements? "Each SP element ... "

SuggestedRemedy
 Change "Each SP element" to "Each zone"

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Change "Each SP element" to "Each SP zone"

Cl 142 SC 142.1.3 P88 L34 # 509
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D bucket
 Remove the editor's note. Discovery operations are well addressed in the draft and no additional details are needed in this overview section.

SuggestedRemedy
 per comment

Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 142 SC 142.1.3.1 P89 L35 # 510
 Remein, Duane Futurewei Technologie

Comment Type TR Comment Status A
 What is "Tsetting"? The figure uses "Tsettling" while in 141.7.14.1 we use "Treceiver_settling". We should be consistent.

SuggestedRemedy
 Use Tsettling throughout the draft (subscripted).

Response Response Status C
 ACCEPT IN PRINCIPLE.

Use T_{rx_settling} throughout the draft (subscripted).

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 142 SC 142.2.1 P90 L48 # 511
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 The following statement is redundant with the last ending sentence of the para preceding just before this one. "The PCS bit transmission order is illustrated in Figure 142-5."
 SuggestedRemedy
 Strike and remove the redundant statement.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 142 SC 142.2.4 P92 L35 # 512
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D FEC delay
 We should enforce a constant delay in the FEC Encoder, regardless of the size of the encoded FEC CW (i.e., even when the CW is shortened).
 SuggestedRemedy
 Add the following: "The FEC encoder shall have a constant delay for each FEC codeword including shortened codewords."
 Add requirement to PICS.
 Proposed Response Response Status Z
 REJECT.

This comment was WITHDRAWN by the commenter.

While reasonable, I fail to see how a simple word statement achieves just that. Also, it is not clear what the advantage of this proposal is for say, adding delay at the end of the burst for shortened codewords.

Cl 142 SC 142.2.4.2 P95 L25 # 641
 Kramer, Glen Broadcom
 Comment Type T Comment Status A
 QC-LDPC abbreviation is not defined
 SuggestedRemedy
 add to 1.5:
 QC_LDPC quasi-cyclic low-density parity code
 Throughout the draft, replace "LDPC" with "QC-LDPC"
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 add to 1.5:
 QC-LDPC quasi-cyclic low-density parity code
 Throughout the draft, replace "LDPC" with "QC-LDPC"

Cl 142 SC 142.2.4.2 P95 L53 # 513
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D bucket
 Is the one double quoted u" (and p" on pg 96) correct?
 SuggestedRemedy
 Change to double prime (pg/ln: 95/52, 96/34, 96/35, 95/36, 96/42 (x2))
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 142 SC 142.2.4.2 P96 L1 # 514
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status A
 Figure 142-6—FEC encoder we should id what's in the FEC Encoder and what is in other SD's
 SuggestedRemedy
 Change figure to match remain_3ca_5_0319 (or remain_3ca_5_0319.Fig 142-6.vsd, red highlight can be omitted).
 Make the same modifications to Figure 142A-1.
 Response Response Status C
 ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 142 SC 142.2.5.1 P101 L38 # 640
 Kramer, Glen Broadcom
 Comment Type T Comment Status A 142.2.5.1
 There is nothing undefined in the definitions of FEC_PARITY_SIZE and FEC_PAYLOAD_SIZE
 SuggestedRemedy
 Replace "{10 TBD}" with "10"
 Replace "{56 TBD}" with "56"
 For both definitions, replace "Unit: 257 bits" with "Unit: 257-bit block"
 Response Response Status C
 ACCEPT.

Cl 142 SC 142.2.5.1 P101 L41 # 515
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status A 142.2.5.1
 Value for FEC_PARITY_SIZE (10), and FEC_PAYLOAD_SIZE (56) need not be marked TBD
 SuggestedRemedy
 Strike offensive red TBD and curly braces in two places.
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 See comment #640

Cl 142 SC 142.2.5.1 P101 L42 # 637
 Kramer, Glen Broadcom
 Comment Type TR Comment Status A 142.2.5.1
 TBDs in the definitions of FEC_PARITY_SIZE and FEC_PAYLOAD_SIZE constants.
 SuggestedRemedy
 The provided values are correct. Remove braces {} and TBDs.
 Replace "Unit: 257 bits" with "Unit: 257-bit block"
 Response Response Status C
 ACCEPT.
 See comment #640

Cl 142 SC 142.2.5.1 P101 L51 # 639
 Kramer, Glen Broadcom
 Comment Type TR Comment Status A IBI
 Action item to update definition of IBI (missing value)
 SuggestedRemedy
 Use the following definition:
 IBI258
 Type: 258-bit block
 Description: The <i>IBI258</i> constant holds the value of the inter-burst idle pattern.
 Value: 0x0-(0A)₃₂
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 Per comment + update IBI in Figure 142-11/12 to IBI258

Cl 142 SC 142.2.5.1 P102 L2 # 456
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status A IBI
 The description "The IBI constant holds the value of the inter burst idle pattern." is incorrect as the inter burst idle pattern is only 257 bits long. (Note all other instance put a dash between inter and burst).
 Also IBI value: need not be TBD
 SuggestedRemedy
 Change
 "Description: The IBI constant holds the value of the inter burst idle pattern." to read
 "Description: The IBI constant holds the value of the inter-burst idle pattern with a prepended MSB indicating the lower 257 bits are not scrambled."
 Change Value to "0x0-(0A)32" with 32 subscripted (binary 00 concatenated with 32 x 0x0a)
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 See comment #639

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 142 SC 142.2.5.1 P102 L4 # 457
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D

In most of the constant/variable/... definitions where we have "See x.y.x" there is no ending period. Technically I would classify these statements as sentences and they therefore should have a period. I notice in the current standard both forms are supported.

SuggestedRemedy

Throughout the draft add the ending period in each case. If staff object change wording to "This variable is defined in x.y.x." where x.y.x is the reefered clause.

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

Staff does remove the ending periods in these statements.

Cl 142 SC 142.2.5.2 P102 L33 # 635
 Kramer, Glen Broadcom

Comment Type T Comment Status A ClkOut

ClkOut and ClkXfer are defined in terms of PMD output rate. This is not correct as the relationship should be the opposite: The PMD output rate is driven by the PMA clock.

Also, missing text on ONU loop-timing and the definitions of PMA transmit clock.

SuggestedRemedy

Modify definitions of ClkOut and ClkXfer in PCS and add missing text to the PMA subclause as shown in kramer_3ca_10_0319.pdf.

Response Response Status C

ACCEPT.

Cl 142 SC 142.2.5.2 P102 L34 # 458
 Remein, Duane Futurewei Technologie

Comment Type TR Comment Status A ClkOut

It would be good to ensure ClkOut for each channel is phase aligned.

SuggestedRemedy

Add to the description of ClkOut "in PHYs supporting multiple channels the ClkOut for each PCS instance is phase aligned.

Response Response Status C

ACCEPT IN PRINCIPLE.

See comment #635

Cl 142 SC 142.2.5.2 P102 L43 # 459
 Remein, Duane Futurewei Technologie

Comment Type TR Comment Status A

"... the MCRS Input Process ..." really? I think not. Same issue: pg 103 line 43, and 47

SuggestedRemedy

Change MCRS to PCS

Response Response Status C

ACCEPT.

Cl 142 SC 142.2.5.2 P103 L7 # 460
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D bucket

The following variables should be italicized.
 Pg 103 line 7 "TxFifo[]"
 Pg 103 line 11 "ParityLeft"
 Pg 103 line 16 "PayloadLeft"

SuggestedRemedy

per comment

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 142 SC 142.2.5.2 P103 L34 # 430
 Hajduczenia, Marek Charter Communicatio

Comment Type T Comment Status A

A "should" statement that is not intended to be an optional requirement: "... from the array should be sent to the TxFifo"

SuggestedRemedy

Change to read "from the array is sent to the TxFifo"

Response Response Status C

ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 142 SC 142.2.5.3 P104 L36 # 461
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 Missing articles.
 SuggestedRemedy
 Change
 "data received from xMII" to
 "data received from the xMII"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 142 SC 142.2.5.3 P104 L44 # 624
 Kramer, Glen Broadcom
 Comment Type T Comment Status A
 Scramble() and Descramble() functions are not defined symatrically. Descramble takes a single 66b block and descrambles it. Scramble() takes an array of 66b blocks and scrambles 4 blocks at once.
 Showing both functions operating on 66b is clearer and also would make it consistent with how these functions are defined in C49.
 SuggestedRemedy
 1) In Figure 142-10, replace
 xBuffer[3:0] <= Scramble(xBuffer[3:0])
 with
 xBuffer[0] <= Scramble(xBuffer[0])
 xBuffer[1] <= Scramble(xBuffer[1])
 xBuffer[2] <= Scramble(xBuffer[2])
 xBuffer[3] <= Scramble(xBuffer[3])
 2) Use the following definition of Scramble (symmetric to Descramble):
 Scramble(blk)
 Description: This function accepts one 66-bit block <i>blk</i> and performs the scrambling operation on the 64-bit payload of the block, as described in 49.2.6. The returned value is a scrambled 66-bit block.
 Response Response Status C
 ACCEPT.

Cl 142 SC 142.2.5.4.1 P106 L1 # 652
 Kramer, Glen Broadcom
 Comment Type TR Comment Status A postdeadline
 Draft 1.4 added the scrambler initialization function ResetScrambler(), but it only showed it for the receiving side. The same function should be applied to the transmitting side
 SuggestedRemedy
 1) Insert text "ResetScrambler()" to state RESET_XBUF in Fig 142-12.
 2) Move definition of ResetScrambler() function from 142.3.5.3 to 142.2.5.3
 3) Replace the body of ResetScrambler() function definition in 142.3.5.3 with a reference to 142.2.5.3
 Response Response Status C
 ACCEPT IN PRINCIPLE.

1) Insert text "ResetScrambler()" to state RESET_XBUF in Fig 142-10.
 2) Copy definition of ResetScrambler() function from 142.3.5.3 to 142.2.5.3
 3) Replace the body of ResetScrambler() function definition in 142.3.5.3 with a reference to 142.2.5.3

Cl 142 SC 142.2.5.4.1 P106 L20 # 644
 Kramer, Glen Broadcom
 Comment Type TR Comment Status A
 In state diagram 142-10, the following transition has ambiguous precedence or operations:
 TxNext = RATE_ADJ_EQ OR
 TxNext = IBI_EQ AND
 xIndex = 0
 SuggestedRemedy
 Cnage the transition to the following:
 TxNext = RATE_ADJ_EQ OR
 (TxNext = IBI_EQ AND
 xIndex = 0)
 Response Response Status C
 ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 142 SC 142.2.5.4.3 P105 L34 # 462
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D bucket
 True or true (we are again using both). 30 instances of true 6 of True. Same if true for false/False (but only one False).
 SuggestedRemedy
 Pick one and be consistent.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Use "true" and "false" when in the middle of the sentence.

Cl 142 SC 142.2.5.4.3 P105 L36 # 463
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 Grammar
 SuggestedRemedy
 Change:
 "and data is being sent towards the PMA for transmission" to
 "and the data is sent towards the PMA for transmission"
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Change:
 "and data is being sent towards the PMA for transmission" to
 "and data is sent towards the PMA for transmission"

Cl 142 SC 142.3 P105 L48 # 464
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 Unclosed parenthetical
 SuggestedRemedy
 Change
 "(25/25G-EPON, 50/25G-EPON, and 50/50G-EPON)" to
 "(25/25G-EPON, 50/25G-EPON, and 50/50G-EPON)"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 142 SC 142.3.1 P106 L53 # 465
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D FEC delay
 The FEC decoder should enforce a constant delay (i.e., same delay for shortened CWs ad for full length CWs)
 SuggestedRemedy
 Add the following: "The FEC decoder shall have a constant delay for each FEC codeword including shortened codewords."
 Add requirement to PICS.
 Proposed Response Response Status W
 PROPOSED REJECT.

While reasonable, I fail to see how a simple word statement achieves just that. Also, it is not clear what the advantage of this proposal is for say, adding delay at the end of the burst for shortened codewords.
 ===== GLEN and DUANE to work it out.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 142 SC 142.3.5.2 P111 L18 # 469
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status A
 This description of PayloadLeft is a bit misleading, it has nothing to do with the FEC CW _reaching_ it's max length.
 SuggestedRemedy
 Change:
 "This variable holds the number of EQs remaining until the FEC codeword payload reaches the maximum allowed length." to
 "This variable holds the number of EQs remaining until one maximum length FEC codeword payload has been sent to the xMII."
 Response Response Status C
 ACCEPT.

Cl 142 SC 142.3.5.2 P111 L30 # 470
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status A
 This description of RateAdjLeft is a bit misleading, as the current FEC CW doe not fill any gaps left by the removal of FEC CW Parity.
 SuggestedRemedy
 Change:
 "This variable holds the number of EQs remaining to be generated for the current FEC codeword to fill the gap left by the removal of FEC codeword parity data." to read
 "This variable holds the number of EQs remaining to be generated in the PCS Output Process to fill the gap left by the removal of FEC codeword parity data from the current FEC codeword ."
 Response Response Status C
 ACCEPT.

Cl 142 SC 142.3.5.2 P111 L36 # 471
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status A
 While this definition is accurate it does nothing to help the reader understand what is going on without sending him or her in circles for additional definitions.
 SuggestedRemedy
 Change:
 "storing up to FEC_CW_BLK_SZ 257-bit blocks" to read
 "storing one full FEC codeword in blocks of 257-bits."
 Response Response Status C
 ACCEPT IN PRINCIPLE.
 Change:
 "storing up to FEC_CW_BLK_SZ 257-bit blocks" to read
 "storing one full FEC codeword."

Cl 142 SC 142.3.5.3 P112 L40 # 472
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status R
 This function definition seems overly complex. It is only used in the Synchronizes SDs and always take the same argument for "buffer", which is not a FIFO.
 Note this is also the only mention of PMA_UNITDATA.indication in the draft which should include a channel reference "[ch]"
 SuggestedRemedy
 Change name to "ShiftInput(n),
 Change description to "This function inserts n new bits at the MSB of the RxInput buffer via the PMA_UNITDATA.indication[i]<256:0> primitive while removing the same number of bits at the LSB of the buffer. The ShiftInput() function is blocking and its execution takes exactly n bit times at the given receiving line rate.
 Update Synchronization SDs.
 Response Response Status C
 REJECT.
 Unclear what the issue with the current definition really is (apart from overly complex, being subjective).

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 142 SC 142.3.5.4 P113 L1 # 473
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status A PICS
 How can a process implement itself?
 YASIP (Yet Another Self Implementing Process).
 SuggestedRemedy
 Change:
 "The OLT Synchronizer Process shall implement an instance of state diagram as depicted in Figure 142-15 for every enabled receive channel." to
 "The OLT shall implement an instance of Synchronizer Process as depicted in Figure 142-15 for every enabled receive channel."
 Response Response Status C
 ACCEPT.
 Update PICS accordingly

Cl 142 SC 142.3.5.5 P113 L1 # 474
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status A PICS
 How can another process implement itself?
 YASIP (Yet Another Self Implementing Process).
 SuggestedRemedy
 Change:
 "The ONU Synchronizer Process shall implement an instance of state diagram as depicted in Figure 142-16 for every enabled receive channel." to
 "The ONU shall implement an instance of Synchronizer Process as depicted in Figure 142-16 for every enabled receive channel."
 Response Response Status C
 ACCEPT.
 Update PICS accordingly.

Cl 142 SC 142.3.5.6 P113 L49 # 645
 Laubach, Mark Broadcom
 Comment Type TR Comment Status D PICS
 PCS BER monitor Process text is currently TBD.
 SuggestedRemedy
 Insert new BER monitoring function variables, text, and SD as per laubach_3ca_1_0319.pdf. Update Clause 45 registers used for EPON BER monitoring function as per laubach_3ca_2_0139.pdf.
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Update PICS

Cl 142 SC 142.3.5.7 P114 L32 # 475
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D
 potential number confusion: "56 257-bit blocks" is this 56,257-bit blocks with a missing comma or 56 x 257-bit blocks? The reader is left to wonder.
 SuggestedRemedy
 Change to "fifty-six 257-bit blocks"
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Change to "56 of 257-bit blocks"

Cl 142 SC 142.3.5.7 P114 L39 # 476
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D PICS
 How can any process implement itself?
 YASIP (Yet Another Self Implementing Process).
 SuggestedRemedy
 Change:
 "The PCS Output Process shall implement an instance of state diagram as depicted in Figure 142-17 for every enabled receive channel." to
 "The PCS shall implement an instance of Output Process as depicted in Figure 142-17 for every enabled receive channel."
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Update PICS

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 142 SC 142.4.1 P114 L50 # 651
 Powell, William Nokia
 Comment Type T Comment Status D
 PMA control register for CL45
 SuggestedRemedy
 Proposal to be available before the meeting starts.
 Proposed Response Response Status W
 PROPOSED REJECT.
 No material available

Cl 142 SC 142.4.1 P115 L34 # 477
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 In Fig 142-18 & 142-19. The default state for CI 45 registers to "do nothing" is typically "0" and not "1". The Diff encoder should follow that principle.
 SuggestedRemedy
 Change "Control: 1 = off 0 =on" to "Control: 1 = on 0 = off"
 Ensure CI 45 matches this convention
 Update PICS as needed.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 142 SC 142.5 P117 L1 # 423
 Hajduczenia, Marek Charter Communicatio
 Comment Type TR Comment Status D
 PICS needed and missing
 SuggestedRemedy
 Use hajduczenia_3ca_2_0319.pdf
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.1 P119 L10 # 478
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 Don't need to callout the same figure 2x in one para
 SuggestedRemedy
 Strike "(see Figure 143-1)"
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Wrong Clause (was 141, corrected to 143)

Cl 143 SC 143.1 P119 L46 # 479
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 We SHOULD have a convention for Conventions! They should all be in the Overview.
 SuggestedRemedy
 Move 143.3.3.1 Conventions, 143.3.4.1 Conventions to 143.1.1 Conventions.
 We can leave 144.1.6 at it's low priority in CI 144.1 Overview
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Move 143.3.3.1 Conventions, 143.3.4.1 Conventions, and 144.1.6 Conventions to 143.1.1 Conventions (single instance for all clause).

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

CI 143 SC 143.2.3 P120 L45 # 540
 Remein, Duane Futurewei Technologie

Comment Type TR Comment Status D

In CI 143 we need to distinguish MPRS channel from PMD channel or some other type of channel

Note that several of the proposed changes in this comment affect variable definitions, hence the "must be satisfied" designation.

SuggestedRemedy

In the following instances change channel to MCRS channel

- pg/Line Current text
- 120/45 "MCRS transmit channels"
- 121/25 "multiple channels, envelopes may overlap"
- 125/42 "the number of channels supported"
- 126/43 "on different channels"
- 126/48 "on different channels carried"
- 127/2 "the receive channel write pointer"
- 127/14 "skew of the received channels"
- 127/21 "over all channels the receiver"
- 131/14 "envelope on channel ch" {ch should be in italics here}
- 131/22 "envelope in a given channel"
- 135/24 "ch - channel index" (left Figure 143-11)
- 136/13 "number of channels supported"
- 137/8 "current envelope for channel c."
- 137/28 "or Output Process for channel c."
- 137/45 "TX_CLK signal for channel c"
- 137/49 "indicates that channel c"
- 138/33 "(i.e., all channels are idle)"
- 139/2 "fill the transmit channel when"
- 140/28 "for each channel implemented"
- 142/30 "current LLID for that receive channel."
- 146/23 "for each channel implemented."
- 146/30 "data from multiple channels is"
- 151/10 "Both the channel rate asymmetry"
- 151/29 "operation over a single channel"
- 152/3 "receive channels are active"
- 152/8 "associated with the receive channel"
- 152/34 "pointers for all channels increment"

Globally replace "channel bonding" with "MCRS channel bonding"

Proposed Response Response Status W

PROPOSED REJECT.

Context is clear, IMO, and adding MCRS in each every listed instance does not help with the readability in any way

CI 143 SC 143.2.3 P152 L51 # 619
 Remein, Duane Futurewei Technologie

Comment Type TR Comment Status D Delay

AI #21 Delay variability

SuggestedRemedy

Change:

"The actual delay is implementation dependent but an implementation shall maintain a combined delay variation through MCRS of no more than {TBD} EQ (see TBD 144.x.x.x) so as not to interfere with the MPCP timing." to

"The actual delay is implementation dependent but an implementation is expected to maintain a delay variation through the MCRS of no more than ± two EQT when operating at 25 Gbps and ± three EQT when operating at 10 Gbps so as not to interfere with the MPCP timing."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"The actual delay is implementation dependent but an implementation shall maintain a combined delay variation through MCRS of no more than {TBD} EQ (see TBD 144.x.x.x) so as not to interfere with the MPCP timing."

to

"The actual delay is implementation-dependent. An implementation is expected to maintain a delay variation through the MCRS of no more than ± two EQTs when operating at 25 Gbps and ± three EQTs when operating at 10 Gbps."

CI 143 SC 143.2.5.3 P125 L44 # 541
 Remein, Duane Futurewei Technologie

Comment Type T Comment Status D

While this statement is true it provides no guidance on the upper limit for the mechanism (160 ns due to the structure of the header).

"If an application requires additional skew mitigation the number of buffer rows can be increased."

SuggestedRemedy

Change the sentence to read: "If an application requires additional skew mitigation, up to 180 ns of skew can be accommodated by increasing the number of buffer rows."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change the sentence to read: "If an application requires additional skew mitigation, up to 180 ns of skew >>>may<<< be accommodated by increasing the number of buffer rows."

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 143 SC 143.3.1.1.1 P130 L1 # 622
 Kramer, Glen Broadcom
 Comment Type T Comment Status D
 Tables 143-1 and 143-2 are never introduced or referenced in text.
 SuggestedRemedy
 Add the following sentence just before Table 143-1:
 "Depending on the MAC operating speed, the PLS_DATA.request primitive maps to one or multiple xMII transmit interfaces (see Table 143-1)."
 Add the following sentence just before Table 143-2:
 "Depending on the MAC operating speed, the PLS_DATA.indication primitive maps to one or multiple xMII receive interfaces (see Table 143-2)."
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.3.1.3 P131 L36 # 542
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 This statement is nonsequitur "For multi-channel MCRS systems the transmit XGMIIs are synchronous and only one TX_CLK is required." there is only one 10G channel ever (we don't support 20G).
 SuggestedRemedy
 Strike the sentence.
 Proposed Response Response Status Z
 PROPOSED REJECT.
 This comment was WITHDRAWN by the commenter.
 This is a generic section, so multiple instances of XGMIIs are possible in some non-Nx25G-EPON implementation.

Cl 143 SC 143.3.2 P132 L38 # 543
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 The xRef to Table 143-3 should not cross the line.
 SuggestedRemedy
 per comment
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.3.2.1 P133 L50 # 544
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 Table 143-4 to 6, what is the meaning of the offensive highlighting?
 SuggestedRemedy
 Remove the offensive highlighting.
 Proposed Response Response Status W
 PROPOSED REJECT.
 Offensive is rather subjective. The highlight was in the original contribution accepted for inclusion in the draft. It is expected to highlight the CRC8 portion reflected in different representations of the bit stream.

Cl 143 SC 143.3.3.2 P135 L42 # 638
 Kramer, Glen Broadcom
 Comment Type T Comment Status D
 Editor's Note (to be removed prior to publication) in the future, references to other applications-specific parameters are to be added in this subclause.
 SuggestedRemedy
 Just remove this note. There are no draft changes needed at this time.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.3.3.3 P135 L49 # 545
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 Style, ADJ_BLOCK_SIZE s/b in italics in description.
 SuggestedRemedy
 per comment
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 143 SC 143.3.3.3 P135 L51 # 546
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D bucket
 Is there some real good reason to send the reader in an reef wild goose chase?
 SuggestedRemedy
 Change "(see 143.3.3.2)" to "(For Nx25G-EPON see 143.4.1.3)".
 Do the same at the following locations (Pg/Line): 136/14, 136/34.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.3.3.3 P136 L7 # 547
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 Apparently IEI_EQ mean Inter-Envelope Idle somewhere, but not here.
 SuggestedRemedy
 Change "Inter-Envelope Idle" to "IEI_EQ" (in italics of course)
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.3.3.3 P136 L32 # 548
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 The effective MAC rate is also dependent on the number of channels being used and the rate of that channel. And what is the "nominal MAC rate" anyway? It is not defined.
 SuggestedRemedy
 Change:
 "The effective MAC rate is equal to <nominal MAC rate>" to
 "The instantaneous MAC rate within a single envelope is equal to <xMII rate>"
 Proposed Response Response Status W
 PROPOSED REJECT.
 Instantenous is a dangerous term to use (means at this moment of time). The current definition is correct. A better question to discuss is whether we really need to specify what the effective MAC rate is to being with (could likely strike the definition altogether).

Cl 143 SC 143.3.3.3 P136 L39 # 549
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D bucket
 We are very inconsistent with the use of "ch" and "c" and seem to use these two variables interchangeable and/or without definition (for "c" anyway). I would like to suggest we adopt one and us it consistently. However, this is probably better left until after getting into WG Ballot so I will withdraw this comment against D1.5 (assuming we intent to go to WG ballot with 1.6).
 Note there are 16 instances of "[c]" and 27 of "[ch]" with possible a few other variants of each so I will probably suggest changing "c" to "ch".
 We are also quite inconsistent with including the [x] (where x = ch, c or something else) in variable definitions.

SuggestedRemedy
 If anyone has an objection to this please voice it now.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Replace all "c" designators of channel with "ch"

Cl 143 SC 143.3.3.3 P137 L1 # 550
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 Elsewhere we state that EnvRx or EnvTx have 32 rows (Fig 143-11/12) Here we state it is 64. We should be more precise
 SuggestedRemedy
 Change:
 "The number of rows is 64, as determined by" to
 "The number of rows can be up to 64, as determined by the expected skew remediation and"
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Change:
 "The number of rows is 64, as determined by" to
 "The maximum number of rows is 64, as determined by the expected skew remediation and"

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 143 SC 143.3.3.3 P137 L30 # 551
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D
 rCol and rRow are modified in 143.4.1.3.2 but this is not mentioned here.
 SuggestedRemedy
 Add a cross reference to each "Also see 143.4.1.3.2"
 Proposed Response Response Status W
 PROPOSED REJECT.
 The definitio is correct for generic section. Nx25G-EPON specific section overrides these definitions. Otherwise, the generic section would not be really generic.

Cl 143 SC 143.3.3.4 P137 L44 # 552
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 The is no "TX_CLK signal for channel c" there is only one TX_CLK.
 SuggestedRemedy
 Strike "for channel c"
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Modify defintion as follows
 TxClk[c]
 Type: Boolean
 Description: The TxClk[c] variable represents the MCRS transmit clock for channel c. Each TxClk[c] clear on read variable is set to true on each edge, rising and falling, of the TX_CLK signal (see Table 143-1).

Cl 143 SC 143.3.3.6.1 P140 L12 # 553
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D PICS
 YASIP (Yet Another Self Implementing Process).
 SuggestedRemedy
 Change:
 "The MCRS Input Process shall implement the state diagram as depicted in Figure 143-12." to
 "The MCRS shall implement the Input Process as depicted in Figure 143-12."
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Update PICS

Cl 143 SC 143.3.3.6.2 P140 L25 # 554
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D PICS
 YASIP (Yet Another Self Implementing Process).
 SuggestedRemedy
 Change:
 "The MCRS Transmit Process shall implement the state diagram as depicted in Figure 143-13." to
 "The MCRS shall implement the Transmit Process as depicted in Figure 143-13."
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Update PICS

Cl 143 SC 143.3.4.3 P144 L12 # 555
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D
 The is no "application-specific EnvRx definition in 143.3.3.2" to see in 143.3.3.2. Change the ref to
 SuggestedRemedy
 Strike the parenthetical.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 143 SC 143.3.4.3 P144 L25 # 556
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 If OutClk is set True on each positive edge of TX_CLK this cannot be true; "and runs at half the frequency of TX_CLK"
 SuggestedRemedy
 Strike the erroneous phrase
 Proposed Response Response Status W
 PROPOSED REJECT.
 Unclear what is wrong

Cl 143 SC 143.3.4.3 P144 L51 # 557
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 "from a xMII"
 SuggestedRemedy
 change to "from an xMII"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.3.4.4 P145 L28 # 558
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 In IsHeader we note what "0xFB" is, here we do not.
 SuggestedRemedy
 Add comment to line so it reads:
 "return (eq<7:0> == 0xF8 AND // Start Control Code /S)"
 Proposed Response Response Status W
 PROPOSED REJECT.
 Just because a value happen to be 0xFB, it does not mean in this particular context it is the Start Control Code. These are TXC bits and the value 0xFB means that the following 8 octets consist of 5 control codes and 3 data octets, which is what one would expect if we have a misaligned header.

Cl 143 SC 143.3.4.5.1 P146 L16 # 559
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D PICS
 YASIP (Yet Another Self Implementing Process).
 SuggestedRemedy
 Change:
 "The MCRS Receive Process shall implement the state diagram as depicted in Figure 143-15." to
 "The MCRS shall implement the Receive Process as depicted in Figure 143-15."
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Change:
 "The MCRS Receive Process shall implement the state diagram as depicted in Figure 143-15." to
 "The ONU and OLT MCRS shall implement the Receive Process as depicted in Figure 143-15."
 Update PICS

Cl 143 SC 143.3.4.5.2 P146 L27 # 560
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D PICS
 YASIP (Yet Another Self Implementing Process).
 SuggestedRemedy
 Change:
 "The MCRS Output Process shall implement the state diagram as depicted in Figure 143-16." to
 "The shall implement the MCRS Output Process as depicted in Figure 143-16."
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Change:
 "The MCRS Output Process shall implement the state diagram as depicted in Figure 143-16." to
 "The ONU and OLT MCRS shall implement the MCRS Output Process as depicted in Figure 143-16."
 Update PICS

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 143 SC 143.3.4.5.2 P147 L30 # 420
 Hajduczenia, Marek Charter Communicatio

Comment Type T Comment Status D

Figure 143–15 caption "MCRS Receive Function, Receive Process state diagram" seems wrong - it is in output section

SuggestedRemedy
 Change Figure 143–15 caption to read "MCRS Receive Function, Output Process state diagram"

Proposed Response Response Status W
 PROPOSED REJECT.

Caption is correct as is

Cl 143 SC 143.4.1 P150 L11 # 561
 Remein, Duane Futurewei Technologie

Comment Type T Comment Status D

What does item b) mean? "The data and delimiters are synchronous to clock reference." Which "clock reference", 25.7..G or 25G or something else.

SuggestedRemedy
 Strike b)

Proposed Response Response Status W
 PROPOSED REJECT.

TX_CLK in transmit direction and xMII specific clock in receive direction.

Cl 143 SC 143.4.1.1 P150 L26 # 621
 Kramer, Glen Broadcom

Comment Type E Comment Status D bucket

New line character is missing before "The 50/50G-EPON architecture..." and before "When two channels..."

SuggestedRemedy
 Add two new line characters. Also move the paragraph on lines 31-34 to be after the Table 143-7.

Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.4.1.1 P150 L44 # 562
 Remein, Duane Futurewei Technologie

Comment Type TR Comment Status D

We need not mention that UC0 can be used for ONU discovery (so can every other US channel)

SuggestedRemedy
 Strike ", ONU discovery"

Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.4.1.2 P151 L7 # 563
 Remein, Duane Futurewei Technologie

Comment Type T Comment Status D

Give the para is discussing 25/10 and 50/25 systems this statement is deceiving "In 50/25G-EPON systems, the asymmetric data rate is achieved via the MCRS channel number asymmetry, where two MCRS channels are active in the downstream direction (DC0 and DC1), but only a single MCRS channel UC0 is active in the upstream direction. Note that every upstream and downstream MCRS channels operate at the data line rate of 25 Gb/s."

SuggestedRemedy
 Change to: "In 50/25G-EPON systems, the asymmetric data rate is achieved via the MCRS channel number asymmetry, where two MCRS channels are active in the downstream direction (DC0 and DC1), but only a single MCRS channel UC0 is active in the upstream direction. In 50/25G-EPON systems, upstream and downstream MCRS channel operates at the data line rate of 25 Gb/s."

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Change to: "In 50/25G-EPON systems, the asymmetric data rate is achieved via the MCRS channel number asymmetry, where two MCRS channels are active in the downstream direction (DC0 and DC1), but only a single MCRS channel UC0 is active in the upstream direction. In 50/25G-EPON systems, upstream and downstream MCRS >>>channels operate<<< at the data rate of 25 Gb/s."

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 143 SC 143.4.2 P151 L43 # 564
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 What is so special about "Time" in "MCRS Time synchronization"?
 SuggestedRemedy
 use lower case
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Line is 43, not 41 (fixed)

Cl 143 SC 143.4.2 P151 L45 # 565
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 Read and write pointers are not just set at ONU registration. "Such delay margin is established at the ONU registration time by proper setting of MCRS EnvRx read and write pointers at the OLT and the ONU."
 SuggestedRemedy
 Change to:
 "Such delay margin is established at the ONU registration time and by proper setting of MCRS EnvRx read and write pointers at the OLT and the ONU at the start of a burst transmission."
 Proposed Response Response Status W
 PROPOSED REJECT.
 The rest of this subclause explains that there are special steps taken only on unregistered ONUs (see ONU step 2.b and OLT step 1.b on page 152). These steps establish the initial delay margin. After the ONU is registered, the delay margin is maintained automatically, because it is already part of RTT.

Cl 143 SC 143.4.2 P151 L51 # 617
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 AI #20 MCRS Time Sync line 30 & 50. There is no real need to discuss FEC delay in Cl 143 (RS).
 SuggestedRemedy
 Strike the phrase ", which introduces a near-constant (\pm {TBD} EQT) delay" in 2 places.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.4.2 P151 L52 # 566
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 This sentence doesn't seem to flow with the para. "The following are the ONU rules for setting the EnvRx write and read pointers:"
 SuggestedRemedy
 Start it on a new para.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.4.2 P152 L28 # 618
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D 631
 AI #20 MCRS Time Sync line 10
 SuggestedRemedy
 Strike "see (TBD))"
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 This TBD has nothing to do with the AI to MCRS timing delay. This TBD was simply intended to be a reference to subclause that described the discovery windows. That subclause did not exist at the time of the MCRS writing, but it does exist now. Replace TBD with 144.1.1.3 (contingent on comment #631)

Cl 143 SC 143.4.2 P152 L37 # 643
 Kramer, Glen Broadcom
 Comment Type ER Comment Status D bucket
 The following sentence on lines 37-38 is duplication of the sentence on lines 8-9:
 "In an unregistered ONU, upon every update of a write pointer associated with the receive channel with the lowest index, the read pointer is also updated according to the following equation:"
 The second sentence was not present in the accepted contribution.
 SuggestedRemedy
 Delete the sentence on lines 37-38.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 143 SC 143.4.2 P152 L38 # 567
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 Stray para "In an unregistered transmitting, upon every update of a write pointer associated with the receive channel with the lowest index, the read pointer is also updated according to the following equation:"
 SuggestedRemedy
 This is in the first 2) ReadPointer item above. Strike the statement.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.4.2 P152 L40 # 568
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 In the last para it is claimed that "The above set of rules ensures that a delay of 32 EQT is built into the ONU MCRS receive path and a similar delay of 32 EQT is built into the OLT MCRS receive path." which is hardly true as the number 32 is never mentioned in the "above rules", furthermore EPAM can clearly assume a value of 64 so if a device is designed with a larger EnvRx there will be more than 32 EQ delay.
 Later in the para it is stated "built-in margin of 64 EQT" is also incorrect
 SuggestedRemedy
 Change to:
 "The EnvRx buffer combined with the above rules ensure there is a constant delay (determined by the size of the EnvRx buffer, typically 32 EQ) built into the MCRS receive path."
 and "built-in margin of up to 128 EQT (typically 64 EQT)"
 Proposed Response Response Status W
 PROPOSED REJECT.

COMMENT: In the last para it is claimed that "The above set of rules ensures that a delay of 32 EQT is built into the ONU MCRS receive path and a similar delay of 32 EQT is built into the OLT MCRS receive path." which is hardly true as the number 32 is never mentioned in the "above rules",

REBUTTAL: The number is mentioned twice, in the equations in ONU step 2.b and OLT step 1.b ($0x20 = 32$)

COMMENT: furthermore EPAM can clearly assume a value of 64 so if a device is designed with a larger EnvRx there will be more than 32 EQ delay.

REBUTTAL: The nominal delay through EnvRx is established to be exactly half the buffer size. If the buffer has 64 entries (row) the delay is 32, which is what we have now. The nominal delay is half the buffer, so that we can correct both positive and negative skews. A skew outside of range [-32EQT, 32EQT] cannot be corrected with 64-entry buffers.

COMMENT: Later in the para it is stated "built-in margin of 64 EQT" is also incorrect

REBUTTAL: The sentence talks about the total nominal MCRS delay built into the round-trip, which includes 32 EQT in the ONU EnvRx and 32 EQTs in the OLT EnvRx. See the previous sentence in the draft.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 143 SC 143.4.2 P152 L44 # 569
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 "the delay any EQ experience" should be "the delay any EQ experiences"
 and
 "that this EQ encountered" should be "that this EQ encounters"
 and
 "two delays remain constant" should be "two delays remains constant"
 SuggestedRemedy
 per comment
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.4.3 P153 L1 # 570
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 Strike "Editor's Note (to be removed prior to publication): in the above paragraph derived
 from CI 76.1.2, "1
 TQ" was changed to "TBD EQ". In CI 76.1.2 this applied to the combined MCRS, PCS, &
 PMA. A
 revised value is needed." it has served it purpose.
 SuggestedRemedy
 per comment
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 143 SC 143.5 P154 L1 # 424
 Hajduczenia, Marek Charter Communicatio
 Comment Type TR Comment Status D
 PICS needed and missing
 SuggestedRemedy
 Use hajduczenia_3ca_3_0319.pdf
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144 P156 L1 # 571
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 If we insist on defining TLAs (or FLAs) then we should insist they be used.
 SuggestedRemedy
 In CI 144 replace "Multipoint MAC Control" or "Multipoint MAC Control (MPMC)" with
 "MPMC" except in first use, figures and titles.
 In titles use "Multipoint MAC Control (MPMC)" consistently.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.1 P156 L21 # 572
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 If we insist on defining TLAs (or FLAs) then we should insist they be used.
 SuggestedRemedy
 In CI 144 after pg 156 line 19 replace "Multipoint control protocol" or "Multipoint control
 protocol (MPCP)" with "MPCP" except in figures and subclause titles.
 In titles use "Multipoint control protocol (MPCP)" consistently.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.1 P156 L23 # 573
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D
 CCP in defined multiple time in different ways.
 SuggestedRemedy
 At this location change "Channel control protocol (CCP)" to "Channel Control Protocol
 (CCP)"
 Everywhere else in CI 144 replace any variant of channel control protocol with CCP except
 for the title of 144.4 which can remain as is.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.1 P156 L27 # 574
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 Clause 141 does not define a PHY "Physical Layer devices defined in Clause 141"
 SuggestedRemedy
 Change to "Physical Layer devices defined in Clause 141 and Clause 142"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.1.1 P156 L30 # 516
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 If we insist on defining TLAs (or FLAs) then we should insist they be used.
 SuggestedRemedy
 Move the acrimonious definition of "(P2MP)" to line 27. Thereafter In Cl 144 replace "Point-to multipoint", "point-to multipoint", "point-to-multipoint" (or any other stray variants) with "P2MP" except in figures and subclause titles and remove an parenthesis around "P2MP". In figures and title use "Point-to multipoint" consistently.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.1.1.1 P156 L42 # 517
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 This statement is not quite correct "To avoid upstream data collisions, only a single ONU is allowed to transmit at a time."
 SuggestedRemedy
 Change to "To avoid upstream data collisions, transmission windows (grants) for all ONUs are controlled such that only a single ONUs transmission reaches the OLT at a given instant."
 Strike "(grant)" later in the para.
 Proposed Response Response Status W
 PROPOSED REJECT.
 Current text is correct as is.

Cl 144 SC 144.1.1.2 P157 L26 # 518
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 MCRS has not yet been defined in this clause
 SuggestedRemedy
 change "MCRS (below the MAC)" to "Multi-Channel Reconciliation Sublayer (MCRS, below the MAC)"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.1.1.3 P157 L49 # 631
 Kramer, Glen Broadcom
 Comment Type T Comment Status D
 Action item to provide "ONU Discovery and Regsitation" introduction text (144.1.1.3)
 SuggestedRemedy
 Use the text for subclause 144.1.1.3 as shown in kramer_3ca_2_0319.pdf. Notice subclause title capitalization.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.1.3 P159 L7 # 633
 Kramer, Glen Broadcom
 Comment Type TR Comment Status D
 The MAC Control block diagram shows MPCP, but doesn't show CPP. This comment addresses two action items to show both MPCP and CPP on Figures 144-3 and 144-4.
 SuggestedRemedy
 The proposed solution is to present block diagrams in hierarchical manner. Figures 144-3 and 144-4 will show CCP and MPCP as just two boxes, without any internal details. A two new figures showing just the MPCP (OLT and ONU) block diagrams are to be added to the MPCP subclause. A two more new figures, showing just the CCP (OLT and ONU) block diagrams are to be added to the CCP subclause.
 All the proposed changes and the new figures are shown in the kramer_3ca_8_0319.pdf. This contribution also provides solutions for action items 26 (missing text in "Principles on MPCP") and 27 (TBD in MAC delay variability).
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.1.4 P159 L50 # 519
 Remein, Duane Futurewei Technologie

Comment Type TR Comment Status D

Is this statement correct? Per Fig 144-1 it is not. "The Multipoint MAC Control does not interface with any MAC Clients."

SuggestedRemedy
 Strike the statement.

Proposed Response Response Status W
 PROPOSED REJECT.

Figure 144-1 shows OAM layer in between

Cl 144 SC 144.1.4 P159 L52 # 520
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D bucket

Change "using service" to "using the service"

SuggestedRemedy
 per comment

Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.1.4.1 P160 L38 # 521
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D bucket

MAC Control Service (MCS) Interface or
 MAC Control Service (MCS) interface

SuggestedRemedy
 Pick one and be consistent.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Use "MAC Control Service (MCS) interface"

Cl 144 SC 144.1.4.1 P160 L40 # 522
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D bucket

Missing articles.

SuggestedRemedy
 Change:
 "MCS interface is an interface between MAC Control sublayer and MAC Control Client above it (see Figure 144–3 and Figure 144–4). The definition and behavior of MAC Control Client is outside the scope of this standard." to:
 The MCS interface is an interface between the MAC Control sublayer and the MAC Control Client above it (see Figure 144–3 and Figure 144–4). The definition and behavior of the MAC Control Client is outside the scope of this standard.

Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.1.4.1 P160 L44 # 523
 Remein, Duane Futurewei Technologie

Comment Type ER Comment Status D

In several places in Clause 144 the term "MAC Control Client" is used to refer to the OLT MPMC Client or ONU MPMC Client. It would be better if we used the full and proper name. MAC Control Client appears 32x in the Clause.

SuggestedRemedy
 Use "OLT MPMC Client" and "ONU MPMC Client" as appropriate. Where OLT/ONU is clear based on context in the paragraph this _may_ be shortened to "MPMC Client".

There are several locations in the text where "MAC Control Client" is correct and should not be changed: (Pg/Ln) 159/3, 159/52, and 160/40-46.

Additional notes:
 pg 198 line 18 change "local MAC Control Client" to "OLT MPMC Client"
 pg 198 line 29 change "local MAC Control Client" to "its MPMC Client"

Proposed Response Response Status W
 PROPOSED REJECT.

Lots of detailed work for very low benefit. Please make your case what this change is supposed to improve upon.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.1.4.1 P160 L49 # 524
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 Neither MCS:MA_CONTROL.indication(opcode, indication_operand_list) nor MCS:MA_CONTROL.request(destination_address, opcode, request_operand_list) are defined anywhere in 31
 SuggestedRemedy
 Strike the "MCS:"
 Proposed Response Response Status W
 PROPOSED REJECT.
 What is defined is MA_CONTROL, MCS is jst an instance indication. Text is correct as is.

Cl 144 SC 144.1.4.2 P161 L10 # 525
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 Neither MCI:MA_CONTROL.indication(opcode, indication_operand_list) nor MCI:MA_CONTROL.request(destination_address, opcode, request_operand_list) are defined anywhere in 31
 SuggestedRemedy
 Strike the "MCI:"
 Proposed Response Response Status W
 PROPOSED REJECT.
 What is defined is MA_CONTROL, MCI is jst an instance indication. Text is correct as is.

Cl 144 SC 144.1.4.3 P161 L23 # 526
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 Neither MAC:MA_DATA.indication(destination_address, source_address, mac_service_data_unit, frame_check_sequence, reception_status) nor MAC:MA_DATA.request(destination_address, source_address, mac_service_data_unit, frame_check_sequence)) are defined anywhere in Cl 2.
 SuggestedRemedy
 Strike the "MAC:"
 Proposed Response Response Status W
 PROPOSED REJECT.
 What is defined is MA_CONTROL, MAC is jst an instance indication. Text is correct as is.

Cl 144 SC 144.2 P162 L1 # 527
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 Assuming we consider received frames can also be forwarded it would be more precise to use transmitted here.
 SuggestedRemedy
 Change "source of the forwarded frames" to "source of the transmitted frames"
 Proposed Response Response Status W
 PROPOSED REJECT.
 I fail to see the distinction.

Cl 144 SC 144.2 P162 L2 # 528
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D
 What exactly does this mean "This block is responsible for handling the MPCP in the context of the MAC."?
 SuggestedRemedy
 Change to "This block is responsible for bringing ONUs on-line."
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Change to "This block is responsible for handling the MPCP" - it is sufficiently clear what MPCP is for.

Cl 144 SC 144.2..3 P163 L8 # 634
 Kramer, Glen Broadcom
 Comment Type E Comment Status D
 Typo in the definition of RttCurrent
 SuggestedRemedy
 Replace "QEQT" with "EQT"
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Fixed clause and subclause (144, not 1454)

Cl	SC	P	L	#	Comment Type	E	Comment Status	D	bucket
Cl 144	SC 144.2.1	P162	L12	# 529					
Remein, Duane Futurewei Technologie									
Missing "the" or "The" in the following location s(pg/line/following text)									
162/12 "Control Parser"									
162/13 "Timestamp field"									
162/17 "Control Multiplexor"									
162.14 "timestamp drift"									
166/13 "REGISTER_REQ MPCPDU"									
166/13 "timestamp value"									
166/14 "MCRS_CTRL.request primitive"									
166/15 "Envelope Activation Process"									
174/2 "REPORT MPCPDU transmission"									
175/6 "LLID equal"									
187/27 "maximum delay the ONU"									
189/9 "DISC_PLID value."									
191/37 "unicast PLID and BCAST_PLID values,"									
193/29 "MsgEnvGroup is generated"									
200/29Change this:									
"MAC Control Client may monitor and react to the changes in the state of the downstream and/or upstream channels, allowing ONU notify the OLT of observed or expected channel state changes. For example, MAC Control Client may have ability to detect failure of one of channel receivers.									
To notify MAC Control Client at the OLT about a local channel state change, the Channel Control Protocol performs the following sequence of steps:" to this:									
"The MAC Control Client may monitor and react to the changes in the state of the downstream and/or upstream channels, allowing the ONU notify the OLT of observed or expected channel state changes. For example, the MAC Control Client may have ability to detect a failure of one of the channel receivers.									
To notify the MAC Control Client at the OLT about a local channel state change, the Channel Control Protocol performs the following sequence of steps:"									
200/37 "MAC Control Client at the ONU"									
200/40 "MAC Control Client in the OLT"									
200/42 "MAC Control Client in the OLT"									

SuggestedRemedy

Add missing "the" or "The" as appropriate.

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

Cl	SC	P	L	#	Comment Type	TR	Comment Status	D
Cl 144	SC 144.2.1	P162	L20	# 636				
Kramer, Glen Broadcom								
Action item #24 to address TBD values for DRIFT_THOLD.								
Further review of the given text revealed that there are also issues in the MPCP Control Multiplexor and Control Parser state diagrams.								
Currently, these state diagrams are not showing that the MPCP interfaces with multiple MAC instances and they use RTT[PLID] without any indication of whether the PLID value came from.								
Also, the timestamp processing is not quite right. While the text somewhere else says that a large timestamp jump is expected when we receive a new PLID MPCPDU, the state diagrams did not allow that.								
<i>SuggestedRemedy</i>								
I am proposing the make the maximum timestamp drift 2 EQT for 25G receive channels and 3 EQT for 10G receive channels. Normally, at 25G, we should expect zero drift and at 10G we can expect a drift of +- 1, since some upstream EQs (6.4 ns @ 10G) can land in the middle of an EQT (always 2.56 ns). A small safety margin is added, since a timestamp drift causes immediate ONU deregistration.								
Use updated definitions of DRIFT_THOLD constant, ProcessTimestamp() function, and Control Multiplexor/Parser state diagrams as shown in kramer_3ca_9_0319.pdf.								
<i>Proposed Response</i> <i>Response Status</i> W PROPOSED ACCEPT.								

Proposed Responses

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CI 144 SC 144.2.1.2 P162 L37 # 530
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 An evil red highlighted statement says "{TBD reference to Clause 142 needed}."
 SuggestedRemedy
 Replace the evil red highlighted text with "142.4.3"
 In CI 142 add:
 142.4.3 Loop-timing specifications for ONUs
 ONUs shall operate at the same time basis as the OLT, i.e., the ONU transmit clock tracks the ONU receive clock. Jitter transfer masks are defined in 141.6.2.
 For the ONUs supporting 10G transmission in the upstream direction, the PMA received clock is 25.78125 GHz, however, the PMA transmit clock is 10.3125 GHz. The loop timing is achieved by dividing the PMA received clock by 2.5.
 Update PICS.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 144 SC 144.2.1.3 P162 L43 # 531
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 Per our agreed style this should be Msdu
 SuggestedRemedy
 Globally replace with proper style
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Is it really a technical comment?

CI 144 SC 144.2.1.3 P162 L46 # 532
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 Per our agreed style this should be Opcode
 SuggestedRemedy
 Replace variable opcode with Opcode *i.e., with proper style) use care as there are lots of instances (46 or so) of the word opcode in the draft.
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Is it really a technical comment?

CI 144 SC 144.2.1.3 P163 L7 # 533
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 Unit: QEQT?
 SuggestedRemedy
 Change to Unit: EQT
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 144 SC 144.2.1.3 P163 L46 # 535
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 Per our agreed style this should be TimestampOpcode
 SuggestedRemedy
 Globally replace with proper style
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Is it really a technical comment?

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.2.1.3 P163 L46 # 534
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 Per our agreed style this should be SupportedOpcode
 SuggestedRemedy
 Globally replace with proper style
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Is it really a technical comment?

Cl 144 SC 144.2.1.3 P163 L46 # 536
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 Per our agreed style this should be TimestampDrift
 SuggestedRemedy
 Globally replace with proper style
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Is it really a technical comment?

Cl 144 SC 144.3.1.1 P165 L36 # 537
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 see 143.3.3.3 should be see 143.3.3.4 (2x in this para)
 SuggestedRemedy
 per comment
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.1.1 P165 L41 # 538
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 Won't this cause false timestamp drift errors? "The time reference point for the timestamp value is the transmission time of the Envelope Start Header (ESH) of the envelope that includes the MPCPDU (see 143.3.2). In situations where multiple MPCPDUs are transmitted within a single envelope, all these MPCPDUs shall have the same timestamp value, referencing the transmission time of ESH."
 Each MPCPDU will be off by 8 EQTs from the previous MPCPDU when processed. assuming DRIFT_THRESHOLD is reasonably small this will cause an error if to many (3?) PMCPDUs are included in the same burst. The error will be even more pronounced (2.5x) in 10G US links.

SuggestedRemedy
 Reconsider this statements
 Proposed Response Response Status W
 PROPOSED REJECT.
 Reconsidered, no changes needed.

Cl 144 SC 144.3.1.1 P166 L20 # 448
 Knittle, Curtis CableLabs
 Comment Type ER Comment Status D bucket
 "movement" should be "moment"
 SuggestedRemedy
 Replace "movement" with "moment"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.3.1.1 P166 L50 # 539
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 This maybe true if physics is non-deterministic. "this delay may be different on different channels"
 SuggestedRemedy
 Use a more deterministic statement:
 "this delay is different on different channels"
 Proposed Response Response Status W
 PROPOSED REJECT.
 If you're 10 feet from the OLT, the delay difference is below the precision threshold. Current statement is correct as is.

Cl 144 SC 144.3.1.1 P167 L20 # 575
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D bucket
 When did FTTH become a movement? "the movement when"
 SuggestedRemedy
 Change "movement to "moment"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.1.1 P167 L21 # 449
 Knittle, Curtis CableLabs
 Comment Type ER Comment Status D bucket
 "movement" should be "moment"
 SuggestedRemedy
 Replace "movement" with "moment"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.1.1 P167 L24 # 576
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D
 Why is this para indented? Why are equations interspersed with text?
 There appear to be dots after TUP and t1 on lines 30 & 32.
 SuggestedRemedy
 For lines 23 - 33 use unindented text (Style T,Text in FM) for all plain text and unnumbered equation (Style EU,EquationUnnumbered in FM) for each equation (anything with the form of x = ...). All equations should be on a separate line. Try to remove the stray dots
 Proposed Response Response Status W
 PROPOSED REJECT.
 Discussion is needed. Note that text in line 22 ends with ":" implying an explanation block follows.

Cl 144 SC 144.3.1.1 P167 L34 # 577
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 "GATE generation Process" should be "GATE Generation process" There is no "GATE Generation Process"
 SuggestedRemedy
 per comment
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.1.1 P167 L35 # 578
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 "All MPCPDUs send by the OLT on unicast PLID have the"
 SuggestedRemedy
 change to "All MPCPDUs sent by the OLT on unicast PLIDs have the"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.3.1.1 P167 L35 # 450
 Knittle, Curtis CableLabs
 Comment Type ER Comment Status D bucket
 "send" should be "sent"
 SuggestedRemedy
 Replace "send" with "sent"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.1.1 P168 L38 # 579
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 "This large difference detected" missing is
 SuggestedRemedy
 change to "This large is difference detected"
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 change to "This large difference is detected" (wrogn place for "is" was suggested)

Cl 144 SC 144.3.1.2 P168 L45 # 620
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D Delay
 A1 #27 Delay variability
 SuggestedRemedy
 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
 "The actual delay is implementation dependent; however, a complying implementation is expected to maintain a delay variation of no more than \pm two EQT when operating at 25 Gbps and \pm three EQT when operating at 10 Gbps through the MAC."

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 "The actual delay is implementation-dependent. A compliant implementation is expected to maintain a delay variation of no more than \pm two EQTs when operating at 25 Gbps and \pm three EQTs when operating at 10 Gbps through the MAC."
 Need also to agree on how we define operating speed: 25 Gbps, 25 GBd, 25G etc. Various styles are used.
 Also, how exactly the delay variation through the MAC is defined? What if MAC accepted a frame at time T, sent the first half of the frame on one burst at time T+x and sent the remainder of the frame in another burst at time T+y? How do we define/measure the delay in this case?

Cl 144 SC 144.3.2 P169 L1 # 580
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 This explanation of LLID type should come earlier in the clause, we've already mention PLID and MLID several time.
 (I can bring this comment into WG ballot Draft 2.0 if desired).
 SuggestedRemedy
 Move sections 144.3.2.1 through 144.3.2.4 under 144.1.1.2 where we explain the entire concept of LLID (so they become 144.1.1.2.1 .. 144.1.1.2.4). Remove 144.3.2.
 Proposed Response Response Status W
 PROPOSED REJECT.
 It was discussed before.

Proposed Responses

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Cl 144 SC 144.3.2.3 P169 L19 # 581
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 "an ONUs using" should be either "an ONU using" or "ONUs using"
 SuggestedRemedy
 change ONUs to ONU
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.2.3 P169 L20 # 451
 Knittle, Curtis CableLabs
 Comment Type ER Comment Status D bucket
 Extraneous 's' in "ONUs"
 SuggestedRemedy
 Remove the 's'
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.2.3 P169 L21 # 452
 Knittle, Curtis CableLabs
 Comment Type ER Comment Status D
 "An" should be "A"
 SuggestedRemedy
 Replace "An ULID..." with "A ULID..."
 Proposed Response Response Status W
 PROPOSED REJECT.

Cl 144 SC 144.3.3 P170 L16 # 653
 Kramer, Glen Broadcom
 Comment Type TR Comment Status D postdeadline
 Generally, when the NMS provisions an ULID into an ONU, that provisioning will come with a set of corresponding rules that tells the ONU how to handle traffic on that ULID (what UNI for forward to, what filtering to apply, etc.). If an ONU is required to accept traffic on BCAST_ULID by default, but there are no rules provisioned for BCAST_ULID, the ONU won't know what to do.
 So, having predefined BCAST_ULID is not helpful. A broadcast ULID can simply be terated as a special case of multicast ULID and be provisioned when needed (together with its specific rules).
 SuggestedRemedy
 Remove BCAST_ULID row from Table 144-1.
 Remove Broadcast ULID bullet item on line 28.
 Update PICS accordingly.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.3 P170 L20 # 418
 Hajduczenia, Marek Charter Communicatio
 Comment Type TR Comment Status D
 "All unregistered ONUs shall only accept envelopes with DISC_PLID values. Upon successful registration, an ONU shall no longer accept envelopes with DISC_PLID." - this text contains requirements repeated from the Table 144-1.
 SuggestedRemedy
 To avoid unnecessary repetition, rewrite the text into a statement and leave PICS in the table: "All unregistered ONUs only accept envelopes with DISC_PLID values. Upon successful registration, an ONU does no longer accept envelopes with DISC_PLID."
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.3.4 P170 L36 # 419
 Hajduczenia, Marek Charter Communicatio
 Comment Type TR Comment Status D
 No shall for the generic MPCPDU structure and needed
 SuggestedRemedy
 Change "The MPCPDU structure is shown in Figure 144-9, and is further defined as follows:" to "The MPCPDU structure shall be as shown in Figure 144-9, and is further defined as follows:"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.4 P170 L38 # 582
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 "Length/Type:" and "Opcode:" should be italicized as all other fields are. Alternatively in all either field definitions we could use non-italics.
 SuggestedRemedy
 Use Italics style.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.4.1 P171 L39 # 583
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 "envelope allocations with non-zero value of the LLID field"
 SuggestedRemedy
 change to "envelope allocations with a non-zero value for the LLID field"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.4.1 P172 L28 # 584
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 We should be more specific that "for the Envelope Header"
 SuggestedRemedy
 Change to "for the ESH"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.4.1 P172 L34 # 585
 Remein, Duane Futurewei Technologie
 Comment Type T Comment Status D
 We can be more precise "this old fragment is transmitted first"
 SuggestedRemedy
 change to "some or all of this old fragment is transmitted first"
 Proposed Response Response Status W
 PROPOSED REJECT.
 The Suggested Remedy increases ambiguity, as it appears that it is ok to transmit a little piece of the queued fragment and then transmit other frames, while some of that fragment still remains queued.

Cl 144 SC 144.3.4.3 P175 L10 # 586
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 The following field name should be in italics (pg/line name)
 175/10 "Opcode"
 180/50 "LLID"
 SuggestedRemedy
 per comment
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

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Cl 144 SC 144.3.4.3 P176 L10 # 587
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 Apparently LaserOffTime units are much more important than LaserOnTime units.
 SuggestedRemedy
 Under "LaserOnTime:" change
 "The value of LaserOffTime is expressed in the units of EQT." to
 "The value of LaserOnTime is expressed in the units of EQT."
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.4.6 P179 L48 # 630
 Kramer, Glen Broadcom
 Comment Type T Comment Status D
 DiscoveryInfo needs to have additional flags to control access based on G/X coexistence.
 The DISCOVERY MPCPDU definition needs to explain the expected ONU behavior for
 different settings of DiscoveryInfo flags.
 SuggestedRemedy
 Update the DISCOVERY MPCPDU definition as shown in kramer_3ca_3_0319.pdf
 (changes are tracked)
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.4.7 P182 L3 # 588
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 This statement implies there is only one value for Sync Pat, delivered before Discovery and
 it never changes. "Generally, the SYNC_PATTERN MPCPDUs are transmitted in
 envelopes with LLID equal to DISC_PLID (see 144.3.3)." Yet we have stated multiple
 times that the SP can be freely changed by the OLT. Note that registered ONUs are
 forbidden from receiving DISC_PLID envelopes.
 SuggestedRemedy
 Change as follows:
 "The OLT announces the synchronization pattern to unregistered ONUs in envelopes with
 the LLID equal to DISC_PLID (see 144.3.3) before issuing a DISCOVERY message.
 Italicize LLID in the above
 Add to the end o the last sentence in this para "until changed by the OLT"
 Proposed Response Response Status W
 PROPOSED REJECT.
 Text states clearly, in general case, pattern is set at discovery time. However, lines 8
 onwards describe how pattern may be changed later on.

Cl 144 SC 144.3.5 P183 L34 # 589
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 This is a poor cross reference "see 144.3.4.7" given the previous explanation of SP1/2/3
 and FEC unprotected areas of US burst.
 SuggestedRemedy
 Change xRef to 143.1.3.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.3.5 P183 L38 # 590
 Remein, Duane Futurewei Technologie

Comment Type T Comment Status D

Does this apply to any SP MPCPDU or only those sent to DISC_PLID? "If a SYNC_PATTERN MPCPDU is received"
 Given that a unregistered ONU doesn't listen to other PLIDS I would guess this only applied to DISC_PLID.

SuggestedRemedy

Change to "a SYNC_PATTERN MPCPDU sent to the DISC_PLID is received"

Proposed Response Response Status W

PROPOSED REJECT.

Context is clear. No changes needed.

Cl 144 SC 144.3.5 P185 L1 # 642
 Kramer, Glen Broadcom

Comment Type TR Comment Status D

In Figure 144-17, the use of the "+" sign is confusing, as it may imply addition of multiple field values.

The footnote 1 is wrong. Discovery process uses DISC_PLID, not BCAST_PLID.

SuggestedRemedy

- 1) Change footnote 1 to "Messages sent on discovery PLID (DISC_PLID)"
- 2) Use "|" (concatenation) instead of "+"
- 3) Show MPCPDU field names exactly as defined in 144.3.4
- 4) Also, the boxes representing the messages may easily be narrowed, so that arrows are more visible.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

- 1) Change footnote 1 to "Messages sent on discovery PLID (DISC_PLID)"
- 2) Use "|" (concatenation) instead of "+"
- 3) Show MPCPDU field names exactly as defined in 144.3.4
- 4) The boxes representing the messages may easily be narrowed, so that arrows are more visible.

Cl 144 SC 144.3.5 P185 L15 # 421
 Hajduczenia, Marek Charter Communicatio

Comment Type T Comment Status D

Figure 144-17 indicates that DISCOVERY MPCPDU is transmitted on a broadcast PLID - looking at Table 144-1, we have BCAST_PLID and DISC_PLID. Based on description in Table 144-1, it seems that DISC_PLID would be more appropriate for DISCOVERY MPCPDU than BCAST_PLID.

SuggestedRemedy

In Figure 144-17, in box for DISCOVERY MPCPDU, change footnote 1 to 4. Add a new footnote 4 with the following text: "Messages sent on a discovery PLID (DISC_PLID, see Table 144-1)"
 Also, change "Messages sent on a broadcast PLID" to read "Messages sent on a broadcast PLID (BCAST_PLID, see Table 144-1)"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #642

Cl 144 SC 144.3.5.1 P186 L11 # 429
 Hajduczenia, Marek Charter Communicatio

Comment Type T Comment Status D

A "should" statement that is not intended to be an optional requirement: "... extra margin that should be reserved at the end of a discovery ..."

SuggestedRemedy

Change to read "extra margin reserved at the end of a discovery"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 144 SC 144.3.5.3 P187 L17 # 591
 Remein, Duane Futurewei Technologie

Comment Type T Comment Status D

While this is true where there are FEC CWs GrantMargin has none. "per each FEC codeword"

SuggestedRemedy

Strike "per each FEC codeword"

Proposed Response Response Status W

PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.3.5.3 P187 L21 # 592
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 Is this receipt of DISCOVERY or REGISTER message "Value: Determined at the time of ONU discovery"?
 SuggestedRemedy
 Change to "Value: Determined at the time of ONU receipt of REGISET message."
 Proposed Response Response Status W
 PROPOSED REJECT.
 GrantMargin is calculated first time when the ONU receives DISCOVERY MPCPDU with Sp1Length, Sp2Length, and Sp3Length. Then, it is recalculated when the ONU receives REGSITER MPCPDU, which may have the same Sp1Length, Sp2Length, and Sp3Length values or different.

Cl 144 SC 144.3.5.3 P187 L23 # 593
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 This note is some what confusing. What is meant by "Separate" grants? And Also "latter" grant?
 SuggestedRemedy
 Reword as follows: "If an ONU receives a grant whose start time is less than GrantMargin, that grant is discarded."
 italicize GrantMargin
 Proposed Response Response Status W
 PROPOSED REJECT.
 Change in intent - the note covers overlapping grants.

Cl 144 SC 144.3.5.3 P187 L38 # 594
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 Wording
 SuggestedRemedy
 Change:
 "This variable indicates the local time at the ONU, at which it REGISTER_REQ MPCPDU is to be transmitted." to
 "This variable indicates the local time at which the ONU should transmit the REGISTER_REQ MPCPDU."
 Proposed Response Response Status W
 PROPOSED REJECT.
 No explanation is provided of what is wrong with the existing text. The variable ReqStart represents a time in the future. The existing text ("to be transmitted") is better than what is proposed in the comment.

Cl 144 SC 144.3.5.5 P188 L24 # 595
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D bucket
 Italicize MsgBurstSync.Count
 SuggestedRemedy
 per comment
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.5.5 P188 L32 # 428
 Hajduczenia, Marek Charter Communicatio
 Comment Type T Comment Status D
 A "should" statement that is not intended to be an optional requirement: " ... synchronization pattern should be balanced or not ..."
 SuggestedRemedy
 Change to read "synchronization pattern is balanced or not"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.3.5.6 P189 L6 # 596
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D PICS
 YASIP (Yet Another Self Implementing Process).
 SuggestedRemedy
 Change:
 "The Discovery Process in the OLT shall implement a single instance of the Discovery Initiation state diagram shown in Figure 144–18." to
 "The OLT shall implement a single instance of the OLT Discovery Process shown in Figure 144–18."
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Update PICS

Cl 144 SC 144.3.5.7 P189 L47 # 597
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D PICS
 YASIP (Yet Another Self Implementing Process).
 SuggestedRemedy
 Change:
 "The Discovery Process in the OLT shall implement multiple instances of the Registration Completion state diagram shown in Figure 144–19 where each instance is associated with a unicast PLID being registered." to
 "The OLT shall implement multiple instances of the OLT Registration Completion state diagram shown in Figure 144–19 where each instance is associated with a unicast PLID being registered."
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Update PICS

Cl 144 SC 144.3.5.8 P190 L35 # 598
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D PICS
 YASIP (Yet Another Self Implementing Process).
 SuggestedRemedy
 Change:
 "The Discovery Process in the ONU shall implement a single instance of the ONU Registration state diagram shown in F figure 144–20." to
 "The ONU shall implement a single instance of the ONU Registration state diagram as shown in Figure 144–20."
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Update PICS

Cl 144 SC 144.3.5.8 P191 L1 # 626
 Kramer, Glen Broadcom
 Comment Type TR Comment Status D
 ONU Registration state diagram needs to check whether the ONU is allowed to register in the given discovery window. This check should be based on granted upstream channels, Rssi limits, X/G coexistence options, and allowed line rates.
 SuggestedRemedy
 Modify the ONU Registration state diagram (Fig 144-20) and add the necessary variable definitions as shown in kramer_3ca_4_0319.pdf.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.6 P191 L41 # 599
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D
 It must be later by now "<subclause introduction text to be supplied later>"
 SuggestedRemedy
 Replace the evil red highlighted text with the text from remein_3ca_2_0319.pdf
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.3.6.3 P192 L40 # 600
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 Wording
 SuggestedRemedy
 Change
 "LLID: LLID value of a an envelope descriptor
 StartTime: Start time of given envelope. Within a single burst, all envelope descriptions
 have the same EnvStartTime value. The StartTime is expressed in units of EQT.
 Length: The length of the envelope, including the envelope header. The Length value is
 expressed in units of EQ." to
 "LLID: The LLID value of the envelope.
 StartTime: The Start time of the envelope. Within a single burst, all envelopes have the
 same EnvStartTime value. The StartTime is expressed in units of EQT.
 Length: The length of the envelope, including the envelope header. The Length value is
 expressed in units of EQ."
 Proposed Response Response Status W
 PROPOSED REJECT.
 Unclear what changes are made and why they are made to begin with.

Cl 144 SC 144.3.6.3 P192 L51 # 601
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 "EnvList[]" should be "EnvList[ch]" (as is used in Description).
 SuggestedRemedy
 per comment
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.6.5 P193 L20 # 602
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 GATE messages are required for each ONU not just on an OLT basis.
 SuggestedRemedy
 Change:
 "The OLT is required to generate GATE MPCPDUs with a periodicity of less than
 GATE_TIMEOUT." to
 "The OLT is required to generate GATE MPCPDUs for each active ONU with a periodicity
 of less than GATE_TIMEOUT."
 Proposed Response Response Status W
 PROPOSED REJECT.
 Unclear what problem the proposed change addresses.

Cl 144 SC 144.3.6.6 P193 L45 # 603
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 xRef to an xRef to an ... 144.3.6.6 points to 144.3.5.5 which points to 144.3.4.1.
 SuggestedRemedy
 Change xRef in 144.3.6.6 to 144.3.4.4
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.3.6.7 P193 L46 # 604
 Remein, Duane Futurewei Technologie
 Comment Type E Comment Status D
 In most all cases we refer to GATE not Gate
 SuggestedRemedy
 Scrub the draft and change the word "Gate" to "GATE" (or even worse gate to GATE)
 where it refers to a GATE message.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.3.6.8 P194 L39 # 605
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 No such variable/field as MsgGate.ChMap.
 SuggestedRemedy
 Change to MsgGate.ChannelMap (3x)
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Per comment, also make change on line 17 (Fig 144-21, KEEP_ALIVE_GATE state)

Cl 144 SC 144.3.7 P197 L37 # 426
 Hajduczenia, Marek Charter Communicatio
 Comment Type TR Comment Status D
 Text on Discovery process in multi-rate systems is needed and missing
 SuggestedRemedy
 Use hajduczenia_3ca_5_0319.pdf + add new PICS to address the new "shall" and "should" requirements
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.4.1 P198 L6 # 632
 Kramer, Glen Broadcom
 Comment Type T Comment Status D
 Section 144.4.1 uses "unicast CC_REQUEST" 4 times and "unicast CC_RESPONSE" once. Emphasizing that these are unicast messages is confusing because no such emphasis is made for other messages. Is the intention here to require the CCPDUs to use unicast MAC address instead of a well-known MAC Control address? I don't think so. All these messages use the globally-assigned DA 01-80-C2-00-00-01.
 SuggestedRemedy
 Explain what is meant by "unicast" in CCPDU context (unicast MAC address or unicast logical link) or simply remove the word "unicast"
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Remove the word "unicast" in each references instance

Cl 144 SC 144.4.1 P198 L7 # 606
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D bucket
 What is meant here by the term "channel lineup"? Channel capability (which I would define as synonymous with channel lineup) is known through the Discovery process.
 SuggestedRemedy
 in 7 places change:
 "channel lineup" to
 "channel status"
 Locations (line): 7, 11, 14, 17, 20, 30, 33 (all pg 198)
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.4.1 P198 L8 # 607
 Remein, Duane Futurewei Technologie
 Comment Type ER Comment Status D bucket
 What is this "CCPDU"?
 SuggestedRemedy
 Defined this FLA before using it: "Channel Control PDU (CCPDU)"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.4.1.1 P199 L46 # 609
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 This statement is almost implying the OLT shuts down a DS channel when there are no ONUs left on that channel. This would make it difficult to bring up a PON. "The OLT data path and transmitter for the given channel may remain active if there are other ONUs configured to receive the data transmitted on this downstream channel."
 SuggestedRemedy
 Change to:
 "The OLT data path and transmitter for the given channel remains active based solely on OLT provisioning."
 Proposed Response Response Status W
 PROPOSED REJECT.
 Current text is correct as is.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.4.1.3 P199 L41 # 608
 Remein, Duane Futurewei Technologie

Comment Type TR Comment Status D

This statement is almost implying the OLT shuts down an US channel when there are no ONUs left on that channel. This would make it difficult to bring up a PON. "The OLT data path and receiver for the given channel may remain active if there are other ONUs configured to transmit data on this upstream channel."

SuggestedRemedy

Change to:
 "The OLT data path and receiver for the given channel remains active based solely on OLT provisioning."

Proposed Response Response Status W

PROPOSED REJECT.

Current text is correct as is.

Cl 144 SC 144.4.1.3 P199 L48 # 610
 Remein, Duane Futurewei Technologie

Comment Type TR Comment Status D

Why enable a channel to disable it??

SuggestedRemedy

Change: "enable" to "disable"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 144 SC 144.4.1.3 P199 L52 # 611
 Remein, Duane Futurewei Technologie

Comment Type TR Comment Status D

Steps 2 & 4 create a window of uncertainty where the ONU may have disabled an US channel but is still receiving grants for it.

SuggestedRemedy

Change 2) from:
 "2) MAC Control Client in the OLT continues to grant the upstream channel UCn on the target ONU." to
 "2) MAC Control Client in the OLT may continue to grant the upstream channel UCn on the target ONU."
 Change the last sentence of 3) from
 "ONU also purges any pending upstream transmission envelopes scheduled for the now disabled upstream channel." to
 "The ONU also purges any pending upstream transmission envelopes scheduled for the now disabled upstream channel and ignore any subsequent grants received."
 and change 4) from:
 "4) MAC Control Client in the OLT stops granting the upstream channel UCn on the target ONU only when the given upstream channel is confirmed to have been disabled on the ONU." to
 "4) MAC Control Client in the OLT shall stop granting the upstream channel UCn on the target ONU when the given upstream channel is confirmed to have been disabled on the ONU."

Update PICS and format variables in the above appropriately.

Proposed Response Response Status W

PROPOSED REJECT.

Since the channel is disabled, any transmission will not obviously leave on the disabled channel. No uncertainty.

Cl 144 SC 144.4.1.5 P200 L30 # 612
 Remein, Duane Futurewei Technologie

Comment Type E Comment Status D

Wording

bucket

SuggestedRemedy

Change:
 "allowing ONU notify the OLT" to
 "allowing the ONU to notify the OLT"

Proposed Response Response Status W

PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.4.2 P200 L45 # 629
 Kramer, Glen Broadcom
 Comment Type T Comment Status D
 Action item "to rewrite the definitions of CCPDUs using template from MPCPDUs (see 144.3.4)."
 SuggestedRemedy
 Replace subclause 144.4.2 with the text and drawings provided in kramer_3ca_7_0319.pdf.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.4.3.5 P207 L7 # 613
 Remein, Duane Futurewei Technologie
 Comment Type TR Comment Status D
 MsgChRequest not defined in "CC_REQUEST CCPDU, as defined in 144.4.2.1" or anywhere else I could search for.
 Same issue for MsgChResponse.
 SuggestedRemedy
 Add a suitable definitions
 Proposed Response Response Status W
 PROPOSED REJECT.
 MsgChRequest is just a macro for all parameters in CC_REQUEST CCPDU, as defined in 144.4.2.1

Cl 144 SC 144.4.3.5 P207 L18 # 427
 Hajduczenia, Marek Charter Communicatio
 Comment Type T Comment Status D
 Text makes references to "CCPDU Processing State Diagram" in ONU and OLT, matching state diagrams. However, there are also references to "CCP Processing state diagram" in 144.4.3.6 - these terms should be aligned
 SuggestedRemedy
 Change all instances of "CCP Processing state diagram" to "CCPDU Processing state diagram" (2 in total, both in 144.4.3.6)
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.4.3.6 P207 L20 # 654
 Kramer, Glen Broadcom
 Comment Type TR Comment Status D postdeadline
 Comment #625 made it clear that we had an architectural issue with the channel Control protocol. On one side, we wanted CCP to specify timer-based automatic retransmission. On the other side, we need CCP to support multicast and broadcast operation, where such automatic retransmission is not possible. Comment #625 had to resort to an implementation escape clause, which is not good for interoperability.
 Another problem is that the retransmission of frames due to loss/corruption is not in scope for 802.3 (apart from CSMA/CD-MAC-specific mechanisms).

SuggestedRemedy
 The proposal is to remove the cc_timer and associated states from CC_REQUEST Processing SD in the OLT. In effect, the decision to retransmit or not, how soon, and how many times will be deferred to CCP Client. The client can also decide whether CC_REQUEST goes on unicast or multicast MLID and how to handle missed response(s) in multicast such case.
 New OLT state diagram is shown in kramer_3ca_12_0319.pdf
 These changes are also reflected in the updated block diagrams in kramer_3ca_8a_0319.pdf
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 144 SC 144.4.3.6 P207 L22 # 625
 Kramer, Glen Broadcom
 Comment Type T Comment Status D
 "The CCP Process in the OLT shall implement multiple instances of the CCP Processing state diagram shown in Figure 144–29 where each instance is associated with a MLID being registered."
 MLID "being registered" does not mean that it was successfully registered. Alos, we may want to allow operators to switch channles in mutiple ONUs at once, using broadcast or multicals MLID.
 SuggestedRemedy
 1) Replace "with a MLID being registered." with "with each registered MLID."
 2) Add the following text after the "with each registered MLID.":
 "Implementations may also allow instances of CCP Processing state diagrams to be associated with broadcast or multicast MLIDs, if any are defined. In such instances, handling of <i>ccp_timer</i> expiration events is out-of-scope of this standard."
 3) Make the following sentence ("The ONU shall...") a separate paragraph.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Proposed Responses

IEEE P802.3ca D1.5 25/50G-EPON Task Force 6th Task Force review comments

Cl 144 SC 144.4.3.6 P208 L26 # 614
Remein, Duane Futurewei Technologie

Comment Type TR Comment Status D

No definition for ActionResponseCode (should this be ActionResultCode?)

SuggestedRemedy

Add a suitable definition

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change ActionResponseCode to ActionResultCode to match name in Table 144-10

Cl 144 SC 144.5 P209 L1 # 425
Hajduczenia, Marek Charter Communicatio

Comment Type TR Comment Status D

PICS needed and missing

SuggestedRemedy

Use hajduczenia_3ca_4_0319.pdf

Proposed Response Response Status W

PROPOSED ACCEPT.