Cl **00** *SC* **0** *P* *L* # 126

Mandin, Jeff

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

There should be PICS for the encoder/decoder and scrambler/descrambler that are inherited from cl49

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* *L* # 127

Mandin, Jeff

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

There are several important comments against draft 2.2 which were deferred for resubmission against 3.0.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Resolve the following comments in http://www.ieee802.org/3/av/public/2009_01/3av_0901_comments_d2_2_accepted.pdf according to the resolutions indicated in that file:
2803
2804
2805
2807
2879
2880

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* *L* # 31

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2868)]
Confusing for abreviation: RS=Reconciliation Sublayer vs. RS=Reed-Solomon

SuggestedRemedy

??

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **0** *L* **0** # 43

Turner, Michelle

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

This document has met all editorial requirements.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **1** *L* **1** # 68

Mandin, Jeffrey PMC-Sierra

Comment Type **TR** *Comment Status* **X**

*** Comment submitted with the file 31599900024-ballot_comments.csv attached ***

CSV file with multiple comments is attached.
The "multiple comment" upload facility would not accept the csv file produced by the 802.3 commentary tool.

SuggestedRemedy

See CSV file for approximately 40 comments.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **2** *L* **1** # 73

Law, David 3Com

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

The abstract is not of the usual format, the Task Force Chair to work with the Working Group Chair to develop the abstract - a start is provided in the suggested remedy.

SuggestedRemedy

This amendment to IEEE Std 802.3-2008 extends Ethernet Passive Optical Networks (EPONs) operation to 10Gb/s providing both symmetric, 10Gb/s downstream and upstream, and asymmetric, 10Gb/s downstream and 1Gb/s upstream, data rates. It specifies extensions to the 10Gb/s Reconciliation Sublayer, 10GBASE-PR symmetric and 10/1GBASE-PRX Physical Coding Sublayers (PCSs) and Physical Media Attachments (PMAs), and Physical Medium Dependent sublayers (PMDs) that support passive optical splitters ratios of 1:16 and 1:32, and distances of at least 10 km and at least 20 km.
An additional MAC Control opcode is also defined to provided organization specific extension operation.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **33** *L* **7** # 75

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Editor's notes at beginning of each clause should be updated to reference IEEE 802.3-2008 instead of P802.3ay(D2.2).

SuggestedRemedy

See comment.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.1** *P* **19** *L* **54** # 30

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2863)]
Following improvements to 31C.1, need to add two more references, either here or in Annex A.

SuggestedRemedy

Add ITU-T G.984 and ITU-T G.983 to the references.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.3** *P* **20** *L* **3** # 26

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2854)]
For TIA-455-127-A, you have already given the (year) date just before the title. Also, internationally, there is no month 00 ;)

SuggestedRemedy

Delete 'Date:11/00/06'. Consider deleting 'Revision:A'.

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **20** *L* **21** # 23

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2841)]
Text "in either one or both directions." would seem to allow to say that 10G-EPON can perate at 10Gb/s upstream only, which is not true. Text needs clarification

SuggestedRemedy

Change "in either one or both directions." to "in either downstream or both downstream and upstream directions."

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4** *P* **20** *L* **28** # 20

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2829)]
There is superfluous "data rate" hanging around without much need. If the value is expressed in "Gb/s", there is little doubt it is data rate.

SuggestedRemedy

remove "data rate" in lines 18, 21, 24, 27

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.4.254** *P* **14** *L* **41** # 44

Obara, Satoshi Fujitsu Component LT

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

The OUI is defined by IEEE stds 802 overview and archtecture.

SuggestedRemedy

Change "see http://standards.ieee.org/regauth/index.html" into "IEEE std 802-2001".

Proposed Response *Response Status* **O**

Cl **01** *SC* **1.5** *P* **20** *L* **54** # 27

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2856)]
Distributed Feedback Laser (abbreviation is used in 67A.3 and 75.5.1)

SuggestedRemedy

Change to
distributed feedback (no capitals, no 'laser')

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.2.2.1** *P* **17** *L* **35** # 116

Barrass, Hugh Cisco Systems, Inc.

Comment Type **TR** *Comment Status* **X**

Even if we do decide to add an opcode for unspecified communications, it does not justify a whole new entity for one opcode.
EXTENSION can sit within oMACControlFunctionEntity

SuggestedRemedy

Don't make a new entity, place aEXTENSIONMACCtrlFramesTransmitted and aEXTENSIONMACCtrlFramesReceived into oMACControlFunctionEntity

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.1.1.2a** *P* **20** *L* **3** # 115

Barrass, Hugh Cisco Systems, Inc.

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

2 points:
1. This is one of more than 100 instances of ""resetable"" - if you want to correct it, you should at least put a note in to direct the editor to fix all instances in the next revision.
2. When highlighting a spelling error, you should at least check your own speling - change ""sentance"" to ""sentence.""

SuggestedRemedy

change ""sentance"" to ""sentence.""
Change parenthetic note to read ""(note second "t" in "nonresettable" is missing in this and other instances)""

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.2.1.2** *P* **26** *L* **12** # 24

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2843)]
"10/1GBASE-PRX Clause 76 10/1G-EPON 10 Gb/s 64B/66B with 1 Gb/s 8B/10B" - someone reading this may think we use both coding schemes in the same data path. This needs some clarification

SuggestedRemedy

Change "10/1GBASE-PRX Clause 76 10/1G-EPON 10 Gb/s 64B/66B with 1 Gb/s 8B/10B" to read "10/1GBASE-PRX Clause 76 10/1G-EPON 10 Gb/s 64B/66B downstream and 1 Gb/s 8B/10B upstream". The same for line 19

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.7.1.5** *P* **27** *L* **19** # 63

Hajduczenia, Marek ZTE Corp.

Comment Type **TR** *Comment Status* **X**

Definition of aGoodLLID says "A count of frames received that contain a valid SLD field, as defined in 65.1.3.3.1 or 76.2.6.1.3.1, as appropriate, but do not pass the CRC--8 check as defined in 65.1.3.3.3 or 76.2.6.1.3.3, as appropriate.;" which is incorrect. a GoodLLID should be incremented when a frame has a valid SLD and passes CRC-8 check (hence has good LLID as the name suggest). Compare also definition with aBadLLID in 30.3.7.1.8, where it says "and pass the CRC-8 check".

SuggestedRemedy

in definition of aGoodLLID change "as appropriate, but do not pass the CRC--8 check as defined in 65.1.3.3.3 or 76.2.6.1.3.3, " to read "as appropriate, and passes the CRC--8 check as defined in 65.1.3.3.3 or 76.2.6.1.3.3, "

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.15** *P* **29** *L* **4** # 64

Hajduczenia, Marek ZTE Corp.

Comment Type **TR** *Comment Status* **X**

30.5.1.1.15 aFECCorrectedBlocks and 30.5.1.1.16 aFECUncorrectableBlocks were updated in 10G-EPON. Why 30.5.1.1.13 aFECAbility and 30.5.1.1.14 aFECmode are not updated ? They can still be read and have some undefined value for 10G-EPON.

SuggestedRemedy

Insert the following text before 30.5.1.1.15 aFECCorrectedBlocks
BLOCK 1:
"30.5.1.1.13 aFECAbility
Change the behaviour definition to read as follows:
A read-only value that indicates if the PHY supports a FEC sublayer for forward error correction (optional for 65.2 and Clause 74, mandatory for Clause 76).
If a Clause 45 MDIO Interface to the PCS is present, then this attribute will map to FEC capable bit in FEC capability register (see 45.2.8.2) for 1000BASE-PX or 10GBASE-R FEC ability bit in 10GBASE-R FEC ability register (see 45.2.1.84) or 10 Gb/s FEC ability bit in 10GBASE-PR and 10/1GBASE-PRX FEC ability register (see 45.2.3.29).
"
"or 10GBASE-R FEC ability bit in 10GBASE-R FEC ability register (see 45.2.1.84)" was added, since 10GBASE-R has such a bit in register and it was not mentioned in there.
BLOCK 2:
"30.5.1.1.14 aFECmode
Change the behaviour definition to read as follows:
A read-write value that indicates the mode of operation of the FEC sublayer for forward error correction (optional for 65.2 and Clause 74, mandatory for Clause 76).
A GET operation returns the current mode of operation of the PHY. A SET operation changes the mode of operation of the PHY to the indicated value. When Clause 73 Auto-Negotiation is enabled a SET operation is not allowed and a GET operation maps to the variable FEC enabled in Clause 74. A SET operation is not allowed and a GET operation maps to "enabled" for Clause 76.
If a Clause 45 MDIO Interface to the PCS is present, then this attribute will map to FEC enable bit in FEC control register (see 45.2.8.3) for 1000BASE-PX or FEC enable bit in 10GBASE-R FEC control register (see 45.2.1.85) or 10 Gb/s FEC enable bit in 10GBASE-PR and 10/1GBASE-PRX FEC control register (see 45.2.3.30).;
"
Original reference "45.2.7.3" for 1000BASE-PX was incorrect - 45.2.8.3 is probably correct.

Proposed Response *Response Status* **O**

Cl **31A** *SC* **31A** *P* **32** *L* **10** # 46

Barrass, Hugh Cisco Systems, Inc.

Comment Type **TR** *Comment Status* **X**

There are a myriad of protocols that allow transmission of vendor specific information, there is no need to add MAC control frames to that number.
There is no objective for this addition, neither is there any mention in the PAR or 5 criteria of expanding the definition of MAC control frames to include general purpose, vendor specific communication.

SuggestedRemedy

Delete the changes to the Reserved row of Table 31A-1; Delete Table 31A-8; Delete Annex 31C.

Proposed Response *Response Status* **O**

Cl **31C** *SC* **31C.3.1** *P* **36** *L* **28** # 74

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
The ITU OUI should be explicitly shown in Figure 31C-1, just as the Opcode and Length/Type values are shown.

SuggestedRemedy

Add the opcode 00-19-A7 to the figure.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1** *P* **39** *L* **43** # 28

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2858)]
Thanks for adding the third column in Table 45-3. I wasn't clear enough in describing how it is used in P802.3ba: it's to allow the reader to click to the definition of the register concerned.

SuggestedRemedy

Please change '75' to a clickable '45.2.1.11'.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.10** *P* **34** *L* **34** # 77

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Table 45-11 is being changed. In the base document, this table is in subclause 45.2.1.10. Here, it is shown as part of 45.2.1.10.1.

SuggestedRemedy

Move table back into 45.2.1.10.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.10.1** *P* **34** *L* **37** # 117

Barrass, Hugh Cisco Systems, Inc.

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

The preferred approach to inserted subclauses is to use letters to differentiate the inserted subclause from the existing ones in the base document.
Look at other projects such as 802.3at, 802.3az and 802.3ba for examples.

SuggestedRemedy

Change 45.2.1.10.1 to 45.2.1.10.1a, delete ""renumber remaining subclauses in 45.2.1.10 as appropriate"" in the note.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.10.1** *P* **35** *L* **34** # 78

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Editing instructions are confusing. One row is being changed and one row is being added.

SuggestedRemedy

Change instructions to "Change Table 45-11 as follows."

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.11** *P* **36** *L* **1** # 120

Barrass, Hugh Cisco Systems, Inc.

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

The preferred approach to inserted subclauses is to use letters to differentiate the inserted subclause from the existing ones in the base document.Look at other projects such as 802.3at, 802.3az and 802.3ba for examples.

SuggestedRemedy

Change 45.2.1.11 to 45.2.1.11a, delete ""renumber succeding paragraphs and tables"" in the note.Change the table designation to 45-12a

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.11** *P* **36** *L* **1** # 128

Mandin, Jeff

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

The "P2MP PMA/PMD Abilities Register" has nothing to do with P2MP eg. it has nothing to do w/ 1G-EPON.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Globally change name of "P2MP PMA/PMD Abilities Register" to "10G-EPON PMA/PMD Abilities Register".

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.4.1** *P* **34** *L* **29** # 76

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Editing instructions should be kept as close to the changes as possible. In this instance, the table to be changed is on the next page, even though the subclause heading is on this page. It needs to be very clear that the table on the next page is actually part of 45.2.1.6 and not part of 45.2.1.10.1.

SuggestedRemedy

Move text beginning with 45.2.1.10 after Table 45-7.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.6** *P* **35** *L* **8** # 118

Barrass, Hugh Cisco Systems, Inc.

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

A number of codepoints are undefined - e.g. 11011, 11100 etc.

SuggestedRemedy

Add 2 lines:
11011 reserved
111xx reserved

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.6.1** *P* **44** *L* **46** # 29

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2862)]
Need to update 45.2.1.6.1 PMA/PMD type selection (1.7.3:0) because you have changed from the former 4-bit PMA/PMD type selection to 5-bit PMA/PMD type selection.

SuggestedRemedy

Show revision of
45.2.1.6.1 PMA/PMD type selection (1.7.3:0)
The PMA/PMD type of the PMA/PMD shall be selected using bits 3 through 0.
to
45.2.1.6.1 PMA/PMD type selection (1.7.4:0)
The PMA/PMD type of the PMA/PMD shall be selected using bits 4 to 0.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3** *P* **39** *L* **7** # 121

Barrass, Hugh Cisco Systems, Inc.

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

Is there anything about these FEC control and status registers that suggests that they will NEVER be usable by any other PHY type at any time in the future?If not, the PHY type should not be captured in the register names.

SuggestedRemedy

Change register names (and related subclauses) to remove the PHY names: e.g. FEC ability register, FEC control register

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.29** *P* **39** *L* **44** # 119

Barrass, Hugh Cisco Systems, Inc.

Comment Type **TR** *Comment Status* **X**

If the FEC does not indicate errors to higher layers by invalidating the contents of the FEC block when uncorrectable errors are detected then the probability of false packet acceptance increases dramatically. Because an uncorrectable FEC block contains multiple errors, the CRC check will lose its property that it will always detect single and multiple bit errors.Therefore, the probability of false packet acceptance changes.
Instead of P(false packet) ~= P(single error - 10^-12) ^ 4 . 2^-32
It becomes P(false packet) = P(uncorrectable FEC) . 2 ^-32
Unless it has been proved that this latter equation still results in a Mean Time to False Packet Acceptance greater than 10^10 years then this function is unacceptable

SuggestedRemedy

Delete 3.74.1 & 3.75.1
Change the PHY clauses to make it clear that error indication is mandatory.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.29** *P* **39** *L* **48** # 122

Barrass, Hugh Cisco Systems, Inc.

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

There is no need to specify the PHY types in the description for the control bitAlso in 45.2.3.29.2 description states that this bit is only used for 10GBASE-PR or 10/1GBASE-PRX and is mandatory for both these PHY types - which seems to indicate that the bit is redundant.

SuggestedRemedy

Change the description in Table 45-108 for 10Gb/s FEC ability to read:This bit indicates that the PCS supports FEC for 10Gb/s PHYs or for the 10GB/s direction of dual speed PHYs.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.29** *P* **45** *L* **47** # 5

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2796)]
wordsmithing/consistency

SuggestedRemedy

Change:
"This bit indicates that the PCS supports ...."
to
"A read of 1 in this bit indicates that the PCS supports ...."

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.29** *P* **45** *L* **48** # 6

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2797)]
wordsmithing

SuggestedRemedy

Change:
"(mandatory for 10/1GBASE-PRX or 10GBASE-PR)"
to
"(always reads as 1 for 10/1GBASE-PRX or 10GBASE-PR)"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.29.2** *P* **40** *L* **10** # 79

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Typo.

SuggestedRemedy

Replace or with of.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.29.2** *P* **40** *L* **13** # 123

Barrass, Hugh Cisco Systems, Inc.

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

Reference to 45.2.7.2 is incorrect.

SuggestedRemedy

Change to 45.2.8.2

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.30.1** *P* **40** *L* **35** # 80

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
The FEC enable error indication control bit is only valid if the FEC error indication ability is set. The description should indicate that if FEC error indication ability is not available then writing to this bit has no effect. If FEC error indication ability is not available, then perhaps this bit should return a value of 0 when read and ignore writes.

SuggestedRemedy

Add a sentence, "If FEC error indication ability in 3.47.1 reads 0, then a read of this bit will return 0 and writes are ignored."

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.30.2** *P* **41** *L* **2** # 124

Barrass, Hugh Cisco Systems, Inc.

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

Reference to 45.2.7.3 is incorrect.

SuggestedRemedy

Change to 45.2.8.3

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.30.2** *P* **47** *L* **1** # 8

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2799)]
wordsmithing + incorrect reference

SuggestedRemedy

Change
"The register describing ability to enable forward error correction in the 10/1GBASE-PRX upstream is specified in 45.2.7.3"
to
"The register for enabling and disabling forward error correction in the 10/1GBASE-PRX upstream is specified in 45.2.8.3"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.31** *P* **41** *L* **8** # 81

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Subclause 76.3.3.1.2 does not contain a definition of this counter.

SuggestedRemedy

Add definition.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.31** *P* **47** *L* **8** # 61

Hajduczenia, Marek ZTE Corp.

Comment Type **TR** *Comment Status* **X**

Probably incorrect reference. Text says "See 76.3.3.1.2 for a definition of this counter" but 76.3.3.1.2 contains definition of only "decode_failures" which is "Counter that holds the number of consecutive decoding failures" and "sh_wndw_cnt" which is "Count of the number of sync headers checked within the current 62-block window", both of which are irrelavent at this point.

SuggestedRemedy

Either remove this reference or fix it.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.32** *P* **41** *L* **28** # 82

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Subclause 76.3.3.1.2 does not contain a definition of this counter.

SuggestedRemedy

Add definition.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.33** *P* **41** *L* **1** # 125

Barrass, Hugh Cisco Systems, Inc.

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

Is it necessary to define another BER monitor, separate to 3.33.13:8

SuggestedRemedy

Delete the new register and edit the extra requirements for 10G EPON into the definition for 3.33.13:8 & related register. Make appropriate changes in PHY clauses.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.33** *P* **42** *L* **11** # 129

Mandin, Jeff

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

Default value for high BER in BER monitor correspond to 10^-4. They should correspond to eg. 10^-2
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.33** *P* **48** *L* **8** # 62
Hajduczenia, Marek ZTE Corp.

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

Table 45-111 has incorect bit order. 3.80.0:7 should be in row 3, while 3.80.8:15 in row 2. Comare e.g. Table 45-112 or 45-108.

SuggestedRemedy

Fix it: 3.80.0:7 should be in row 3, while 3.80.8:15 in row 2.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.34.2** *P* **43** *L* **7** # 83
Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
No PICS statement for this shall.

SuggestedRemedy

Add PICS or remove shall.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.2** *P* **50** *L* **19** # 47
Hajduczenia, Marek ZTE Corp.

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

[Submitted on behalf of Runjian Lin]
upstream direction (10/1G-EPON)

SuggestedRemedy

in the upstream direction (10/1G-EPON)

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.2** *P* **56** *L* **20** # 3
Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2792)]
Incorrect PHY name and clause references.

SuggestedRemedy

Change:
"The P2MP PHYs for the 10/10G-EPON use the 10GBASE-PR PCS (see Clause 75) and PMA (see Clause 76). The P2MP PHYs for 10/1G-EPON use the 10GBASE-PR PCS and PMA for the downstream direction (see Clause 75 and Clause 76 respectively) and 1000BASE-X PCS (see Clause 65) for the upstream direction."
to:
"The P2MP PHYs for the 10/10G-EPON use the 10GBASE-PR PCS and PMA (see Clause 76). The P2MP PHYs for 10/1G-EPON use the 10GBASE-PRX PCS and PMA (see Clause 76)"

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.2.1** *P* **50** *L* **34** # 48
Hajduczenia, Marek ZTE Corp.

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

[Submitted on behalf of Runjian Lin]
and 10/1G-EPON, respectinely..

SuggestedRemedy

and 10/1G-EPON, respectively.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.2.1** *P* **50** *L* **34** # 65
Hajduczenia, Marek ZTE Corp.

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

Typo "and 10/1G-EPON, respectinely"

SuggestedRemedy

Change to "and 10/1G-EPON, respectively."

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.3** *P* **51** *L* **29** # 49

Hajduczenia, Marek ZTE Corp.

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

[Submitted on behalf of Runjian Lin]
of at least 1:32;

SuggestedRemedy

of at least 1:32.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.3** *P* **54** *L* **1** # 84

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Table 56-3 seems incorrect. It says that a 10GBASE-PR device must implement both Clause 64 and Clause 77.

SuggestedRemedy

Modify table to show that 10G symmetric devices only support Clause 77.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.3** *P* **54** *L* **8** # 85

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
In the Clause 77 column it uses the acronym MPMCS. Is this correct?

SuggestedRemedy

Change to MPMC.

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.3** *P* **57** *L* **4** # 4

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2794)]
Wordsmithing

SuggestedRemedy

Change:
"Additionally, EFM introduces a family of Physical Layer signaling systems which are derived from 10GBASE-R, but which include a 10GBASE-PR RS, PCS and PMA adapted for 10G-EPON, along with a mandatory FEC capability, as defined in Clause 76."
to:
"Additionally, EFM introduces a family of Physical Layer signaling systems which are derived from 10GBASE-R, but which include RS, PCS and PMA sublayers adapted for 10G-EPON, along with a mandatory FEC capability, as defined in Clause 76."

Proposed Response *Response Status* **O**

Cl **56** *SC* **56.1.3** *P* **58** *L* **24** # 37

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2884)]
Since several drafts ago we have removed units from " Rate" column header, all entries in this column should have units added to them.

SuggestedRemedy

Add "Mb/s" to rate for 10PASS-TS and 2BASE-TL

Proposed Response *Response Status* **O**

Cl **75** *SC* **75.1** *P* **69** *L* **428** # 32

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2871)]
Suggest some changes in Table 75-1 to avoid ambiguity. Line 22 actually talking about nominal operating distance, not clear what >10km and >20km actually means?

SuggestedRemedy

Change "Maximum reach" as "(nominal) operating distance", take out >=.
Maybe consider to add a footnote such as:
"...exceeds the operational range requirement while meeting all optical specifications and power budget is considered compliant."
(-2, +3) is confusing, suggest to change to wavelength range as 1570 to 1580.

Proposed Response *Response Status* **O**

Cl **75** *SC* **75.4** *P* **77** *L* **22** # 86

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Note that there is only two . . .

SuggestedRemedy

Note that there are only two . . .

Proposed Response *Response Status* **O**

Cl **75** *SC* **75.4.1** *P* **77** *L* **22** # 45

Methley, Steven CONSULTANT

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

'There is..' should be 'There are..'

SuggestedRemedy

Note that there are only two groups of transmit powers.

Proposed Response *Response Status* **O**

Cl **75** *SC* **75.4.1** *P* **77** *L* **22** # 130

Mandin, Jeff

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

The header of table 75-5 is in disagreement with the text on page 77 lines 22-25 (the grouping of transmitters).
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"The first group is shared by 10GBASE-PR-D1, 10/1GBASE-PRX-D1, 10GBASE-PR-D2, and 10/1GBASE-PRX-D2. The second group is shared by 10GBASE-PR-D3 and 10/1GBASE-PRX-D3."
to:
"The first group is shared by 10GBASE-PR-D1, 10/1GBASE-PRX-D1, 10GBASE-PR-D3, and 10/1GBASE-PRX-D3. The second group is shared by 10GBASE-PR-D2 and 10/1GBASE-PRX-D2."

Proposed Response *Response Status* **O**

Cl **75** *SC* **75.4.1** *P* **77** *L* **23** # 2

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2790)]
In the last Denver meeting, the number of Columns in Table 75-5 was reduced from three to two, combining PR-D1/PRX-D1 and PR-D3/PRX-D3, because those values are identical, while, in Table 75-6, PR-D2 and PR-D3 Columns still remain, although theirs are also identical.
It seems logical not to duplicate the column, indicating properly the commonality over classes. But it also seems confusing for readers to distinguish three power budget classes without seeing three Columns.
Additionally the texts, started with 'Note that there is only two groups.', are incorrect. The first group should be shared by D1 and D3, and the second group by D2.

SuggestedRemedy

Revive the old three-Column table for Table 75-5, and fill all the PR-D3/PRX-D3 values same as those of PR-D1/PRX-D1. Or, fill the PR-D3/PRX-D3 Column across with the text 'same as 10GBASE-PR-D1 and 10/1GBASE-PRX-D1 transmit parameters'.
Delete all the notes about 'two groups of transmit parameters' in Lines 22-25
Table 75-6 and Table 75-11 should also be revisited.

Proposed Response *Response Status* **O**

Cl **75** *SC* **75.4.1** *P* **77** *L* **23** # 33

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2878)]
The description of OLT PMDs is wrong.

SuggestedRemedy

Change "The first group is shared by 10GBASE.PR.D1, 10/1GBASE.PRX.D1, 10GBASE.PR.D2, and 10/1GBASE.PRX.D2. The second group is shared by 10GBASE.PR.D3 and 10/1GBASE.PRX.D3." to "The first group is shared by 10GBASE.PR.D1, 10/1GBASE.PRX.D1, 10GBASE.PR.D3, and 10/1GBASE.PRX.D3. The second group is shared by 10GBASE.PR.D2 and 10/1GBASE.PRX.D2."

Proposed Response *Response Status* **O**

Cl **75** *SC* **75.4.1** *P* **77** *L* **2325** # 17

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2820)]
The first group is shared by 10GBASE-PR-D1, 10/1GBASE-PRX-D1, 10GBASE-PR-D2, and 10GBASE-PRX-D2. The second group is shared by 10GBASE-PR-D3 and 10/1GBASE-PRX-D3

SuggestedRemedy

Change to "The first group is shared by 10GBASE-PR-D1, 10/1GBASE-PRX-D1, 10GBASE-PR-D3, and 10/1GBASE-PRX-D3. The second group is shared by 10GBASE-PR-D2 and 10/1GBASE-PRX-D2"

Proposed Response *Response Status* **O**

Cl **75** *SC* **75.4.1** *P* **77** *L* **35** # 18

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2821)]
In the 3rd row of Table 75-5, Wavelength (range) 1574 to 1580 nm

SuggestedRemedy

Change Wavelength(range) to "1575 to 1580" nm
The same change is applied to Table 75-11

Proposed Response *Response Status* **O**

Cl **75** *SC* **75.4.1** *P* **77** *L* **45** # 131

Mandin, Jeff

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

Eye mask tables would be clearer with references
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

1. To the text "transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3}" add a footnote indicating "as defined in figure 75-8"
2. On page 81 line 41: To the text "transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3}" add a footnote indicating "as defined in figure 75-8"
3. On page 82, line 20: To the text "Transmitter eye mask definition {X1, X2, Y1, Y2, Y3}", add a footnote indicating "as defined in figure 75-7"

Proposed Response *Response Status* **O**

Cl **75** *SC* **75.7.16** *P* **90** *L* **25** # 105

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Does the reference to 60.7.13.2 provide clear enough instructions on how to perform this measurement? If you look at Clause 60, it talks about TP3 and TP4 instead of TP7 and TP8. It also talks about 8B/10B patterns instead of 64B/66B patterns.

SuggestedRemedy

If group feels reference is sufficient, no change is necessary. Otherwise, draft text that helps to clarify the differences between Clause 60 and Clause 75 measurements.

Proposed Response *Response Status* **O**

Cl **75B** *SC* **75B.2.1** *P* **107** *L* **38** # 15

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2811)]
The 10 Gb/s downstream transmission uses 1574-1580 nm.....

SuggestedRemedy

The 10 Gb/s downstream transmission uses 1575-1580 nm.....

Proposed Response *Response Status* **O**

Cl **75B** *SC* **75B.2.1** *P* **108** *L* **1** # 59

Hajduczenia, Marek ZTE Corp.

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

Table 75B-1 and 75B-2 would be more complete if it was explained like in Table 75-14 that "Other fiber types are acceptable if the resulting ODN meets channel insertion loss and dispersion requirements.". Otherwise, it seems we redefeine requirements for fiber in two different places in two different ways.

SuggestedRemedy

Add footnote "Other fiber types are acceptable if the resulting ODN meets channel insertion loss and dispersion requirements." to parameter name "Fiber type" in Table 75B-1 and 75B-2

Proposed Response *Response Status* **O**

Cl **75B** *SC* **75B.2.2** *P* **109** *L* **45** # 50

Hajduczenia, Marek ZTE Corp.

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

[Submitted on behalf of Runjian Lin]
Text "An OLT ..downstream wavelength" is not regarding upstrean transmission.

SuggestedRemedy

Move this two lines to Page 107, Line 39-40

Proposed Response *Response Status* **O**

Cl **75C** *SC* **75C.1** *P* **114** *L* **1** # 67

Dawe, Piers

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

Clause 75 ends with page 114 (blank) and Clause 76 starts with page 109.

SuggestedRemedy

Remove blank page and corrcet page numbering.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.1.1** *P* **109** *L* **43** # 66

Dawe, Piers

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

Draft says "Code examples given in this clause adhere to the style of the "C" programming language.". Later on, fragments of pseudo-C are used to define functions: they are not just examples. But because they aren't complete or executable, one cannot be sure what is meant. Also they put an added burden on the reader: he has to understand technical English, Pascal, Matlab and 802.3 state diagrams already, and we should not impose a fifth foreign language without a compelling reason (by the way, Matlab is in the main a good example because it is so like the universal mathematical notation, not so foreign). Other projects didn't need to add a fifth language. It is not clear what happens if code and text appear to disagree. It is not clear what happens if different dialects of C could lead to different outcomes.
Annex 61A.3 is an interesting example; it's a complete program so one can run it to see if it really means what one thinks it does, and it really is an example, and it is in an informative annex, so actually it's not a show-stopper if a reader can't use it.

SuggestedRemedy

I believe you need to define the functions unambiguously and accessibly, in the combination of English and state diagrams which we already use. It may be helpful to collect up the pseudo-code fragments, replace any informal words with code, add top and tail and a bit more example code if necessary to join the pieces, and put the resulting executable program in an informative appendix. It would then follow that the normative text and diagrams take precedence according to the usual rules.
If you leave any "C" in the draft, state which version of C you mean.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.1.2** *P* **158** *L* **20** # 42

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2890)]
"the ONU TX clock tracks the ONU RX clock and in turn locks to OLT TX clock" is better written as
"the ONU TX clock tracks the ONU RX clock, which in turn locks to OLT TX clock"

SuggestedRemedy

Replace "and" with ", which"

Proposed Response *Response Status* **W**

[Changed Clause from 764 to 76 and Subclause from 764.1.2 to 76.1.2]

Cl **76** *SC* **76.2.1** *P* **109** *L* **54** # 104

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Page 109 follows page 114.

SuggestedRemedy

Renumber pages.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.1** *P* **115** *L* **48** # 9

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2800)]
Clause 65 defines the RS, PCS, and PMA for 1G.
It's not the case that the RS for 10G-EPON subclause (76.2) "extends" clause 65. Though 76.2 does incorporate the P2MP preamble from clause 65.
It's probably OK. to just delete the reference to cl65.

SuggestedRemedy

Change:
"This subclause extends Clause 46 to enable multiple data link layers to interface with a single physical layer and Clause 65 to enable 10/1G-EPON data links, transmitting at one data rate (e.g. 10 Gb/s) and receive at
another data rate (e.g. 1 Gb/s)."
to:
"This subclause extends Clause 46 to enable multiple data link layers to interface with a single physical layer, and to enable data links which transmit at one data rate (e.g. 10 Gb/s) and receive at another data rate (e.g. 1 Gb/s)."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.2** *P* **113** *L* **4** # 132

Mandin, Jeff

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

Terminology
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"GMII is the interface used to transfer data between the MAC and the PHY"
"XGMII is the interface used to transfer data between the MAC and the PHY"
to:
"GMII is the interface used to transfer data between the RS and the PCS"
"XGMII is the interface used to transfer data between the RS and the PCS"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.2** *P* **113** *L* **9** # 133

Mandin, Jeff

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

"Symmetric PON operation" _uses_ both directions of the MII. It doesn't "provide" the MII functionality.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"providing all of the functionality of the XGMII"
to:
"utilizing all of the functionality of the XGMII".
Change "providing" to "utilizing" on lines 11, 14, and 16 also.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.2** *P* **119** *L* **4** # 25

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2849)]
Text reads "For 10G-EPON architectures, the XGMII is the interface used to transfer data between the MAC and the PHY." is not true since 10G-EPON also has GMII as per definitions in Clause 1.4

SuggestedRemedy

Change to read "For 10/10G-EPON architectures, the XGMII is the interface used to transfer data between the MAC and the PHY."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.2.1** *P* **113** *L* **22** # 134

Mandin, Jeff

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

76.2.2.1 and 76.2.2.2 mostly repeat material from the previous subclause.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

1. Delete the first two sentences of 76.2.2.1 and the first two sentences of 76.2.2.2
2. Change the final sentence of 76.2.2.1 from:
"Figure 76-3(a) depicts the operation of the 10/10G-EPON."
to:
"Figure 76-3(a) depicts the MII paths used in 10/10G-EPON."
3. Change the final sentence of 76.2.2.2 from:
"Figure 76-3(b) depicts the operation of the 10/1G-EPON."
to:
"Figure 76-3(b) depicts the MII paths used in 10/1G-EPON."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.2.3** *P* **113** *L* **42** # 135

Mandin, Jeff

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

wordsmithing
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"the OLT may be configured to use a dual-rate mode"
to
"the OLT may optionally support dual-rate mode"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.2.3** *P* **113** *L* **44** # 136

Mandin, Jeff

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

"Figure 76-4 depicts the OLT operating in a dual-rate mode." is not quite right.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"Figure 76-4 depicts the OLT operating in a dual-rate mode."
to:
"Figure 76-4 depicts the MII paths used in an OLT operating in dual-rate mode."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.2.3** *P* **120** *L* **1** # 21

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2836)]
Figure 76-3 needs minor changes. We still use 10/10 Gb/s and 10/1 Gb/s. Change as proposed below

SuggestedRemedy

Change "10/10 Gb/s" to "10/10G-EPON"
Change "10/1 Gb/s" to "10/1G-EPON"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.2.4** *P* **114** *L* **50** # 137

Mandin, Jeff

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

The only purpose of 76.2.2.4 seems to be to provide a summary of the contents of 76.2.6.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Delete 76.2.2.4

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.3** *P* **115** *L* **9** # 138

Mandin, Jeff

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

Stray sentence in RS text refers to 1G function of PCS.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Delete the sentence "The PCS in the OLT shall operate in unidirectional mode as defined in 66.2.2"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.3.2** *P* **121** *L* **37** # 10

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2801)]
Currently, the "Delay Constraints" for the PHY layer (ie. RS, PCS, and PMA sublayers) appears in the "summary of major concepts" of the RS.
It seems more appropriate for the section to appear at the beginning of c76.

SuggestedRemedy

Move 76.2.3.2 to after 76.1.1

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.6** *P* **116** *L* **7** # 51

Hajduczenia, Marek ZTE Corp.

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

[Submitted on behalf of Runjian Lin]
Location of Table 76-1, Table 76-2

SuggestedRemedy

Move to Page 115, Line 3 above 76.2.3

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.6.1.2** *P* **116** *L* **49** # 139

Mandin, Jeff

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

"The transmit function is described in 65.1.3.2 except as noted in Table 76-3 ..."
This would be confusing even if it were correct (and it doesn't seem to be).
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Add appropriate sections and text to 76.2.6.1.2 describing the placement of LLID, computation of CRC etc.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.6.1.2** *P* **116** *L* **51** # 56

Hajduczenia, Marek ZTE Corp.

Comment Type **TR** *Comment Status* **X**

[Submitted on behalf of Runjian Lin]
RS Transmit function needs to be augmented for packet start control alignment

SuggestedRemedy

76.2.6.1.2 RS Transmit function
Add text "The Start control character alignment is described in 46.3.1.4 except as noted below.
The RS may maintain the effective data rate by sometimes inserting and sometimes deleting idle characters to align the Start control character. When using this method, the RS must maintain a Deficit Idle Count (DIC) that represents the cumulative count of idle characters deleted or inserted. DIC should be initialized to zero. A FIFO initialized to empty is needed for the packet alignment process."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.6.1.3** *P* **123** *L* **11** # 57

Hajduczenia, Marek ZTE Corp.

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

Typo "locical" in Column 1, lane 1 description says "<mode,locical_link_id[14:8]>"

SuggestedRemedy

Change "locical" to "logical"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.2.6.1.3.3** *P* **118** *L* **25** # 140

Mandin, Jeff

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

CRC-8 field handling is not the same here as in clause 65 - because the SFD field handling is different in 10G
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Provide full text for this subclause.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.1** *P* *L* # 141

Mandin, Jeff

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

The c76 PCS is its own PCS type, and not an extension of another PCS.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

1. Change:
"show the relationship between the extended PCS sublayer and the ISO/IEC OSI reference model"
to:
"show the relationship between the PCS sublayer and the ISO/IEC OSI reference model"
2. Remove the word "extension" from the titles of figures 76-7 and 76-8

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.1** *P* **118** *L* **33** # 142

Mandin, Jeff

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

Wordsmithing
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

1. Change
"supporting burst-mode operation of the point-to-multipoint physical medium"
to:
"supporting burst-mode operation over the point-to-multipoint physical medium"
2. Make the same change on page 119, line 40

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.1.1** *P* **118** *L* **51** # 143

Mandin, Jeff

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

"In this clause, no explicit specification is provided for the 10/1GBASE-PRX PCS. It is expected that deriving such a specification from 10GBASE-PR PCS and 1000BASE-PX PCS specifications as described above is a straightforward process."
Conveys the impression that we are leaving part of the spec as an exercise for the user to write.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Delete the second sentence so that the paragraph reads:
"In this clause, no explicit specification is provided for the 10/1GBASE-PRX PCS. "

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2** *P* **119** *L* **43** # 144

Mandin, Jeff

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

wordsmithing
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"Figure 76-8 represents the functional block diagram"
to:
"Figure 76-8 shows the functional block diagram"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2** *P* **125** *L* **4648** # 16

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2814)]
In the OLT, the PCS operates at a 10 Gb/s rate in a continuous mode. In the ONU, the PCS may operate at a 10 Gb/s rate, as specified herein (10GBASE-PR), or at a 1 Gb/s rate, compliance with Cause 65 (10/1GBASE-PRX).

SuggestedRemedy

In the OLT, the PCS transmit function operates at 10 Gb/s rate in a continuous mode. In the ONU, the PCS transmit function may operate at 10 Gb/s rate, as specified herein (10GBASE-PR), or at 1 Gb/s rate, compliance with Cause 65 (10/1GBASE-PRX).

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.1** *P* **120** *L* **37** # 145

Mandin, Jeff

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

The IDLE deletion process doesn't actively ensure that minimum IPG is preserved. Rather, it relies on MPCP to ensure that there is a sufficient number of excess IDLEs.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"This process deletes four 72-bit vectors containing Idle characters per every thirty-one 72-bit vectors received from the XGMII, always ensuring that the minimum IPG has been preserved between two adjacent packets."
to either:
a) "This process deletes four 72-bit vectors containing Idle characters per every thirty-one 72-bit vectors received from the XGMII."
b) "This process deletes four 72-bit vectors containing Idle characters per every thirty-one 72-bit vectors received from the XGMII. The MPCP layer ensures that sufficient Idle characters occur so that the minimum IPG is always preserved between two adjacent packets."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.1** *P* **120** *L* **40** # 146

Mandin, Jeff

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

Terminology/Wordsmithing
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"The Idle Detection function is implemented in the PCS as depicted in Figure 76-10 for ONUs and as depicted in Figure 76-9 for OLTs"
to:
"The Idle Deletion function for ONUs is depicted in Figure 76-10 and the function for OLTs is depicted in Figure 76-9 "

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.1** *P* **126** *L* **40** # 22

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2837)]
Text says "The Idle Detection function is implemented in the PCS as depicted in Figure 76-10 for ONUs and as depicted in Figure 76-9 for OLTs." while Figure 76-9 is first in the draft. Change as proposed below.

SuggestedRemedy

Change to read "The Idle Detection function is implemented in the PCS as depicted in Figure 76-9 for OLT and as depicted in Figure 76-10 for ONUs."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.1.1** *P* **121** *L* **1** # 87

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
It's very confusing to have the figure in the middle of the definition of the constant.

SuggestedRemedy

Move figure so that it does not break the definition in half.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.1.1** *P* **127** *L* **1** # 58

Hajduczenia, Marek ZTE Corp.

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

Figure 76-8 breaks the definition of FEC_Psize constant

SuggestedRemedy

Make sure that figures do not break blocks of text between different pages. Otherwise readability is lost.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.1.1** *P* **127** *L* **40** # 41

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2889)]
Constund IDLE_COLUMN is not used anywhere in the draft.

SuggestedRemedy

delete definition for this constant

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.1.3** *P* **112** *L* **16** # 52

Hajduczenia, Marek ZTE Corp.

Comment Type **TR** *Comment Status* **X**

[Submitted on behalf of Runjian Lin]
T_TYPE (rx_raw<71:0>)

SuggestedRemedy

T_TYPE(tx_raw<71:0>)

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.1.5** *P* **122** *L* **36** # 147

Mandin, Jeff

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

Wordsmithing
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"The OLT PCS Idle Deletion function shall implement the state diagram as shown in Figure 76-9. The ONU PCS Idle Deletion function shall implement the state diagram as shown in Figure 76-10."
to:
"The OLT PCS shall perform Idle deletion as shown in Figure 76-9. The ONU PCS shall perform Idle Deletion as shown in Figure 76-10."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.1.5** *P* **130** *L* **1** # 1

Kramer, Glen Teknovus, Inc.

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

In Figure 76-10, IdleCount counter can overflow during a long interburst gap.

SuggestedRemedy

Add this line to RESET_ALIGNMENT state:
"IdleCount = DelayBound"
(use proper assignment symbol)

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.4.1** *P* **131** *L* **22** # 11

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2803)]
Draft 2.2 removed the statement that the value of "alpha" for the GF used to define the RS(255, 223) code is represented bitwise as 0x02.
Some treatments/implementations of RS codes use reversed bit-ordering (cf. "Error Control Coding" by Lin and Costello pg. 564). Using the different representation of alpha will result in different Ax constants.
Hence the representation of alpha should be stated explicitly.

SuggestedRemedy

Change:
"alpha is a root of the binary primitive polynomial x8+x4+x3+x2+1"
to:
"alpha is a root of the binary primitive polynomial x8+x4+x3+x2+1 and is represented as 0x02"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.4.2** *P* **127** *L* **3** # 148

Mandin, Jeff

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

terminology
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

1. On page 127 line 3, change:
"Padding of FEC codewords and appending FEC parity bytes in the 10GBASE-PR PCS transmitter is illustrated in figure 76-13"
to:
"Padding of FEC codewords and appending FEC parity bytes in the 10GBASE-PR and 10/1GBASE-PRX OLT PCS transmitter is illustrated in figure 76-13"
2. On page 131 line 25, Change:
"pertinent to the 10GBASE-PR PCS transmitters"
to:
"pertinent to the 10GBASE-PR and 10/1GBASE-PRX OLT PCS transmitters"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.4.2** *P* **128** *L* **11** # 149

Mandin, Jeff

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

[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Modify figure 76-13 so that the 66b encoder is shown as a box (and not just mentioned in the label on the output arrow)

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **129** *L* **13** # 150

Mandin, Jeff

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

wordsmithing
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"To control the laser, the ONU PCS is extended to detect the presence of transmitted data .... "
to:
"To control the laser, the ONU PCS includes a function to detect the presence of transmitted data ...."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **129** *L* **18** # 151

Mandin, Jeff

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

The descriptive text from the second paragraph of 76.3.2.5 through the second paragraph on 130 (data detector fifo mechanism) is outdated. So is figure 76-14.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Replace the indicated paragraphs and figure with up-to-date text.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **129** *L* **18** # 152

Mandin, Jeff

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

Terminology
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

1. Change:
"The Data Detector contains a delay line (FIFO buffer) storing code-groups to be transmitted."
to:
The Data Detector contains a delay line (FIFO buffer) storing 66-bit blocks to be transmitted.
2. Also change "code groups" to "66-bit blocks" in the PICS on page 156, line 40

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **129** *L* **26** # 153

Mandin, Jeff

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

wordsmithing
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"The Idle control characters are used to synchronize the scrambler and start of packet delineation"
to:
"The Idle control characters are used to synchronize the descrambler and establish start-of-packet delineation"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **129** *L* **40** # 88

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
It is very difficult to see the difference in shading between Data and FEC.

SuggestedRemedy

Use more obvious shading to differentiate between data and FEC.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **129** *L* **47** # 93

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Figure 76-14 is confusing, incorrect, and is not as clear as Figure 76-15.

SuggestedRemedy

Remove figure from draft.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **129** *L* **47** # 92

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Figure 76-14 shows data beginning immediately after syncTime. In a burst, however, data will not begin until two IDLE blocks have been transmitted.

SuggestedRemedy

Add IDLE block after syncTime is done and before data.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **130** *L* **43** # 154

Mandin, Jeff

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

No need for refer to figure 76-15 since the whole paragraph is describing the figure.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Delete "(See figure 76-15)"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **130** *L* **45** # 155

Mandin, Jeff

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

wordsmithing
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"When received at the OLT, the BURST_DELIMITER allows for FEC codeword alignment on the incoming data stream..."
to:
"When received at the OLT, the BURST_DELIMITER is used for FEC codeword alignment on the incoming data stream ..."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **130** *L* **46** # 156

Mandin, Jeff

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

Terminology
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"provide IPG at the OLT"
to:
"provide packet delineation at the RS layer of the OLT".

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **135** *L* **3349** # 19

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2823)]
In Figure 76-14, there is no EOB after data and FEC.

SuggestedRemedy

According Figure 76-15, there should be a EOB after the last FEC codeword. So Figure 76-14 should be modified to show a EOB after the last FEC codeword.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5** *P* **137** *L* **19** # 38

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2886)]
"Two consecutive XGMII transfers provide eight characters that are encoded into one 66-bit transmission block. The burst may occasionally be required to transmit an extra 4 bytes of data, causing the burst to extend into the next grant period."
The first sentence does not provide any new information. It describes 64B/66B encoding and thus is out of place in the Data Detector section. The second sentence is technically incorrect. EPON cannot work with a burst extending into another grant period.

SuggestedRemedy

Remove the above paragraph.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5.3** *P* **132** *L* **50** # 72

Law, David 3Com

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

State diagram function do not include a () at the end of the function name.

SuggestedRemedy

Removed the '()' from the end of the function names and the actions in the states.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.2.5.6** *P* **135** *L* **1** # 157

Mandin, Jeff

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

A "data detector" state diagram is provided for the OLT.
But the OLT data detector does not appear in the stack diagram in figure 76-7.
Also it does not detect data.
Moreover the title of 76.3.2.5.6 says "(ONU only)"
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Either:
a) modify figure 76-7, the title of 76.3.2.5.6, and the name of the data detector so that the OLT function is described properly.
b) create a new section "State Diagrams" in the FEC encoder subclause 76.3.2.4 and move figure 76-17 and 76-18a into it with the name "FEC encoding process "

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.1.1** *P* **143** *L* **4** # 99

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Incorrect reference.

SuggestedRemedy

Replace 76.3.3.1.1 with 76.3.3.1.2.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.1.3** *P* **139** *L* **1** # 158

Mandin, Jeff

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

[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change "BlockFromPMA" to "BlockFromPMA()"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.2** *P* **140** *L* **46** # 159

Mandin, Jeff

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

"Shall" without a PICS.
Probably sufficient for the text to have a "shall"/PICS on the transmit bit order and not have "shall"/PICS on the receive bit order.
Also do some wordsmithing.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"The synchronizer shall form a bit stream from the primitives by concatenating requests with the bits of each primitive in order from rx_data-group<0> to rx_data-group<15> (see Figure 76-20).
to:
"The synchronizer forms an incoming bit stream by concatenating the bits from each succesive indication primitive (see Figure 76-20)."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.2** *P* **140** *L* **48** # 160

Mandin, Jeff

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

Wrong primitive
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"The codeword synchronization function receives data via the 16-bit PMA_UNITDATA.request primitive"
to:
"The codeword synchronization function receives data via the 16-bit PMA_UNITDATA.indication primitive"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.2** *P* **140** *L* **53** # 161

Mandin, Jeff

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

Redundant sentence
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Delete the sentence:
"Lock is obtained as specified in the codeword lock state diagram shown in Figure 76-21" since it is not descriptive and it appears again with a "shall" in 76.3.3.2.5

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.2** *P* **141** *L* **53** # 162

Mandin, Jeff

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

Terminology/wordsmithing
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

change:
"The state diagram performs a search for this pattern, and when it finds a perfect match of two full codewords (62 blocks), it then asserts codeword lock."
to:
"The ONU synchronizer attempts to identify this pattern in the received datastream, and when it finds a perfect match of two full codewords (62 blocks), it then asserts codeword lock."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.2** *P* **142** *L* **1** # 163

Mandin, Jeff

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

wordsmithing
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"When in codeword lock, the state diagram accumulates the appropriate contents of the 31 blocks that constitute a codeword in an input buffer. When the codeword is complete, the FEC decoder is triggered, and the input buffer is freed for the next codeword."
to:
"While in codeword lock, the synchronizer copies the FEC-protected bits from each data block of the codeword into an input buffer. When a complete codeword has been received, the FEC decoder is triggered, and the input buffer is freed for the next codeword."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.2** *P* **198** *L* **13** # 90

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
The term laserOffTime is not mentioned in 75.7.15, but the term Toff is used there.

SuggestedRemedy

Replace with "as specified by the value of Toff in 75.7.15."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.2** *P* **198** *L* **19** # 91

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
The term laserOnTime is not mentioned in 75.7.15, but the term Ton is used there.

SuggestedRemedy

Replace with "as specified by the value of Ton in 75.7.15."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.2** *P* **198** *L* **49** # 89

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Incorrect reference to 76.3.3.5.

SuggestedRemedy

Replace with correct reference.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.2.3** *P* **143** *L* **3** # 94

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Incorrect reference.

SuggestedRemedy

Change to 76.3.3.1.2.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.3** *P* **143** *L* **36** # 164

Mandin, Jeff

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

Wordsmithing
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"The 10/10G-EPON links shall use the Reed-Solomon code (255, 223) for FEC decoding in both upstream and downstream directions. The 10/1G-EPON shall use the Reed-Solomon (255, 223) code for FEC decoding in the downstream direction."
to:
"10/10G-EPON OLTs and ONUs shall correct the received datastream using the Reed-Solomon code (255, 223). 10/1G-EPON ONUs shall correct the received datastream using the Reed-Solomon (255, 223) code.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.3** *P* **143** *L* **39** # 165

Mandin, Jeff

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

FEC decoder text should distinguish between FEC decoding process which invokes the FEC decoder and the FEC decoder itself.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

1. Change title of 76.3.3.3 from "FEC Decoder" to "FEC Decoding Process"
2. On page 143, line 39 Change:
"The decoder then forwards the 66-bit data blocks to the descrambler and discards the parity blocks."
to:
"The decoding process then forwards the 66-bit data blocks to the descrambler and discards the parity blocks."
3. On line 40. change:
"The FEC decoder is also responsible for setting bit 0 of the sync header to the inverse of bit 1 of the sync header."
to:
"The FEC decoding process is also responsible for setting bit 0 of the forwarded sync header to the inverse of bit 1 of the corrected sync header."
4. On line 42, change "FEC decoder state diagram" to "FEC codeword processing state diagram"
5. One page 145 line 5, change:
"The FEC decoder provides a user option to indicate an uncorrectable FEC block(due to an excess of symbols containing errors) to the PCS layer. If this option is set to be true, the FEC decoder checks for the value of decode_success."
to:
"The FEC decoding process provides a user option to indicate an uncorrectable FEC block (due to an excess of symbols containing errors) to the PCS layer. If this option is set to be true, the FEC decoding process checks for the value of decode_success."

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.3** *P* **143** *L* **43** # 95

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Referenced state diagram is FEC codeword processing, not FEC-decoder. Also on page 146 line 34.

SuggestedRemedy

Change to FEC codeword processing state diagram.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.3** *P* **145** *L* **1** # 96

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Is there a need to reference all 4 subclauses? Only 45.3.4.32 contains information on the counter talked about here.

SuggestedRemedy

Change reference to only be 45.2.3.32.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.3** *P* **145** *L* **7** # 97

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
The variable decode_success is a boolean, and can only take on values of True or False. It cannot take on a value of 0.

SuggestedRemedy

If the variable decode_success is set to FALSE . . .

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.3** *P* **147** *L* **26** # 166

Mandin, Jeff

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

Error in FEC codeword processing state diagram
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change exit condition for processing a newly arrived codeword from:
"i = FEC_DSize * decode_success"
to:
"i = FEC_DSize * decode_done"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.3** *P* **151** *L* **5** # 7

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2798)]
Terminology

SuggestedRemedy

Change:
"The FEC decoder provides a user option to indicate an uncorrectable FEC block (due to an excess of symbols containing errors) to the PCS layer."
to:
The FEC decoder provides a user option to indicate an uncorrectable FEC block (due to an excess of symbols containing errors) to the higher layers.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.4.1** *P* **146** *L* **51** # 98

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Incorrect register reference.

SuggestedRemedy

Change to 3.80.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.4.1** *P* **147** *L* **38** # 100

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Incorrect register reference.

SuggestedRemedy

Replace 3.74 with 3.80. Is it possible to have these as cross-references so they will update automatically if it changes in the future?

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.4.4** *P* **154** *L* **28** # 39

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2887)]
In Figure 76-23, timer should follow the notation defined in 64.1.5 or in 77.1.5

SuggestedRemedy

1) add expiration interval to the timer in state START_TIMER
2) add brackets around timer in state START_TIMER
3) add underscore between "interval_timer" and "done" in 4 places

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.7** *P* **146** *L* **29** # 167

Mandin, Jeff

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

FEC decoding and Idle insertion are applicable to ONUs in PRX
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

1. On page 146, line 29 Change:
"The body of this subclause comprises state diagrams, including the associated definitions of variables, constants, and functions pertinent to the 10GBASE-PR PCS receivers."
to:
"The body of this subclause comprises state diagrams, including the associated definitions of variables, constants, and functions pertinent to the 10GBASE-PR PCS receivers and 10/1GBASE-PRX ONU PCS receivers."
2. Make the same change on 149, line 23

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.7.1** *P* **149** *L* **48** # 101

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
We have a good definition, in IDLE_VECTOR, for what a 72-bit vector containing IDLE is. We should use this definition.

SuggestedRemedy

Change sentence to "Upon initialization, all elements of this array are filled with IDLE_VECTOR characters.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.7.2** *P* **150** *L* **8** # 168

Mandin, Jeff

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

rx_raw_in is coming from the 66b decoder not the XGMII.
So there is no reason to describe formation of the vector from XGMII signals.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Change:
"Vector received from the output of the 64B/66B decoder containing two successive XGMII transfers. RXC<0> through RXC<3> for the first transfer are placed in rx_raw<0> through rx_raw<3>, respectively. RXC<0> through RXC<3> for the second transfer are placed in rx_raw<4> through rx_raw<7>, respectively. RXD<0> through RXD<31> for the first transfer are placed in rx_raw<8> through rx_raw<39>, respectively. RXD<0> through RXD<31> for the second transfer
are placed in rx_raw<40> through rx_raw<71>, respectively."
to:
"Vector received from the output of the 64B/66B decoder for eventual transfer over the XGMII"

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.3.3.7.5** *P* **151** *L* **27** # 169

Mandin, Jeff

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

The IDLE insertion state diagram assumes that there is a continuous stream of incoming data blocks. However if lock is lost (or was never attained to begin with) then the II fifo will drain and there will be nothing to write on the XGMII for the parity cycles.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Fix figure 76-24 so that the Idle Insertion process creates a continuous XGMII Rx data stream as shown in 3av_0309_mandin_1.pdf.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.4.2.1** *P* **152** *L* **33** # 103

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Figure 76-3 and Figure 75-4 are completely unrelated to this text.

SuggestedRemedy

Replace with correct reference, possibly Figure 75-3.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.4.2.1** *P* **152** *L* **33** # 53

Hajduczenia, Marek ZTE Corp.

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

[Submitted on behalf of Runjian Lin]
in Figure 76-3 and Figure 75-4

SuggestedRemedy

in Figure 75-3

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.4.2.1** *P* **152** *L* **34** # 54

Hajduczenia, Marek ZTE Corp.

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

[Submitted on behalf of Runjian Lin]
when the phase is recovered

SuggestedRemedy

when the signal phase is recovered

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.4.2.1.1** *P* **152** *L* **43** # 102

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
There is no Figure 75.5.15.

SuggestedRemedy

Remove word Figure.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.4.2.1.1** *P* **152** *L* **44** # 106

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
In the previous subclause we reference 75.7.16 instead of referencing 60.7.13.2 directly.

SuggestedRemedy

Replace 60.7.13.2 with 75.7.16.

Proposed Response *Response Status* **O**

Cl **76** *SC* **76.5.4** *P* **154** *L* **29** # 170

Mandin, Jeff

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

Some of the PICS statements apply only to PR and not PRX
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Modify the PICS proforma to appropriately distinguish between PR and PRX.

Proposed Response *Response Status* **O**

Cl **76A** *SC* **76A.1** *P* **159** *L* **29** # 107

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
The hyperlink provided in the footnote does not contain anything. It appears only to be a placeholder.

SuggestedRemedy

Upload tables to the web page.

Proposed Response *Response Status* **O**

Cl **77** *SC* **77** *P* **171** *L* **1** # 108

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Page numbers jump from 164 to 171.

SuggestedRemedy

Renumber pages.

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.1.3** *P* **176** *L* **47** # 70
Law, David 3Com

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

Mac' should read 'MAC'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.1.3** *P* **176** *L* **49** # 69
Law, David 3Com

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

In Figure 77-4, is 'MCF' really the 'interface to MAC Control client' as stated in the note at the bottom of the figure. The interface is MCF:MA_DATA but MA_DATA is the interface to the MAC Client. The interface to the MAC Control Client is MA_CONTROL.

SuggestedRemedy

Change 'MCF=interface to MAC Control client' to read 'MCF=interface to MAC client'.

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.1.3** *P* **176** *L* **5** # 71
Law, David 3Com

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

The upper dotted line marked as 'MAC Control service interface' is really two separate service interfaces.

SuggestedRemedy

The upper dotted line should be broken in two, the MCF:MA_DATA.indication(...) and MCF:MA_DATA.request(...) primitives should be marked as 'MAC data service interface', the MA_CONTROL.request(...) and MA_CONTROL.indication(...) primitives should be marked as 'MAC Control client service interfaces'. Two boxes should be added, one labeled 'MAC Client' and the other 'MAC Control Client'. For example see Figure 57-2 'OAM sublayer support of interlayer service interfaces'.

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.2.2.1** *P* **183** *L* **12** # 109
Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
The size of minimum IPG is not described in 36.2.4.14. This reference was carried over from Clause 64 and specifies size of EPD.

SuggestedRemedy

Change reference to 46.3.1.4 and also possibly add reference to 4A.4.2.

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.2.2.1** *P* **183** *L* **51** # 55
Hajduczenia, Marek ZTE Corp.

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

[Submitted on behalf of Runjian Lin]
resets to zero (..) initialized to zero

SuggestedRemedy

is reset to zero (..) is initialized to zero

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.2.2.2** *P* **183** *L* **30** # 111
Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Figure 77-14 is the Control Multiplexer.

SuggestedRemedy

Change reference to Figure 77-12.

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.2.2.2** *P* **183** *L* **30** # 110

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
Subclause 76.2.3.2 does not talk about the accuracy of the receive clock. In Clause 64, the reference added to this variable was to the loop timing specification.

SuggestedRemedy

Change reference to 76.4.1.2.

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.2.2.3** *P* **183** *L* **36** # 14

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2807)]
The alignmentCorrect variable also checks for the data (rather than parity) transmission region.
This important function should be reflected in the name of the variable.za

SuggestedRemedy

Change "alignmentCorrect" to either "alignmentAndTransmitRegionCorrect" or perhaps "DataTransmitOK"

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.2.2.4** *P* **201** *L* **39** # 36

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2881)]
The equation of CheckGrantSize(length) is wrong.

SuggestedRemedy

Add "- fecOffset" at the end of the current one.
Correct equation is as below. See also 3av_0901_kozaki_1.pdf.
FEC_Overhead(length) = ceiling((fecOffset + length) / FEC_PAYLOAD_SIZE) * FEC_CODEWORD_SIZE - fecOffset

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.2.2.7** *P* **190** *L* **41** # 13

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2805)]
The FEC_Overhead() function duplicates logic already present elsewhere in the control multiplexer - consequently unneccessary IDLEs are appended following end-of-frame.
This is one of three significant technical issues related to FEC handling in MPCP. The TF should evaluate these issues and resolve them in the current draft or the next one.

SuggestedRemedy

See 3av_0109_mandin_2.pdf

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.2.2.7** *P* **190** *L* **9** # 12

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2804)]
The OLT control multiplexer erroneously performs the check for the PCS Parity region before it receives permission for transmission from Multipoint Transmission Control.
As a consequence there is no effective check for whether the PCS is transmitting parity - leading to transmit delay variation in excess of the maximum value of 1 TQ.
A similar problem is found in the ONU control multiplexer.
This is one of three serciou issues related to FEC handling in MPCP. The TF should evaluate these issues and resolve them in the current draft or the next one.

SuggestedRemedy

See 3av_0109_mandin_1.pdf

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.2.2.7** *P* **191** *L* **1** # 171

Mandin, Jeff

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

3av_0901_mandin_3.pdf showed that Deficit Idle Count does not impact the FEC overhead calculations performed by MPCP.
3av_0901_kramer_1.pdf provided simulation results that indicated that this was the case on the downstream but there was indeed an impact of DIC on the upstream only.
With additional investigation, we see that it is possible to use the same simple overhead calculation on both upstream and downstream - provided that we ensure the DIC value is 0 at start of burst.
[This comment is contained in the file attached to comment #68 and has been added to the database as a separate comment to make processing simpler]

SuggestedRemedy

Modify figure 77-14 as indicated in 3av_0903_mandin_2.pdf

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.2.2.7** *P* **191** *L* **29** # 34

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2879)]
1. In the "Check Size" state of figure 77-14, when the result of the CheckGrantSize() function is divided by the tqSize, the quotient is rounded down rather than rounded up.
2. It will sometimes happen that the result of CheckGrantSize (in octet times) is larger than the number of TQ left in the grant, whereas the result of division by TqSize (ie. Rounded down) is precisely equal to the number of TQ remaining in the grant.
3. In such a case, MPCP will allow the packet to be transmitted, but the data detector in the PCS will continue to transmit data past the end of the grant. This can then cause a collision with the transmission of a subsequent ONU and a missed burst.
This issue should be addressed by the TF and resolved in the current draft or the next one

SuggestedRemedy

1. On page 186 line 4 Change:
----- -----
"CheckGrantSize(length) = | (fecOffset + length) / FEC_PAYLOAD_SIZE| x FEC_CODEWORD_SIZE"
to:
--- ----
"CheckGrantSize(length) = | T / tqSize |
where:
----- -----
T = | (fecOffset + length) / FEC_PAYLOAD_SIZE| x FEC_CODEWORD_SIZE"
2. In the "Check Size" state of figure 77-14, modify the expression:
"nextTxTime <= CheckGrantSize(sizeof(data_tx) + tailGuard))/tqSize"
to:
"nextTxTime <= CheckGrantSize(sizeof(data_tx) + tailGuard))"
3.

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.3.3.1** *P* **197** *L* **34** # 113

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
The laserOnTimeCapability definition has cut and paste errors from the laserOffTimeCapability constant.

SuggestedRemedy

Change to ". . . time required to initialize the laser". Also change to ". . . time period required for turning on the PMD"

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.3.3.2** *P* **198** *L* **16** # 114

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
During a Discovery window, it is advantageous to allow as many ONUs the chance to register as possible. One way to do this is to attempt to reduce the number of collisions. If the default value of laserOnTime is set to laserOnTimeCapability instead of 512ns, this could significantly reduce the transmission time for each ONU during a discovery window. The value of laserOnTime will then be updated when the ONU is registered. Similarly, the default value of laserOffTime should be set to laserOffTimeCapability. If a laser supports an on time of 5 TQ, there is no need to turn the laser on for 32 TQ during this period. If a laser suports laser on time and off time of 5TQ each, it would reduce the transmission window by 864ns. This is a significant portion of the entire transmission window.

SuggestedRemedy

Change default value for laserOnTime to laserOnTimeCapability for ONU. Change default value of laserOffTime to laserOffTimeCapability for ONU.

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.3.3.5** *P* **201** *L* **27** # 40

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2888)]
Message parameters should not have default values. The parameters are always set expicitly in generating state diagrams.

SuggestedRemedy

Remove "This parameter has the default value of 0" from definitions for laserOnTime and laserOffTime

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.3.3.6** *P* **202** *L* **31** # 35

Hajduczenia, Marek ZTE Corp.

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

[Resubmitted from January 2009 meeting (see D2.2 comment #2880)]
In Draft 2.2, the 10GEPON Discovery State diagrams are instantiated on both the 10G and the 1G broadcast LLIDs.
This breaks the ability for a 10G OLT to support 1G ONUs in "dual-rate mode".
The cl77 state diagrams are supposed to be instantiated only on 7ffe and not 7fff.
This issue should be addressed by the TF and resolved in the current draft or the next one.

SuggestedRemedy

Change:
"Instantiation of state diagrams as described in Figure 77-19, Figure 77-20, and Figure 77-21 is performed only at the Multipoint MAC Control instances attached to the appropriate broadcast LLID(s) (0x7FFF
and/or 0x7FFE for 1G-EPON and 10G-EPON, respectively)."
to:
"Instantiation of state diagrams as described in Figure 77-19, Figure 77-20, and Figure 77-21 is performed only at the Multipoint MAC Control instances attached to the broadcast LLID (0x7FFE).

Proposed Response *Response Status* **O**

Cl **77** *SC* **77.3.3.6** *P* **205** *L* **22** # 112

Kramer, Glen Teknovus, Inc.

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

[Submitted on behalf of Eric Lynskey]
In Figure 77-22, the transition from COMPLETE DISCOVERY to VERIFY ACK is somewhat obscured.

SuggestedRemedy

Move text box slightly to the left.

Proposed Response *Response Status* **O**

Cl **99** *SC* **99** *P* **2** *L* **5** # 60

Hajduczenia, Marek ZTE Corp.

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

is "already deployed equipment.". Can be further specified

SuggestedRemedy

Change "already deployed equipment." to "already deployed 1G-EPON equipment."

Proposed Response *Response Status* **O**