

P802.3ah Draft 2.1 Comments

Cl 00 SC P L # 99002

Thompson, Geoff Nortel

Comment Type TR Comment Status A D2.0 #951

I have a problem with the use of the term "loopback" for the diagnostic return path being proposed for the OAM sublayer. The potential for confusion of this new path with the existing half-duplex DO to DI loopback path and its associated term of "loopback" is great. The term "loopback" has been an accepted label for this function at least since the drafting of FOIRL (ref: 9.9.2.1) in 1987.

SuggestedRemedy

Pick another terminology.

Proposed Response Response Status U

ACCEPT.

The term "loopback", as used within Clause 57, is used in reference to a remote loopback of frames. Occasionally, the word "loopback" is improperly used without being preceded by the word "remote". See for example Figure 57-3 at line 20 on page 138. This figure title should be changed to read "OAM remote loopback". If the term "OAM remote loopback" is used consistently, this should provide an adequate differentiation from the loopback defined in earlier clauses.

Note that this problem was actually introduced in 802.3ae,

see for example Figure 45-2.

Cl 00 SC P L # 99001

Brand, Richard Nortel Networks

Comment Type TR Comment Status R D2.0 #837

Fundamental structural issue.

With the addition of a minimum of at least 562 pages of D 2.0 of EFM to the existing 802.3 document, the IEEE 802.3 document will become overly large. At this point, I find it extremely time consuming to scan the existing 802.3 document for consistency with the new draft sections. With so much bulk, we run an increased risk of approving a document that may not be up to our past level of quality.

The material that is generated by future Task Forces will only exacerbate this situation.

SuggestedRemedy

Move EFM into a new separate 802.3 document that addresses an Ethernet for service providers and/or access networks.

Proposed Response Response Status C

REJECT.

The draft in its current form satisfies the PAR and 5 Criteria for the project, which call for an amendment to IEEE Std 802.3, formatted as a set of clauses. The suggested remedy would not satisfy the PAR and 5 Criteria.

The page count for this draft is not extraordinary in comparison to other recent projects in 802.3. As an example, IEEE Draft P802.3ae/D5.0 had a page count of 540 pages when it was approved by the sponsor ballot group and the IEEE-SA Standards Board.

It is expected that the IEEE publications staff will elect to publish EFM as the fifth volume of a future edition of IEEE Std 802.3, which will make it easy for the document reader to select the relevant specification.

For further information regarding document restructuring, see the file:

http://www.ieee802.org/3/efm/public/sep03/frazier_1_0903.pdf

P802.3ah Draft 2.1 Comments

Cl 00 SC P L # 99000

Parsons, Glenn Nortel Networks

Comment Type TR Comment Status R D2.0 #1167

Amalgamation of these numerous seemingly unrelated clauses into the 802.3 standard is unrealistic. That is, using 'Ethernet' to bind all these clauses together stretches the meaning of Ethernet beyond what was originally intended and also restricts how much can be changed to add new functionality.

SuggestedRemedy

Rework this draft to be a stand-alone standard for 'access' or 'carrier' Ethernet. This would primarily affect the amendments to clauses of 802.3. This draft would then, for example, have its own clause 4 with 'obsolete' material removed and new functions added. The existing 802.3 standard could then be termed as 'legacy' or 'enterprise' Ethernet.

Proposed Response Response Status U

REJECT.

The draft in its current form satisfies the PAR and 5 Criteria for the project, which call for an amendment to IEEE Std 802.3, formatted as a set of clauses. The suggested remedy would not satisfy the PAR and 5 Criteria.

Numerous prior projects performed amendments to the base standard. The scope of the changes described in the draft is consistent with past practice. With regard to the specific example given in the suggested remedy, the combination of physical layers described in the draft makes full use of the behavior and interfaces described in Clause 4, therefore nothing in Clause 4 can be considered "obsolete".

For further information regarding document restructuring, see the file:

http://www.ieee802.org/3/efm/public/sep03/frazier_1_0903.pdf

Cl 00 SC P L # 99003

Thompson, Geoff Nortel

Comment Type TR Comment Status R D2.0 #952

What is being proposed in many places throughout this draft is not a peer network. To introduce such a foreign concept into a document where the implicit and explicit notion of peer relationships is so thoroughly infused throughout the existing document is likely to cause (a) significant confusion and (b) significant errors.

SuggestedRemedy

Move non-peer proposals to a new and separate document that can thoroughly, explicitly and unambiguously embrace the concept of Ethernet Services over asymmetrical infrastructure.

Proposed Response Response Status U

REJECT.

The suggested remedy is ambiguous. What are "the non-peer proposals"? What is the "new and separate document"?

The draft in its current form satisfies the PAR and 5 Criteria for the project, which call for an amendment to IEEE Std 802.3, formatted as a set of clauses. The suggested remedy would not satisfy the PAR and 5 Criteria.

While there are asymmetric physical layer specifications in the draft, the services provided to the MAC Client are provided in the same fashion as the base standard. The peer relationship between MAC Clients described in the base standard is preserved.

Previous projects introduced physical layers with asymmetric behavior and characteristics.

For further information regarding document restructuring, see the file:

http://www.ieee802.org/3/efm/public/sep03/frazier_1_0903.pdf

P802.3ah Draft 2.1 Comments

Cl 00 SC P L # 527
 Thompson, Geoffrey Nortel Networks

Comment Type TR Comment Status R
 Regarding response to my D2.0 comment 952
 I consider the rejection to be non-responsive in the question as to what constitutes the "non-peer proposals". The answer to this is obvious to all informed participants in the 802.3 WG. Further, additional detail was provided in my D2.0 comment #975 as well as (for example) the text which sets this forth:
 30.5.1.1.15 aPhySide
 ATTRIBUTE
 APPROPRIATE SYNTAX:
 An ENUMERATED value that has one of the following entries:
 subscriber subscriber mode of operation
 office office mode of operation

SuggestedRemedy
 Implement my original requests

Proposed Response Response Status U
 REJECT.

This issue was previously discussed and voted on for D2.0. Below is some additional text to substantiate the previous response.

The commenter refers to a behavior of a physical layer to justify the claim that IEEE Draft P802.3ah/D2.1 contains "non-peer" proposals. This is misleading. IEEE Std 802.3 contains numerous precedents for physical layers that have different characteristics at each end of the link. See for instance the MDI and MDI-X port appearance in Clause 14. As previously asserted in the response to comment 975 from D2.0:

While there are asymmetric physical layer specifications in the draft, the services provided to the MAC Client are provided in the same fashion as the base standard. The peer relationship between MAC Clients described in the base standard is preserved.

Cl 00 SC P L 1 # 99004
 Grow, Robert Intel

Comment Type TR Comment Status A D2.0 #596
 Per recent changes, we should begin including the front matter in the draft by Sponsor Ballot.

SuggestedRemedy
 This is classified as a TR to assure it is implemented prior to Sponsor Ballot. The 802.3ah Editor-in-Chief will receive an appropriately edited copy of the front matter proposed for 802.3aj publication from the WG Chair at Ancona.

Proposed Response Response Status U
 ACCEPT.

Will include when the source file is provided by the 802.3 WG Chair.

Cl 00 SC P24 L51 # 99005
 Booth, Brad Intel

Comment Type TR Comment Status A D2.0 #562
 The Unidirectional OAM Enable bit use is not only required for OAM but is also required for an OLT to operate correctly.

SuggestedRemedy
 Change throughout the specification the name of Unidirectional OAM Enable to Forced Transmit. Change mr_unidirectional_oam_enable to mr_forced_tx.

Change in Table 22-7 and 22.2.4.1.12.
 Change in 24.2.3.2; strike OAMPDU in 24.2.4.2 on page 31, line 44; change in 24.3.4.5 and in Figure 24-16.
 Change in 36.2.5.1.3; 36.2.5.2.1.
 Change in 46.3.4; 46.3.4.2; 46.3.4.3.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

Refer to resolution of 1053.

Cl 00 SC 0 P1 L1 # 99006
 James, David JGG

Comment Type TR Comment Status R D2.0 #436
 A uniform notation for register, fields, state-machine names, functions, and constants is needed. Following is recommended:
 thisResetRegister -- lower case, run-together, italics
 thatField -- lower case, run-together, italics
 THIS_CONSTANT -- upper case with underscore word separators
 THAT_ENUMERATED_VALUE
 ThisFunction() -- Start caps, run-together, italics
 ThisStateMachine -- Start caps, run-together
 that_parameter -- service primitive parameter, underscore separators

SuggestedRemedy
 1) Accept this convention or _clearly_ define your own (spaces in names are not allowed)
 2) Describe this in some notation clause, if possible, or simply in the draft forward (if not possible).
 3) The Chief Editor should enforce this convention.

Proposed Response Response Status U
 REJECT.

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Cl 00 SC 00 P1 L # 34

David, James JGG

Comment Type E Comment Status R

Excess capitalization.

SuggestedRemedy

Only capitalize first word of sentence/heading or proper nouns.
Applicable throughout.

Proposed Response Response Status C

REJECT.

Some of these editorial changes will be done before the IEEE-SA ballot on draft 3.0

Cl 00 SC 00 P1 L 8 # 22

David, James JGG

Comment Type E Comment Status R

Many problems with headings are only discovered in the TOC,
such as alpha ==> a, or line wraps.

SuggestedRemedy

Include an automatic-generated 2-level TOC.

Proposed Response Response Status C

REJECT.

Some of these editorial changes will be done before the IEEE-SA ballot on draft 3.0

Cl 00 SC 22.2.4.1 P18 L 45 # 35

David, James JGG

Comment Type E Comment Status R

Inconsistent usage of R/W, as column heading and entry

SuggestedRemedy

When used as an entry, change R/W ==> RW
(throughout)

Proposed Response Response Status C

REJECT.

This affects more than just the tables that are being changed by EFM.

Cl 00 SC 4.2.3.2.2 P L # 509

Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status A

RE: D2.0 Comment 956

The response is adequate for my purposes in this particular instance.

TR #956 can be marked off as satisfied

SuggestedRemedy

Proposed Response Response Status C

ACCEPT.

Cl 00 SC 4.2.7.2 P L # 510

Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status A

RE: D2.0 Comment 957

The response is adequate for my purposes in this particular instance.

TR #957 can be marked off as satisfied

SuggestedRemedy

Proposed Response Response Status C

ACCEPT.

Cl 00 SC 4.2.8 P L # 511

Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status A

RE: D2.0 Comment 958

The response is adequate for my purposes in this particular instance.

TR #958 can be marked off as satisfied

SuggestedRemedy

Proposed Response Response Status C

ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 00 SC 4.4.2 P L # 513

Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status A

RE: D2.0 Comment 960
The response is adequate for my purposes in this particular instance.
TR #960 can be marked off as satisfied.

SuggestedRemedy

Proposed Response Response Status C

ACCEPT.

Cl 00 SC 4.4.2 P L # 512

Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status A

RE: D2.0 Comment 959
The response is adequate for my purposes in this particular instance.
TR #959 can be marked off as satisfied

SuggestedRemedy

Proposed Response Response Status C

ACCEPT.

Cl 00 SC 4.4.2 P L # 514

Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status A

RE: D2.0 Comment 961
The response is adequate for my purposes in this particular instance.
TR #961 can be marked off as satisfied.

SuggestedRemedy

Proposed Response Response Status C

ACCEPT.

Cl 00 SC 45.2.1 P81 L 23 # 99007

Thaler, Pat Agilent

Comment Type TR Comment Status A oD2.0 #1258

The existing registers need to be dealt with. Registers 1.0, 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 are defined as general registers. Therefore, they will apply to 10PASS-TS and 10PASS-TL devices. Text must be added to the existing subclauses to clarify how they are applied to the new PMDs.

SuggestedRemedy

Provide the necessary information.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Add text as suggested:

1.0 -- speed selection bits 13 & 6: add little table in each bit field:

```

13 6
-----
1 1 -- bits 5:2 select speed
0 x -- Unspecified
x 0 -- Unspecified
    
```

keep the same language as found in 45.3.1.1.3 - 802.3ae

-- bits 5:2, add one row in table for 10PASS-TS and 2BASE-TL (speed variable, with a pointer to the PMA/PMD select registers for each PMA/PMD) (use the 00001 codepoint)

1.1 -- this register applies to 10B/2P. Mention that local fault information is elaborated on for 10PASS-TS and 2BASE-TL with pointer to these registers

1.2:3 -- this register applies unchanged to 10P/2B

1.4 -- add two rows to the table referring to 10PASS-TS and 2BASE-TL

1.5:6 -- remove individual tables and text for registers 5 and 6 in each individual MMD. Add a global table and text right after Table 45-1, with explanatory text. Change all references in Clause 45 from the individual reg 5,6 tables and text to the global table. Also, add the rows corresponding to the tone table and Link Partner PMA/PMD MMDs to the global table.

Furthermore:

Remove bits 15,14 and 1 from Table 45-3 and the associated text. This, along with comment 327 removes this register completely.

Remove bits 15:13 from Table 45-4 and the associated text.

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CI 00 SC 45.2.1.14 P85 L5 # 99008

Thaler, Pat Agilent

Comment Type TR Comment Status A oD2.0 #1260

This comment applies to all counters that span 2 registers. A mechanism needs to be defined to ensure that the two counters are read with consistent values. Otherwise, the upper counter could roll between the reading of the two values and the manager would get an incorrect value for the two register quantity.

Also, these are each 2 registers, not 1. A register is one 16-bit addressable entity. Change the text to match that.

SuggestedRemedy

Define the mechanism. One method is to say that the most significant counter should be read first. When the most significant counter is read, the value in the least significant counter is held in a latch and the latched value rather than the current value of the counter is returned on a read of the least significant register.

Also, why aren't these counters clear on read and hold at all FFs? Is the assumption that they can't roll. If so, what is the time calculated for a 32 bit roll over?

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Add tag "MW=Multi-word" on multiword register tables. Add footnote. Add description in introduction.

As per the comment, change text for all "multi-word" registers to show that they are indeed separate 16-bit registers.

The mechanism for reading 32-bit counters is already defined globally for Clause 45 (replacing, as a service to humanity, the individual descriptions on a per register basis). See 45.2 amendments in 802.3ah Draft 2.0 (page 80, line 46).

Add text so that when the Most sig. 16 bits are read, the value of the lower 16 is latched, and the register contents are cleared to all zeros. This creates "clear on read" counters.

remove current edits to the WIS MMD 32-bit counters and add an additional note "NOTE - These counters do not follow the behavior described in 45.2"

CI 01 SC 1.4 P L # 507

Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status R

RE: D2.0 Comment 954
Draft not updated according to accepted resolution.

SuggestedRemedy

Re-edit to accepted resolution rather than the proposed resolution.

Proposed Response Response Status C

REJECT.

Please refer to resolution of comment 954 per decision of the TF

CI 01 SC 1.4 P L # 508

Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status A

RE: D2.0 Comment 955

SuggestedRemedy

D2.0 Resolution (Reject) Accepted by balloter

Proposed Response Response Status C

ACCEPT.

CI 01 SC 1.4 P11 L36 # 170

Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

2BASE-TL is specified in Clause 61 and 63.
Wrong cross reference

SuggestedRemedy

correct cross reference

Proposed Response Response Status C

ACCEPT.

P802.3ah Draft 2.1 Comments

CI 01 SC 1.4 P11 L38 # 44

David, James JGG

Comment Type E Comment Status R

Excess capitalization.

SuggestedRemedy

Aggregation group ==> aggregation group
 Bandplan ==> bandplan
 Coupled Power Ratio ==> coupled power ratio
 Grant ==> grant
 Logical Link Identifier ==> logical link identifier
 ...
 (only proper nouns to be capitalized)

Proposed Response Response Status C

REJECT.

Some of these editorial changes will be done in preperation of D3.0

CI 01 SC 1.4 P11 L49 # 427

Tom Mathey Independent

Comment Type E Comment Status R

Bad grammer, add a verb to sentence.

SuggestedRemedy

which end of a link "is" closer

Proposed Response Response Status C

REJECT.

Some of these editorial changes will be done in preperation of D3.0

CI 01 SC 1.4 P11 L7 # 404

Dawe, Piers Agilent

Comment Type T Comment Status D

This definition needs revision or qualification, as 'segment' can mean PON on clause 67.
 '1.4.159 link segment: The point-to-point full-duplex medium connection between two and only two Medium Dependent Interfaces (MDIs).'

SuggestedRemedy

?

Proposed Response Response Status Z

WITHDRAWN.

Could the commenter suggest a remedy

CI 01 SC 1.4 P12 L52 # 334

Dawe, Piers Agilent

Comment Type T Comment Status D

Need to add a definition for "unit interval". This is trickier to write than it seems: need to cover e.g. Manchester code and/or multilane and/or multilevel transmission formats. For info: <http://www.atis.org/tg2k/> has "unit interval: In isochronous transmission, the longest interval of which the theoretical durations of the significant intervals of a signal are all whole multiples." Can anyone improve on my attempt below?

SuggestedRemedy

Add 'unit interval' to the definitions list 1.4: 'A period of time, usually allocated for the transmission of one symbol on one channel; the inverse of the modulation rate.'

Proposed Response Response Status Z

WITHDRAWN.

CI 01 SC 1.4 P12 L54 # 428

Tom Mathey Independent

Comment Type E Comment Status R

Bad grammer, add a verb to sentence.

SuggestedRemedy

which end of a link "is" closer

Proposed Response Response Status C

REJECT.

Some of these editorial changes will be done in preperation of D3.0

CI 01 SC 1.5 P13 L16 # 16

David, James JGG

Comment Type E Comment Status R

Excess capitalization.

SuggestedRemedy

Central Office ==> central office
 Discrete Multi-Tone ==> discrete multi-tone
 ...
 Forward Error Correction
 ...
 (only proper nouns to be capitalized)

Proposed Response Response Status C

REJECT.

Some of these editorial changes will be done in preperation of D3.0

P802.3ah Draft 2.1 Comments

Cl 01 SC 1.5 P13 L33 # 99075
 James, David JGG
 Comment Type **TR** Comment Status **R** D2.0 #400
 Define VDSL.
SuggestedRemedy
 1) Add term for VDSL
 2) Spell out that term when used below:
 VTU-O VDSL transceiver unit - CO side (10PASS-TS-O)
 ~~~  
 VTU-R VDSL transceiver unit - CPE side (10PASS-TS-R)  
 ~~~  
 Proposed Response Response Status **U**
 REJECT.
 The abbreviations have been removed from the draft.

Cl 01 SC 1.5 P13 L53 # 130
 Beck, Michael Alcatel Bell nv
 Comment Type **E** Comment Status **A**
 Missing abbreviation: UPBO
SuggestedRemedy
 Add abbreviation:
 UPBO: Upstream power back-off
 Also update Table 45-24, which uses the abbreviation USPBO.
 Proposed Response Response Status **C**
 ACCEPT IN PRINCIPLE.

Cl 22 SC 22.2.2.1.7 P L # 523
 Thompson, Geoffrey Nortel Networks
 Comment Type **E** Comment Status **R**
 RE: D2.0 Comment 971
 The response is adequate for my purposes in this particular instance.
 TR #971 can be marked off as satisfied.
 (I am having great difficulty reviewing the changes in the draft.
 The version labeled 8023ahD2_1_DIFF.pdf seems to not show the complete differences. In particular in this clause the deleted text is not shown. This makes it exceedingly difficult to track the changes put into the text. It also makes it difficult to determine what is in scope for commenting.)
SuggestedRemedy
 Show all changes between drafts in underline blue for inserts and blue strikethrough for deletions. Black strikethrough and underline would be reserved for the changes to be made against 802.3.

Proposed Response Response Status **C**
 REJECT.
 Removing all deleted text is consistent with prior projects (10G). There are no plans to show deleted text in future drafts.

Cl 22 SC 22.2.2.1.7 P L # 519
 Thompson, Geoffrey Nortel Networks
 Comment Type **E** Comment Status **A**
 RE: D2.0 Comment 970
 The response is adequate for my purposes in this particular instance.
 TR #970 can be marked off as satisfied.
SuggestedRemedy
 Proposed Response Response Status **C**
 ACCEPT.

Cl 22 SC 22.2.2.1.7 P L # 520
 Thompson, Geoffrey Nortel Networks
 Comment Type **E** Comment Status **A**
 RE: D2.0 Comment 969
 The response is adequate for my purposes in this particular instance.
 TR #969 can be marked off as satisfied.
SuggestedRemedy
 Proposed Response Response Status **C**
 ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 22 SC 22.2.2.1.7 P L # 522

Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status R

RE: D2.0 Comment 972
The response is adequate for my purposes in this particular instance.
TR #972 can be marked off as satisfied.

(I am having great difficulty reviewing the changes in the draft. The version labeled 8023ahD2_1_DIFF.pdf seems to not show the complete differences. In particular in this clause the deleted text is not shown. This makes it exceedingly difficult to track the changes put into the text. It also makes it difficult to determine what is in scope for commenting.)

SuggestedRemedy

Show all changes between drafts in underline blue for inserts and blue strikethrough for deletions. Black strikethrough and underline would be reserved for the changes to be made against 802.3.

Proposed Response Response Status C

REJECT.

Removing all deleted text is consistent with prior projects (10G). There are no plans to show deleted text in future drafts.

Cl 22 SC 22.2.2.1.7 P L # 521

Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status A

RE: D2.0 Comment 968
The response is adequate for my purposes in this particular instance.
TR #968 can be marked off as satisfied.

SuggestedRemedy

Proposed Response Response Status C

ACCEPT.

Cl 22 SC 22.2.4 P23 L34 # 99018

James, David JGG

Comment Type TR Comment Status R D2.0 #403

The register name and description here hopelessly merged, confusing this reading and following uses of register names.

SuggestedRemedy

- 1) Split the "Register name" into two columns, one for name and one for description.
- 2) Use run-together no-space words for register names, such as:
pseControlRegister or
PseControlRegister or
pse_control_register
(listed in my order of preference)
- 3) Adopt a uniform convention for register names throughout the draft.

Proposed Response Response Status U

REJECT.

This is an existing table that is having some lines added to it. It would be out of scope to make such a change as you're suggesting. Each register is described in the text. The table is not the proper location for a description.

Cl 22 SC 22.2.4.1 P L # 515

Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status A

RE: D2.0 Comment 963
The response is adequate for my purposes in this particular instance.
TR #963 can be marked off as satisfied.

SuggestedRemedy

Proposed Response Response Status C

ACCEPT.

Cl 22 SC 22.2.4.1 P18 L19 # 481

Booth, Brad Intel

Comment Type E Comment Status R

Leave the spelling of the word Auto-Negotiation as it was.

SuggestedRemedy

Change auto-negotiation back to Auto-Negotiation in 0.12 and 0.9 to keep the naming consistent with the register bit definitions.

Proposed Response Response Status C

REJECT.

Sorry, I got a little carried away with the whole "excess capitalization" thing. I will incorporate this change as an editorial correction to the sponsor ballot draft.

P802.3ah Draft 2.1 Comments

Cl 22 SC 22.2.4.1 P18 L 45 # 17

David, James JGG

Comment Type E Comment Status R

Inconsistent usage of R/W, as column heading and entry

SuggestedRemedy

When used as an entry, change R/W ==> RW (throughout)

Proposed Response Response Status C

REJECT.

This affects more than just the tables that are being changed by EFM.

Cl 22 SC 22.2.4.1 P24 L 1 # 99019

Thompson, Geoff Nortel

Comment Type TR Comment Status A CarrierGrade D2.0 #963

Leave Table 22-7 in Legacy as prime reference

SuggestedRemedy

Carrier Grade refers to Legacy cl 6 master reference, or there is a block reserved in Legacy for CG & the details are in CG.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl 22 SC 22.2.4.1.12 P19 L 11 # 483

Booth, Brad Intel

Comment Type E Comment Status A

Register bit definitions make reference to a variable called link_status, yet link_status is not defined in Clause 22 and has multiple definitions throughout 802.3.

SuggestedRemedy

Change the definitions from "on the value of link_status" to "on the value of Link Status (bit 1.2)". In 22.2.4.2.8, change end of paragraph to read "only when the Link Status (bit 1.2) is one."

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

This bit uses a latching function so does not satisfy the requirements of this function.

The following changes will be made as editorial changes to sponsor ballot draft.

It is true that the term link_status is not appropriate for all PHYs, in particular the 1000BASE-X PHY from Clause 36. However, this bit uses a latching function so does not satisfy the requirements of this function.

Replace all instances of "regardless of link_status" or "regardless of the value of link_status" with "regardless of whether the PHY has determined that a valid link has been established".

Replace all instances of "link_status=TRUE" with "the PHY has determined that a valid link has been established".

Replace all instances of "dependent on the value of link_status" with "dependent on whether the PHY has determined that a valid link has been established"

Cl 22 SC 22.2.4.1.12 P19 L 18 # 482

Booth, Brad Intel

Comment Type E Comment Status R

Second paragraph should proceed the first paragraph as it defines whether or not this bit is even used. The second paragraph could also be shortened to make the explanation better.

SuggestedRemedy

Move second paragraph to the beginning of subclause and change to read: If a PHY reports via bit 1.7 that it lacks the ability to encode and transmit data from the media independent interface regardless of the value of link_status, the PHY shall return a value of zero in bit 0.1, and any attempt to write to bit 0.1 shall be ignored.

Proposed Response Response Status C

REJECT.

There is nothing technically wrong with this text. If this is a real concern to the submitter, he is urged to re-submit in sponsor ballot.

P802.3ah Draft 2.1 Comments

Cl 22 SC 22.2.4.1.12 P19 L 25 # 546
 Dawe, Piers Agilent

Comment Type TR Comment Status A

Criterion 'device is a 1000BASE-PX PHY' is too simple. A 1000BASE-PX-D must be able to transmit grants before receiving idles to allow the ONUs to start. An ONU, unless it's the only ONU on a PON, should never transmit with bad received signal status. I suppose the second point could be made in 22.2.4.2.8.

SuggestedRemedy

Rewrite after consulting PON experts.

Proposed Response Response Status C

ACCEPT.

Replace both instances of 1000BASE-PX with 1000BASE-PX-D in this paragraph and the instances in PICS entries MF40 & MF41.

Cl 22 SC 22.2.4.1.12 P19 L 9 # 516
 Thompson, Geoffrey Nortel Networks

Comment Type TR Comment Status R

I am having great difficulty reviewing the changes in the draft. The version labeled 8023ahD2_1_DIFF.pdf seems to not show the complete differences. In particular in this clause the deleted text is not shown. This makes it exceedingly difficult to track the changes put into the text. It also makes it difficult to determine what is in scope for commenting.

SuggestedRemedy

Show all changes between drafts in underline blue for inserts and blue strikeout for deletions. Black stikeouot and underline would be reserved for the changes to be made against 802.3.

Proposed Response Response Status U

REJECT.

Removing all deleted text is consistent with prior projects (10G). There are no plans to show deleted text in future drafts.

Cl 22 SC 22.2.4.1.12 P24 L 51 # 99020
 Thompson, Geoff Nortel

Comment Type TR Comment Status A CarrierGrade D2.0 #964

Delete as option in Legacy

SuggestedRemedy

Insert into Carrier Grade

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl 22 SC 22.2.4.2 P26 L 3 # 99021
 Thompson, Geoff Nortel

Comment Type TR Comment Status A CarrierGrade D2.0 #965

Leave Table 22-8 in Legacy as prime reference

SuggestedRemedy

Carrier Grade refers to Legacy cl 6 master reference, or there is a block reserved in Legacy for CG & the details are in CG.

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl 22 SC 22.2.4.2.8 P19 L 36 # 518
 Thompson, Geoffrey Nortel Networks

Comment Type TR Comment Status R

Bit 1.7 label was changed from "Unidirectional OAM Ability" in D2.0 to "Unidirectional Ability" in D2.1.

I object to the change.
 I object to the fact that the change was not labeled as a change.

This is not a satisfactory resolution to my D2.0 comment #966

SuggestedRemedy

Show all changes between drafts as changes.
 Undo this particular change.
 Implement the original remedy in D2.0 #966

Proposed Response Response Status U

REJECT.

This comment is a reiteration of comment 966 from D2.0 and is rejected for the same reasons.

Cl 22 SC 22.2.4.2.8 P27 L 3 # 99022
 Thompson, Geoff Nortel

Comment Type TR Comment Status A CarrierGrade D2.0 #966

Delete as option in Legacy

SuggestedRemedy

Insert into Carrier Grade

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

See resolution to comment #952

P802.3ah Draft 2.1 Comments

Cl 22 SC 22.2.4.3 P20 L24 # 517

Thompson, Geoffrey Nortel Networks

Comment Type TR Comment Status R

Bit 1.7 label was changed from "Unidirectional OAM Ability" in D2.0 to "Unidirectional Ability" in D2.1.

I object to the change.

I object to the fact that the change was not labeled as a change

SuggestedRemedy

Show all changes between drafts as changes.

Undo this particular change.

Proposed Response Response Status U

REJECT.

This comment is a reiteration of comment 966 from D2.0 and is rejected for the same reasons. The change doesn't show up since there is only deleted text and deleted text differences are noted.

Cl 22 SC 22.7.3.4 P23 L8 # 18

David, James JGG

Comment Type E Comment Status R

Notation is very confusing:
0.12 = 0

Not with my mathematics anyway.

SuggestedRemedy

Express this better.

Proposed Response Response Status C

REJECT.

This affects more than just the PICS that are being added by EFM.

Cl 30 SC 30.11.1.1.12 P51 L50 # 15

Messenger, John ADVA Optical Network

Comment Type TR Comment Status A

30.11.1.1.12 and 13 (aOamRemoteVendorIdDeviceNumber and aOamRemoteVendorIdVersion) both reflect objects which no longer correspond to fields in the OAM.

SuggestedRemedy

Suggest deleting these objects and replacing them with one object called aOamRemoteVendorSpecificInfo, corresponding to the object defined in table 57-11 (Vendor Specific Information). I am no expert, but perhaps a syntax of BIT STRING [SIZE(32)]. BEHAVIOUR DEFINED AS "A string of 32 bits corresponding to the Vendor Specific Information field (table 57-11) of the most recently received OAMPDU. This value is updated on reception..." (remaining text taken from existing 30.11.1.1.11).

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Summary of changes:

Delete two attributes, add one new attribute, update Table 30-5 and Annex 30A as required.

Delete the two attributes:

aOamRemoteVendorIdDeviceNumber and aOamRemoteVendorIdVersion

Add the new attribute:

aOamRemoteVendorSpecificInfo
ATTRIBUTE

APPROPRIATE SYNTAX:
INTEGER

BEHAVIOUR DEFINED AS:
The value of the Vendor Specific Information field (table 57-11) of the most recently received Information OAMPDU.

This value is updated on reception of a valid frame, with (1) destinationField equal to the reserved multicast address for Slow_Protocols specified in CROSS REF Table 43B-1, (2) lengthOrType field value equal to the reserved Type for Slow_Protocols as specified in CROSS REF Table 43B-2, (3) a Slow_Protocols subtype value equal to the subtype reserved for OAM as specified in Table 43B-3, (4) a OAMPDU code equal to the Information code as specified in Table 57-4.;

P802.3ah Draft 2.1 Comments

Cl 30 SC 30.11.1.1.31 P57 L2 # 5

Martin, David Nortel Networks

Comment Type T Comment Status A

The Errored Symbols field and Event Running Total field (c.f. clause 57.5.3.1 f, h) are not captured here.

SuggestedRemedy

Add two INTEGERS for the transmitted Errored Symbols field and Event Running Total field.

Proposed Response Response Status C

ACCEPT.

The modified attribute will read:

30.11.1.1.31 aOAMLocalErrSymPeriodEvent

ATTRIBUTE

APPROPRIATE SYNTAX:

A SEQUENCE of six instances of the type INTEGER
 The first INTEGER represents the Event Time Stamp field
 The second INTEGER represents the Errored Symbol Window field
 The third INTEGER represents the Errored Symbol Threshold field
 The fourth INTEGER represents the Errored Symbol field
 The fifth INTEGER represents the Error Running Total field
 The sixth INTEGER represents the Event Running Total field

BEHAVIOUR DEFINED AS:

A sequence of six integers corresponding to the respective fields in the most recently transmitted Errored Symbol Period Event TLV in an Event Notification OAMPDU (see 57.4.3.2).
 This sequence is updated when a CTL:OAMI.request service primitive is generated within the OAM sublayer with an OAMPDU Code field value equal to the Event Notification code as specified in Table 57-4 and Event TLV Type field equal to the Errored Symbol Period Event value as specified in Table 57-12.;

Cl 30 SC 30.11.1.1.33 P57 L33 # 6

Martin, David Nortel Networks

Comment Type T Comment Status A

The Errored Frames field and Event Running Total field (c.f. clause 57.5.3.2 f, h) are not captured here.

SuggestedRemedy

Add two INTEGERS for the transmitted Errored Frames field and Event Running Total field.

Proposed Response Response Status C

ACCEPT.

The modified attribute will read:

30.11.1.1.33 aOAMLocalErrFrameEvent

ATTRIBUTE

APPROPRIATE SYNTAX:

A SEQUENCE of six instances of the type INTEGER
 The first INTEGER represents the Event Time Stamp field
 The second INTEGER represents the Errored Frame Window field
 The third INTEGER represents the Errored Frame Threshold field
 The fourth INTEGER represents the Errored Frames field
 The fifth INTEGER represents the Error Running Total field
 The sixth INTEGER represents the Event Running Total field

BEHAVIOUR DEFINED AS:

A sequence of six integers corresponding to the respective fields in the most recently transmitted Errored Frame Event TLV in an Event Notification OAMPDU (see 57.4.3.2).
 This sequence is updated when a CTL:OAMI.request service primitive is generated within the OAM sublayer with an OAMPDU Code field value equal to the Event Notification code as specified in Table 57-4 and Event TLV Type field equal to the Errored Frame Event value as specified in Table 57-12.;

P802.3ah Draft 2.1 Comments

Cl 30 SC 30.11.1.1.35 P58 L9 # 7

Martin, David Nortel Networks

Comment Type T Comment Status A

The Errored Frames field and Event Running Total field (c.f. clause 57.5.3.3 f, h) are not captured here.

SuggestedRemedy

Add two INTEGERS for the transmitted Errored Frames field and Event Running Total field.

Proposed Response Response Status C

ACCEPT.

The modified attribute will read:

30.11.1.1.35 aOAMLocalErrFramePeriodEvent

ATTRIBUTE
APPROPRIATE SYNTAX:

A SEQUENCE of six instances of the type INTEGER
The first INTEGER represents the Event Time Stamp field
The second INTEGER represents the Errored Frame Window field
The third INTEGER represents the Errored Frames field
The fourth INTEGER represents the Errored Frame Threshold field
The fifth INTEGER represents the Error Running Total field
The sixth INTEGER represents the Event Running Total field

BEHAVIOUR DEFINED AS:

A sequence of six integers corresponding to the respective fields in the most recently transmitted Errored Frame Period Event TLV in an Event Notification OAMPDU (see 57.4.3.2).
aThis sequence is updated when a CTL:OAMI.request service primitive is generated within the OAM sublayer with an OAMPDU Code field value equal to the Event Notification code as specified in Table 57-4 and Event TLV Type field equal to the Errored Frame Period Event value as specified in Table 57-12.;

Cl 30 SC 30.11.1.1.37 P58 L38 # 9

Martin, David Nortel Networks

Comment Type E Comment Status R

Missing word

SuggestedRemedy

Should read:
"...represents the Errored Frame Second Summary Window field"

Proposed Response Response Status C

REJECT.

Will incorporate this change as an editorial correction to the Sponsor draft.

Cl 30 SC 30.11.1.1.37 P58 L39 # 10

Martin, David Nortel Networks

Comment Type E Comment Status R

Missing word

SuggestedRemedy

Should read:
"...represents the Errored Frame Second Summary Threshold field"

Proposed Response Response Status C

REJECT.

Will incorporate this change as an editorial correction to the Sponsor draft.

Cl 30 SC 30.11.1.1.37 P58 L40 # 8

Martin, David Nortel Networks

Comment Type T Comment Status A

The Errored Frame Second Summary field and Event Running Total field (c.f. clause 57.5.3.4 f, h) are not captured here.

SuggestedRemedy

Add two INTEGERS for the transmitted Errored Frame Second Summary field and Event Running Total field.

Proposed Response Response Status C

ACCEPT.

30.11.1.1.37 aOAMLocalErrFrameSecsSummaryEvent

ATTRIBUTE

APPROPRIATE SYNTAX:

A SEQUENCE of six instances of the type INTEGER
The first INTEGER represents the Event Time Stamp field
The second INTEGER represents the Errored Frame Second Summary Window field
The third INTEGER represents the Errored Frame Second Summary Threshold field
The fourth INTEGER represents the Errored Frame Second Summary field
The fifth INTEGER represents the Error Running Total field
The sixth INTEGER represents the Event Running Total field

BEHAVIOUR DEFINED AS:

A sequence of six integers corresponding to the respective fields in the most recently transmitted Errored Frame Seconds Summary Event TLV in an Event Notification OAMPDU (see 57.4.3.2).
This sequence is updated when a CTL:OAMI.request service primitive is generated within the OAM sublayer with an OAMPDU Code field value equal to the Event Notification code as specified in Table 57-4 and Event TLV Type field equal to the Errored Frame Seconds Summary Event value as specified in Table 57-12.;

P802.3ah Draft 2.1 Comments

Cl 30 SC 30.11.1.1.38 P59 L3 # 11

Martin, David Nortel Networks

Comment Type T Comment Status A

The Errored Symbols field and Event Running Total field (c.f. clause 57.5.3.1 f, h) are not captured here.

SuggestedRemedy

Add two INTEGERS for the received Errored Symbols field and Event Running Total field.

Proposed Response Response Status C

ACCEPT.

Cl 30 SC 30.11.1.1.39 P59 L26 # 12

Martin, David Nortel Networks

Comment Type T Comment Status A

The Errored Frames field and Event Running Total field (c.f. clause 57.5.3.2 f, h) are not captured here.

SuggestedRemedy

Add two INTEGERS for the received Errored Frames field and Event Running Total field.

Proposed Response Response Status C

ACCEPT.

Cl 30 SC 30.11.1.1.40 P59 L49 # 13

Martin, David Nortel Networks

Comment Type T Comment Status A

The Errored Frames field and Event Running Total field (c.f. clause 57.5.3.3 f, h) are not captured here.

SuggestedRemedy

Add two INTEGERS for the received Errored Frames field and Event Running Total field.

Proposed Response Response Status C

ACCEPT.

Cl 30 SC 30.11.1.1.41 P60 L18 # 14

Martin, David Nortel Networks

Comment Type T Comment Status A

The Errored Frame Second Summary field and Event Running Total field (c.f. clause 57.5.3.4 f, h) are not captured here.

SuggestedRemedy

Add two INTEGERS for the received Errored Frame Second Summary field and Event Running Total field.

Proposed Response Response Status C

ACCEPT.

Cl 30 SC 30.2.2.1 P29 L38 # 429

Tom Mathey Independent

Comment Type T Comment Status R

For the text description of managed object oResourceTypeID, there is a reference to PHY Identifier (22.2.4.3.1). There should also be a reference to Clause 45.

SuggestedRemedy

Add reference to clause 45.

Proposed Response Response Status C

REJECT.

This comment is on text that is unchanged by IEEE P802.3ah is therefore out of scope. This text is only provided to assist the reviewer so that they do not need to open multiple documents to check the resultant text of this subclause after the IEEE P802.3ah changes have been incorporated.

While the commenter may wish to submit a Maintenance request if they believe that this is an error, it should be noted that the Clause 45 register do not support a PHY identifier register. Clause 45 uses the concept of MMDs where each of the sublayers that form a PHY, such as the PCS, PMA and PMA/PMD sublayer, provide their own set of registers. Thus the sublayers for a PHY may consist of sublayers that are sourced from differing vendors and no one PHY identifier could be, nor therefore is, provided.

P802.3ah Draft 2.1 Comments

Cl 30 SC 30.3.1.20 P45 L44 # 99033
 Thompson, Geoff Nortel

Comment Type TR Comment Status A D2.0 #971

Remove change. It is unnecessary as:
 there are no new "modes" proposed for 1.4 that I find
 A PON needs this counter because it is a "A mode of operation ... in which DTEs contend for access to a shared medium. (ref 1.4.139)

SuggestedRemedy

Remove change

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

As described in subclause 61.1.4.1.1 'Summary of MAC-PHY Rate Matching specification', the 2BASE-TL/10PASS-TS PCS matches the MAC's rate of data transmission to the transmission data rate of the medium, if slower, through the use of deference function as defined in 4.2.3.2.1.

This Rate Matching function can cause excessive deferrals which will result in the excessive deferral counter being incremented as reported in the aFramesWithExcessDeferral attribute. Hence as with full duplex operation, the contents are also undefined when operating with a 2BASE-TL or 10PASS-TS PHY.

Based on accepting that references to any new MAC mode should be removed (comment #972) the last sentence of 30.3.1.1.20 should be changed to read 'The contents of this attribute are undefined for MAC entities operating in full duplex mode and also when connected to a PHY utilizing the MAC-PHY Rate Matching defined in 61.1.4.1.1.:'

Note: Commenter thinks this is okay but wants this to be review in detail during the re-circulation.

Cl 30 SC 30.3.2.1.2 P35 L26 # 547
 Dawe, Piers Agilent

Comment Type T Comment Status A

Clause 36 is no longer the only 1000BASE-X PCS/PMA. Do we need new aPhyTypes for clause 66.2 PCS? It doesn't seem sufficiently different. Similarly for 100BASE-X.

SuggestedRemedy

Change 'Clause 24' to 'Clause 24 or subclause 66.1', change 'Clause 36' to 'Clause 36 or subclause 66.2' , here and in 30.3.2.1.3. Similarly in 30.5.1.1.2.

Proposed Response Response Status C

ACCEPT.

Cl 30 SC 30.3.2.1.5 P L # 524
 Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status A

RE: D2.0 Comment 973
 The response is adequate for my purposes in this particular instance.
 TR #973 can be marked off as satisfied.

SuggestedRemedy

Proposed Response Response Status C

ACCEPT.

Cl 30 SC 30.3.5 P L # 525
 Thompson, Geoffrey Nortel Networks

Comment Type E Comment Status A

RE: D2.0 Comment 974
 I can't figure out what happened here. Maybe David can explain it to me

SuggestedRemedy

Proposed Response Response Status C

ACCEPT.

In response to comment 974 subclause 30.2.3 was updated to include two new objects, the oMPCP object and the oPAUSEEntity object. The oMACControlFunctionEntity, which didn't exist, was removed from 30.2.3. Figure 30-3 was also updated to show both the oMPCP object and the oPAUSEEntity object with the oMACControlFunctionEntity object removed.

Cl 30 SC 30.3.5 P48 L27 # 99034
 Thompson, Geoff Nortel

Comment Type TR Comment Status A D2.0 #974

No provision for subclause in preceeding material in this clause, e.g. 30.2.2.1, 30.2.3

SuggestedRemedy

Remove all of 30.3.5

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

Subclause 30.2.2.1 and 30.2.3 were not updated as these don't show the existing instance of oMACControlFunctionEntity, the oPAUSEEntity object. See subclause 30.3.4 'PAUSE entity managed object class'.

On further consideration this doesn't seem correct and subclause 30.2.2.1 and 30.2.3 will be updated to include the oMPCP object as well as the oPAUSEEntity object however subclause 30.3.5 will not be removed.

P802.3ah Draft 2.1 Comments

Cl 30 SC 30.5.1.1.12 P L # 30001

Tom Mathey

Comment Type T Comment Status R

Misfiled comment against 45.

The change to Clause 30.5.1.1.12 for aPCSCodingViolation has an inherent fault. The proposed text for aPCSCodingViolation will count as coding violations:

1. errors received from the lower layer,
2. PCS CRC errors, and
3. will not count the per link coding violations errors when loop agg discards the frame (due to a coding violation) and sends up a garbage frame.

SuggestedRemedy

Keep the clause 45 specific coding violation counter, with proper Clause 30 attributes for per wire pair counts. Include case for when loop agg is not present.

Proposed Response Response Status C

REJECT.

This attribute is in the 100/1000 monitor capability (see Table 30-5) which only applies to 100Mb/s and 1000Mb/s PHYs therefore does not apply to 10PASS-TS and 2BASE-TL PHYs.

Cl 30 SC 30.5.1.1.12 P L # 526

Thompson, Geoffrey

Nortel Networks

Comment Type T Comment Status A

RE: D2.0 Comment 976
TR #976 can be changed to T.

SuggestedRemedy

Proposed Response Response Status C

ACCEPT.

Cl 30 SC 30.5.1.1.12 P 43 L 29 # 431

Tom Mathey

Independent

Comment Type T Comment Status R

The text about aPCSCodingViolation says "data reception with errors". This text thus includes PMA errors, PCS CRC errors, excludes the cases where the loop agg function discards frames/fragments, etc. in the aPCSCodingViolation count.

This text does not include the case where loop agg is available, enabled, operational, and a user needs to count aPCSCodingViolation on a per link basis.

SuggestedRemedy

Add a Clause 61 specific counter for aPCSCodingViolation, and use counter for values. In Clause 30, provide index from 0 to 31 to access wire pair specific counter. Include case for no loop agg.

Proposed Response Response Status C

REJECT.

This attribute is in the 100/1000 monitor capability (see Table 30-5) which only applies to 100Mb/s and 1000Mb/s PHYs therefore does not apply to 10PASS-TS and 2BASE-TL PHYs.

P802.3ah Draft 2.1 Comments

Cl 30 SC 30.5.1.1.12 P43 L33 # 549

Dawe, Piers Agilent

Comment Type TR Comment Status A

This counter needs more careful consideration.
 25 000 000 counts per second (1/5 line rate!) is too fast for 100 Mb/s implementations.
 Maximum increment rate is defined for 100 Mb/s but not for 1000 Mb/s. Maybe not defining is better, but there's an inconsistency to be cleared up.

SuggestedRemedy

If you want to tune the maximum counter rate to the line rate, then line rate/1000 or line rate/10000 is reasonable. If you want to keep maximum counter rate same across different speeds, then would need to say what 'maximum increment rate' means.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

To answer the second part of the comment first, in regard to providing increment rates for different speeds, the existing standard already states in subclause '30.2.1 Introduction' (see IEEE Std 802.3ae-2002):

'When a counter has a maximum increment rate specified at one speed of operation, and that counter is appropriate to a higher speed of operation, then the maximum increment rate at that higher speed of operation is

$$\text{maximum increment rate specified at } \frac{\text{higher speed of operation in Mb/s}}{\text{specified speed of operation in Mb/s}}$$

unless otherwise indicated.'

With respect to the increment rate of the aPCSCodingViolation attribute, for the case of 100Mb/s operation, the worse case is where RX_ER is being asserted, due to a burst error, on every clock edge of the MII. In this case the counter will have to be able to increment at the rate of the MII clock, 25MHz. The maximum increment rate at 100Mb/s therefore is 25 000 000 counts per second as stated.

In the case of 1000Mb/s operation, the worse case again is where RX_ER is being asserted on every clock edge of the GMII. In this case the counter will have to be able to increment at the rate of the GMII clock, 125MHz. The maximum increment rate at 1000Mb/s therefore is 125 000 000 counts per second which isn't the usual 10 times increase in rate at 10 times the speed as the equation quoted above from subclause 30.2.1 indicates. The text will therefore be changed to read:

Generalized nonresettable counter. This counter has a maximum increment rate of 25 000 000 counts per second for 100 Mb/s implementations and 125 000 000 counts per second for 1000 Mb/s implementations.

Cl 30 SC 30.5.1.1.12 P43 L38 # 551

Dawe, Piers Agilent

Comment Type E Comment Status R

Missing spaces

SuggestedRemedy

100 Mb/s, 1000 Mb/s

Proposed Response Response Status C

REJECT.

Will incorporate this change as an editorial correction to the Sponsor draft.

Cl 30 SC 30.5.1.1.13 P43 L48 # 550

Dawe, Piers Agilent

Comment Type T Comment Status A

Considering the FEC block length, 25 000 000 counts per second (1/50 line rate!) is too fast for 1000 Mb/s implementations.

SuggestedRemedy

Work out what's reasonable and use that limit. Also for 30.5.1.1.14.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

For 10PASS-TS the block rate is 5000 blocks/second at 10Mb/s. For 1000BASE-X Block size if 500 000 blocks/second at 1000Mb/s. Since one or more errors per block can be corrected the increment rate of the counter is equal to the Block rate.

P802.3ah Draft 2.1 Comments

Cl 30 SC 30.5.1.1.13 P55 L37 # 99035

Thompson, Geoff

Nortel

Comment Type T Comment Status R D2.0 #976

This counter is redundant to the existing counter defined in 30.3.2.1.5, aSymbolErrorDuringCarrier. Further, it is difficult to read and implement as it operates at (almost) data bit rate. Operating at this speed and its resultant potential for large counts with low meaning is contrary to the established philosophy of 802.3 Layer Management.

SuggestedRemedy

Remove proposed counter and use the existing one to capture the required information.

Proposed Response Response Status C

REJECT.

The aPCSCodingViolation counter was added in support of the OAM Link Monitoring objective to provide a more accurate measure of the link error rate.

This counter is not a duplicate of aSymbolErrorDuringCarrier since the aSymbolErrorDuringCarrier counter will only increment once regardless of the number of symbol errors during a packet, the aPCSCodingViolation will be incremented once for each symbol error during a packet.

In respect to the increment rate it is no faster than the current subclause 30.5.1.1.11 aldleErrorCount which is supported by both 100BASE-T2 and 1000BASE-T and can therefore increment at symbol rate for these PHYs as well.

Y: 7
N: 0
A: 0

Cl 30 SC 30.5.1.1.16 P44 L27 # 309

Beili, Edward

Actelis Networks

Comment Type TR Comment Status D

aPHYCurrentStatus parameter values defined describe an individual PMA/PMD (PMI) status, not suited to be called PHY in case of PMI aggregation. In addition Initialization states are not reflected. Also a similar object is needed per PMA/PMD.

SuggestedRemedy

Leave values that make sense in aggregated PMI case. i.e.

noDefect - no defect
noPmiAssigned - no PMIs assigned in case of PMI aggregation

lossOfFraming - one or more PMIs in the aggregation group indicate Loss of Framing
lossOfSignal - one or more PMIs in the aggregation group indicate Loss of Signal
lossOfPower - one or more PMIs in the aggregation group indicate Loss of Power
lossOfSignalQuality - one or more PMIs in the aggregation group indicate Loss of Signal Quality
lossOfLink - one or more PMIs in the aggregation group indicate Loss of Link
dataInitFailure - data initialization failure
configInitFailure - configuration initialization failure
noPeerPmiPresent - one or more PMIs in the aggregation group indicate no peer PMI present
lossOfPMASyncWord - one or more PMIs in the aggregation group indicate Loss of PMA Synchronization word
snrMarginViolation - one or more PMIs in the aggregation group indicate SNR Margin Violation
loopAttenuationViolation - one or more PMIs in the aggregation group indicate Loop Attenuation Violation

Specify a similar object for PMA/PMD: aPMICurrentStatus.

Proposed Response Response Status Z

WITHDRAWN

P802.3ah Draft 2.1 Comments

Cl 30 SC 30.5.1.1.16 P44 L33 # 121

Beck, Michael Alcatel Bell nv

Comment Type T Comment Status D

Entries 1-9 seem to be adapted from the IETF MIB for VDSL (draft-ietf-adslmib-vdsl-12.txt). The descriptions in Clause 30 are insufficient to understand how the value of the attribute should be set. Suggest to (a) better describe the entries, in accordance with the IETF MIB for VDSL, or (b) replace them by entries that correspond to the states in Figure 62-4.

Note that conditions "configInitFailure" and "protocolInitFailure" should never occur in 10PASS-TS systems; they are therefore not present in the list proposed by the suggested remedy.

SuggestedRemedy

Remedy (a):
 Replace entries 1-9 with:
 -noDefect: There are no defects on the line
 -lossOfFraming: 10PASS-TS failure due to not receiving a valid frame
 -lossOfSignal: 10PASS-TS failure due to not receiving signal
 -lossOfPower: 10PASS-TS failure due to loss of power
 -lossOfSignalQuality: Loss of Signal Quality is declared when the Noise Margin falls below the Minimum Noise Margin, or the bit error ratio exceeds 10⁻⁷
 -lossOfLink: 10PASS-TS failure due to inability to link with peer 10PASS-TS PHY. Set whenever the transceiver is in the WARM_START state.
 -dataInitFailure: 10PASS-TS failure during initialization due to bit errors corrupting startup exchange data
 -noPeerVtuPresent: 10PASS-TS failure during initialization due to no activation sequence detected from peer 10PASS-TS PHY

Remedy (b):
 Replace entries 1-9 with:
 -powerOff: initial state, intended for service installation and modification
 -initializing: link activation (cold start, warm start) in progress
 -steadyStateTransmission: link activation process is completed
 -lossOfSync: transmission frame synchronization loss has occurred
 -powerDown: state achieved after guided power removal, power failure, or QUIET deactivation

Proposed Response Response Status Z
 WITHDRAWN.

Cl 30 SC 30.5.1.1.16 P44 L35 # 432

Tom Mathey Independent

Comment Type E Comment Status R

Missing text associated with lossOfSignal.

SuggestedRemedy

Add text to line as "lossOfSignal loss Of Signal"

Proposed Response Response Status C

REJECT.

Will incorporate this change as an editorial correction to the Sponsor draft.

Cl 30 SC 30.5.1.1.16 P44 L35 # 307

Beili, Edward Actelis Networks

Comment Type E Comment Status R

The word "signal" is missed in the description of LossOfSignal.

SuggestedRemedy

Describe it as "loss of signal".

Proposed Response Response Status C

REJECT.

Will incorporate this change as an editorial correction to the Sponsor draft.

Cl 30 SC 30.5.1.1.16 P44 L41 # 308

Beili, Edward Actelis Networks

Comment Type T Comment Status A

Term VTU is used in "noPeerVtuPresent" value of aPHYCurrentStatus. This is a VDSL only specific term defined in ITU-T G.991.3 as "VDSL Transceiver Unit" yet it is applied to 2BASE-TL Phy's as well. Note that SHDSL spec (G.991.2) has a similar term STU - "SHDSL Transceiver Unit".

SuggestedRemedy

Replace VTU with XTU (defined in ITU-T G.995.1 as "xDSL Transceiver Unit"). Add term XTU to the abbreviations.
 Alternatively rename "noPeerVtuPresent" to "noPeerPmdPresent" or "noPeerPmiPresent" to make it sound more IEEE-ish.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Will rename "noPeerVtuPresent" to be "noPeerPMIPresent".

P802.3ah Draft 2.1 Comments

Cl 30 SC 30.5.1.1.16 P44 L48 # 120
 Beck, Michael Alcatel Bell nv
 Comment Type E Comment Status A
 Behaviour specification of aPhyCurrentStatus references non-existing subclause 62.3.4.5.1.
 SuggestedRemedy
 For 10PASS-TS, the text should reference the "Link state and timing diagram" in 62.3.4.8.
 Proposed Response Response Status C
 ACCEPT.

Cl 30 SC 30.5.1.1.17 P45 L35 # 310
 Beili, Edward Actelis Networks
 Comment Type T Comment Status A
 The SNR value is in dB/0.25, which is less than current accuracy in SNR measurement by the PMD.
 Note also that corresponding Clause 45 register is already in dB (see Table 45-12, page 76).
 SuggestedRemedy
 List SNR value in dB.
 Proposed Response Response Status C
 ACCEPT.

Cl 30 SC 30.5.1.1.18 P45 L15 # 412
 kimpe, marc adtran
 Comment Type T Comment Status D
 A 2BASE-TL PHY can also operate using settings that do not constitute a profile. In order to avoid potential confusion, the aProfileSelect register should have a setting that says: no profile selected.
 SuggestedRemedy
 Add the following sentence at the end of the current behaviour text.
 "A value of zero means that the 2BASE-TL operation is defined via the clause 45 register settings (table 45.28 & 45.29) rather than a specific profile."
 Proposed Response Response Status Z
 WITHDRAWN

Cl 30 SC 30.5.1.1.2 P41 L4 # 548
 Dawe, Piers Agilent
 Comment Type E Comment Status R
 10Km
 SuggestedRemedy
 10 km (or 20 km), 5 occurrences. Also in Annex 30B.
 Proposed Response Response Status C
 REJECT.

Will incorporate this change as an editorial correction to the Sponsor draft.

Cl 30 SC 30.5.1.1.2 P55 L24 # 99036
 Thompson, Geoff Nortel
 Comment Type TR Comment Status R D2.0 #975
 Defines ends of an asymmetrical network rather than peer.
 SuggestedRemedy
 Move asymmetrical proposals to a new and separate document that can thoroughly, explicitly and unambiguously embrace the concept of Ethernet Services over asymmetrical infrastructure.
 Proposed Response Response Status U
 REJECT.
 See comments #952, #837 & #1167.

For further information regarding document restructuring, see the file:

http://www.ieee802.org/3/efm/public/sep03/frazier_1_0903.pdf

Cl 30 SC 30.5.1.1.20 P45 L33 # 123
 Beck, Michael Alcatel Bell nv
 Comment Type T Comment Status D
 Values greater than 100 should not be allowed for the attribute aPayloadRateProfileUpstream.
 Values of 200 and 140 should be allowed for the attribute aPayloadRateProfileDownstream.
 SuggestedRemedy
 Swap syntax descriptions of aPayloadRateProfileUpstream and aPayloadRateProfileDownstream, to make values consistent with those defined in Annex 62A.
 Proposed Response Response Status Z
 WITHDRAWN.

P802.3ah Draft 2.1 Comments

Cl 30 SC 30.5.1.1.20 P45 L 33 # 552
 Dawe, Piers Agilent
 Comment Type E Comment Status R
 100 000Kbit/s
 SuggestedRemedy
 100 000 kb/s and similarly , here and in 30.5.1.1.21
 Proposed Response Response Status C
 REJECT.
 Will incorporate this change as an editorial correction to the Sponsor draft.

Cl 30 SC 30.5.1.1.25 P52 L 46 # 313
 Beili, Edward Actelis Networks
 Comment Type TR Comment Status A
 The behavior description of aPAFAdminState is not detailed enough.
 SuggestedRemedy
 Replace with the following text:
 "Administrative (desired) state of the PAF.
 When 'disabled', PMI Aggregation will not be performed by the PCS.
 When 'enabled', PAF will be performed by the PCS when the link is Up, even on a single
 PMD, if PAF is supported.
 PCS ports incapable of supporting PAF shall return a value of 'disabled'. Attempts to
 'enable' such port shall be ignored.
 Changing PAFAdminState is a traffic disruptive operation and as such shall be done when
 the link is Down. Attempts to change this object shall be ignored if the link is Up or
 Initializing.
 If a Clause 45 MDIO Interface to the PCS is present, then this attribute will map to the PAF
 enable bit in the 10P/2B capability register"
 Proposed Response Response Status C
 ACCEPT.

Cl 30 SC 30.5.1.1.26 P47 L 20 # 433
 Tom Mathey Independent
 Comment Type T Comment Status A
 The text "PMI[1]" for aLocalPMIAvailable is out of sync with Clause 61. Clause 61 in all of
 its figures shows the count sequence as "0 to 31" vs "1 to 32", thus the first PMI is [0]
 SuggestedRemedy
 Change index from "PMI[1]" to "PMI[0]".
 Also applies to aLocalPMIAggregate, aRemotePMIAvailable, and aRemotePMIAggregate.
 Proposed Response Response Status C
 ACCEPT.

Cl 30 SC 30.5.1.1.4 P42 L 2 # 323
 Beili, Edward Actelis Networks
 Comment Type T Comment Status A
 The aMediaAvailable values are not detailed enough with respect to 2B/10P Phy's.
 SuggestedRemedy
 Add description for Unknown value (2B/10P Initializing).
 Add ReadyForHandshake or Ready status - at least one PMI is available and is ready for
 handshake.
 Detail that Available for 2B/10P is at least one PMI is available and Up.
 Proposed Response Response Status C
 ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 30 SC 30.5.1.1.4 P43 L1 # 430
 Tom Mathey Independent

Comment Type T Comment Status A

Text only mentions what to do with the enumeration "available" when loop agg is available, enabled, and operational.

The text needs to also include the conditions of:

1. loop agg available but not enabled
2. loop agg is not available.

SuggestedRemedy

Add text about loop agg not available
 Add text about loop agg available but not enabled.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

The term "aggregation group" on page 43, line 2 is probably what is confusing. "Available" does not really have anything to do with aggregation, but instead means that a complete PHY (PCS-PMA-PMD) is operationally linked.

Change the sentence to read:

...the enumeration 'available' maps to the condition where at the PCS at least one PMI is operationally linked, the enumeration 'not available' maps to the condition where the PCS is not operationally linked.

Cl 30 SC Table 30-1b P42 L22 # 99037
 James, David JGG

Comment Type TR Comment Status A D2.0 #417

Table should not have a clear bottom row; that looks funny.
 In some cases, this is due to starting with a buggy IEEE table format.

SuggestedRemedy

Change to get bottom-of-row "very thin" line, here and throughout.

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

It is not clear what the correct style is here since the existing published base standard IEEE Std 802.3-2002 on page 91 Table 23-4 uses this format. Will confirm with IEEE staff editor what the correct style to be used here is.

Cl 30B SC 30B.2 P147 L27 # 456
 Tom Mathey Independent

Comment Type T Comment Status R

Clause 61 has a rate control.

SuggestedRemedy

Add text for EFM, Cu, 10P/2B.

Proposed Response Response Status C

REJECT.

Clause 61 rate control is performed by the MAC being placed in Half-duplex mode and the PHY asserting CRS. This mode is therefore not related to the aRateControlConfig attribute which controls the Clause 4 MAC enforced rate control only.

Note also that the FEC rate control option was also removed from Clause 4 in D2.1 therefore this enumeration should now be removed from IEEE P802.3ah as there is now no longer any change needed to it.

Cl 45 SC P72 L10 # 444
 Tom Mathey Independent

Comment Type E Comment Status R c

Missing period at end of sentence.
 Also p73 line 23.
 Also p73 line 54.

SuggestedRemedy

Add.

Proposed Response Response Status C

REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC P83 L17 # 99049
 James, David JGG

Comment Type TR Comment Status R oD2.0 #440

The column title conflicts with the enumerated value name.

SuggestedRemedy

In rows after title, change:
 R/W ==> RW
 This is also consistent with enumerated value names of all caps.

Proposed Response Response Status U

REJECT.

R/W has been inherited from C22 and 802.3ae-2002 C45.

P802.3ah Draft 2.1 Comments

Cl 45 SC P92 L47 # 452
 Tom Mathey Independent
 Comment Type E Comment Status R c
 Subclause title refers to 3.x.12, s/b to 3.x.11,
 SuggestedRemedy
 Change.
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC 39 P71 L39 # 443
 Tom Mathey Independent
 Comment Type T Comment Status R c
 Since the PMA type is uniquely selected per (min-numbered) Table 45-5 per previous comment, there is no need to identify the port type in Table 45-6.
 SuggestedRemedy
 Line up is link up. Remove all reference to port type. The alpha-beta interface provides no unique signal for link up per port type.
 Proposed Response Response Status C
 REJECT.
 61.2.3.2.1 a/b Data Flow: reference G.993.1 section 7.1.1 provides a signal to the PCS as to which port type is active.

Cl 45 SC 45 P63 L1 # 435
 Tom Mathey Independent
 Comment Type T Comment Status R o
 The change to Clause 30.5.1.1.12 for aPCSCodingViolation has an inherent fault. The proposed text for aPCSCodingViolation will count as coding violations:
 1. errors received from the lower layer,
 2. PCS CRC errors, and
 3. will not count the per link coding violations errors when loop agg discards the frame (due to a coding violation) and sends up a garbage frame.
 SuggestedRemedy
 Keep the clause 45 specific coding violation counter, with proper Clause 30 attributes for per wire pair counts. Include case for when loop agg is not present.
 Proposed Response Response Status C
 REJECT.
 See response to Comment # 30001

Cl 45 SC 45 P63 L1 # 434
 Tom Mathey Independent
 Comment Type T Comment Status R c
 Resolution of D2.0 comment #1237 (page 237 in final comments) was that bits for PCS link status were to be added to transmit path for local device and to receive path for link partner. This commenter can not find such assignments. They seem to be completely missing.
 SuggestedRemedy
 Add ability to transport local device PCS link status to link partner on transmit path.
 Add ability to transport link partner PCS link status to local device on receive path.

Proposed Response Response Status C
 REJECT.
 45.2.3.31 in D2.1: "10P/2B TPS-TC indications register" contains the local and remote information about PCS state. (PCS out of sync and PCS freewheeling)
 Clause 61 provides the mechanism for sending the above information across the a/b interface and across the link. To express any other remote information in Clause 45, Clauses 61, 62 and 63 would need modification to provide transport.

Cl 45 SC 45 P67 L15 # 542
 Cravens, George Mindspeed
 Comment Type TR Comment Status D o
 Register address assignments should be available for working group review. Having the address assignments reviewed for the first time at sponsor ballot is unacceptable, as the change is substantial.
 SuggestedRemedy
 Number the register addresses.
 Proposed Response Response Status Z
 WITHDRAWN.
 The TF has previously agreed to assign register addresses in the initial Sponsor Ballot draft.

P802.3ah Draft 2.1 Comments

Cl 45 SC 45 P 80 L 4 # 99050

Grow, Robert Intel

Comment Type TR Comment Status A oD2.0 #620

The Working Group chair considers the assignment of registers as substantive, and will require WG recirculation prior to progressing the draft to Sponsor Ballot.

SuggestedRemedy

Assign the numbers before the "last" recirculation.

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

Include register assignments in the initial Sponsor Ballot draft.

The WG Chair agrees with the response, but chooses not to sign off at this time so that the comment may serve as a reminder to the editor to perform this task.

Cl 45 SC 45 P 80 L 8 # 99051

Thaler, Pat Agilent

Comment Type TR Comment Status R oD2.0 #1256

We didn't withhold register addresses on the registers in the initial clause 45. It seems pointless to do so now since, if we are consistent with the rest of the clause, the registers will be numbered in order as they appear in the table and the order of the subclauses will be the same as the order in the table. To do otherwise would be unfriendly to the reader. Unless the plan is to scramble the registers in the table and their corresponding subclauses before sponsor ballot, one can therefore determine the register addresses by looking at the order in the table.

We have made mistakes in register numbering before and we need to have the numbers inserted so they can be checked and rechecked.

SuggestedRemedy

Assign the addresses.

Proposed Response Response Status U

REJECT.

See the response to comment #620.

These register addresses will be assigned in the initial Sponsor Ballot draft.

Cl 45 SC 45.2 P 64 L 27 # 19

David, James JGG

Comment Type E Comment Status R o

Excessive capitalization

SuggestedRemedy

MDIO Interface Registers ==> MDIO interface registers

...

Only capitalize first word of heading/sentence or proper nouns.

Proposed Response Response Status C

REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC 45.2 P 64 L 33 # 436

Tom Mathey Independent

Comment Type T Comment Status R ommds

With just 2 projects using Clause 45, 11 out of the 32 sets or 34% for MMD addresses have been used. MMD 7 for the Link Partner PMA/PMD uses just 17 registers out of the 32,768 available or 0.00052%. This balance between use of MMD addresses and MMD registers is not good.

SuggestedRemedy

Move registers used by MMD 7 into the PMA register set. This should be rather easy to do.

Proposed Response Response Status C

REJECT.

Refer to comment 485.

P802.3ah Draft 2.1 Comments

CI 45 SC 45.2 P65 L 22 # 485

Booth, Brad Intel

Comment Type TR Comment Status R ommds

In comment #569 of D2.0, I suggested merging the link partner and tone table MMDs into the PMA/PMD MMD. I decided to use this comment to supercede that one. I'm willing to let the tone table be a separate MMD, but I'd prefer that we follow precedence and have the local device and link partner PMA/PMD registers in one MMD, especially considering there are some link partner registers in the PMA/PMD MMD.

SuggestedRemedy

Merge 45.2.7 into 45.2.1. Precedence was local device register followed by link partner register, but considering the number of registers, this could be done as local device registers followed by link partner registers.

Proposed Response Response Status C

REJECT.

The TF has previously agreed to the two new MMDs. Since this change is organizational, not technical, the changes could be made after the initial sponsor ballot.

Vote in OAM STF:

In favor of rejecting the comment: 5
Opposed to rejecting the comment: 0

Merge 45.2.7 into 45.2.1:

Add the remote copy as the next register after the local copy.

This has two advantages: 1) the register tables and descriptions will make more sense if they are next to each other. 2) The MMD can grow to add more registers in the future (local and remote) without changing having to skip from large blocks of local and remote registers.

CI 45 SC 45.2 P66 L 1 # 437

Tom Mathey Independent

Comment Type E Comment Status R c

Text references a MMD 13, which does not exist

SuggestedRemedy

Replace with intended reference.

Proposed Response Response Status C

REJECT.

should be 29.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

CI 45 SC 45.2 P66 L 4 # 269

Horvat, Michael Infineon Technologies

Comment Type E Comment Status R c

Meaning of sentence beginning with 'When read as a one ...' not clear.

SuggestedRemedy

Clarify meaning of sentence. E.g. shorter sentences

Proposed Response Response Status C

REJECT.

How about:

"Bits read as a one in this register indicate which MMDs are instantiated the same package as the MMD being accessed."

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

CI 45 SC 45.2 P66 L 6 # 171

Horvat, Michael Infineon Technologies

Comment Type T Comment Status A c

Bit 0 is not unique.

SuggestedRemedy

Change to bit 5.0

Proposed Response Response Status C

ACCEPT.

See also 437

CI 45 SC 45.2 P66 L 7 # 172

Horvat, Michael Infineon Technologies

Comment Type T Comment Status A c

Bit 13 not unique

SuggestedRemedy

Change to bit 6.13

Proposed Response Response Status C

ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 45 SC 45.2 P 66 L 8 # 173
 Horvat, Michael Infineon Technologies
 Comment Type T Comment Status A c
 MMD#13 not defined
 SuggestedRemedy
 Change MMD#13 to register #13 (see clause 22.2.4)
 Proposed Response Response Status C
 ACCEPT.
 should be "MMD #29"
 see also 437

Cl 45 SC 45.2 P 80 L 28 # 99052
 Booth, Brad Intel
 Comment Type TR Comment Status R oD2.0 #569
 The 10PASS-TS and R-PMA/PMD are not separately manageable devices, but are instead part of the PMA/PMD manageable devices.
 SuggestedRemedy
 Roll the 10PASS-T tone table and R-PMA/PMD registers into the PMA/PMD section of the clause. Hint: put the tone table after the R-PMA/PMD. Delete the edit on pg 80, line 31. Move edit on pg 80, line 36 to be a note for Table 45-2. Delete edits from Table 45-1. Add R-PMA/PMD registers to Table 45-2 starting at 1.52. Add tone table registers to Table 45-2 starting at 1.64. Renumber 45.2.99 to be 45.2.1.51. Renumber 45.2.98 to be 45.2.1.52. Add reserved bits to Table 45-2 in the gaps.
 Proposed Response Response Status Z
 WITHDRAWN.
 REJECT.
 Vote in the OAM STF Meeting:
 Reject: 6
 Opposed: 0
 Abstain: 2
 Even though the tone table and R-PMA/PMD are not separately manageable, placing them in their own MMDs makes a lot of sense.
 For the R-PMA/PMD registers, this allows the register addresses for the remote to match with those in the local. Also, since the parameters being accessed actually _do_ exist in a separately manageable device, use of a separate MMD is appropriate. See also the response to comment 1227.
 The tone table is a huge block of registers that may actually grow in future versions of the standard as MCM technology improves. Placing the tone table into it's own MMD gives it room. Further, placing the tone table in the middle of the PMA/PMD registers consumes a large block, after which any future PMA/PMD registers would need to reside. Growing the tone table may then involve splitting it into two MMDs anyway. Also, keeping this unique functionality in it's own MMD makes more sense than mixing it with registers for generic functionality. With this in mind, it seems to make more sense to give the tone table its own MMD.

P802.3ah Draft 2.1 Comments

CI 45 SC 45.2 P80 L34 # 99053

Thaler, Pat Agilent

Comment Type TR Comment Status A oD2.0 #1227

R-PMA/PMD is a confusing name. This is especially true since 10GBASE-R is a name of a 10 Gig PHY so it looks like a name for the PMA/PMD used with that PHY family.

Also far too many references are made to this new concept before it is explained what a remote PMA/PMD is.

SuggestedRemedy

Change the name to something else such as Remote-PMA/PMD

Add a figure and explanation of the concept to 45.1 or 45.2.

Proposed Response Response Status C

ACCEPT.

R-PMA/PMD becomes Link Partner PMA/PMD.

The individual MMDs are not described specifically in 45.2 Rather than explain the Link Partner PMA/PMD twice, add a cross ref in 45.2 to the explanation in 45.2.99.

Add a figure to 45.2.99. The figure depicts the MMD stack as in Figure 45-1 with the remote MMD stack next to it. Show that the Link Partner PMA/PMD MMD sits parallel to the PMA/PMD MMD.

CI 45 SC 45.2.1 P69 L1 # 262

Horvat, Michael Infineon Technologies

Comment Type E Comment Status R c

"Insert the following new registers, descriptions and tables after 45.2.1.10:" does not fit here

SuggestedRemedy

remove or move to correct position in text

Proposed Response Response Status C

REJECT.

These are editing instructions and appear throughout the clause.

CI 45 SC 45.2.1 P81 L27 # 99054

Thaler, Pat Agilent

Comment Type TR Comment Status A oD2.0 #1257

This replaces a row covering 32 752 registers with rows for less than 25 registers. What happened to the rest of the registers?

This comment also applies to 45.2.3 page 104 ine 5.

SuggestedRemedy

Add a row to the table for the reserved registers.

Proposed Response Response Status C

ACCEPT.

CI 45 SC 45.2.1 P81 L37 # 99055

Booth, Brad Intel

Comment Type TR Comment Status R oD2.0 #572

Number the registers.

SuggestedRemedy

Numbering for the registers should start at 1.32 and increment from there. This will not overlap on the 10G register space that goes to 1.15, plus permit other 10G registers to fit in more smoothly if required.

Proposed Response Response Status U

REJECT.

See response to comment 620

CI 45 SC 45.2.1.1 P69 L47 # 438

Tom Mathey Independent

Comment Type E Comment Status R c

Text uses 5 bits for a 4 bit value.

SuggestedRemedy

Replace 5 bit value "00001" with 4 bit value "0001"
Also on p66, line 45.

Proposed Response Response Status C

REJECT.

Paragraph is going away.

page 66, line 45 seems correct.

See comment #496

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

P802.3ah Draft 2.1 Comments

CI 45 SC 45.2.1.1 P69 L5 # 487
 Booth, Brad Intel
 Comment Type TR Comment Status A o
 Incorrect edit instructions or edit markers in Tables 45-4 and 45-5.
 SuggestedRemedy
 Change to read:
 Change Table 45-3 to Table 45-4.
 Need to underline the inserted text in the table.
 Add edit instruction prior to 45.2.1.2.1 that states:
 Change Table 45-4 to be Table 45-5.
 For D2.1 Table 45-5, change to read:
 Change Table 45-5 to Table 45-6.
 Need to underline the inserted test in the table.
 Change "Delete Table 45-6." instruction to read "Delete Table 45-6."
 Proposed Response Response Status C
 ACCEPT.

CI 45 SC 45.2.1.1 P69 L5 # 263
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status A c
 wrong table number
 SuggestedRemedy
 replace "45-4" with "45-3"
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 see 487

CI 45 SC 45.2.1.1.3 P69 L46 # 486
 Booth, Brad Intel
 Comment Type E Comment Status A o
 The paragraph is unnecessary and confusing relative to existing text. Current text in 802.3ae sufficiently explains the use of these bits.
 SuggestedRemedy
 Remove the paragraph.
 Proposed Response Response Status C
 ACCEPT.

CI 45 SC 45.2.1.11 P71 L37 # 319
 Beili, Edward Actelis Networks
 Comment Type TR Comment Status A c
 Before starting a Discovery operation on a particular PMA/PMD it would be nice if one could determine if there's a handshake capable partner on the other end instead of just trying to read/write something and timing out after 255 sec. Need a way to differentiate between a Cut-line (Down) and Down-but-detecting-remote-handshake-tones (Ready).
 SuggestedRemedy
 Add another bit to PMA/PMD link status in Table 45-6. Explanation that "Down" value means LOS (no link partner). Add "Ready" value, meaning the link is down but handshake capable link partner exists (detecting remote handshake tones).
 Add another bit to Discovery operation register in table 45-7. Add a value of "Not Ready" meaning that there's no link partner (cut-line), or link is Up or Initializing. Change explanation in 45.2.1.12.1 accordingly.
 Add "Ready" value in 30.5.1.1.4 aMediaAvailable with explanation that one or more 2B/10P PMIs are ready for Handshake.
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Clause 30 modification pending resolution of copper handling in Clause 30.

CI 45 SC 45.2.1.11.1 P71 L47 # 175
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R c
 Following sentence "After the PMA/PMD is operationally linked to the remote PHY, the PHY shall set these bits to indicate the PMA/PMD mode that has achieved link." makes not sense.
 SuggestedRemedy
 Change last part of above sentence to "The PMA/PMD is UP".
 Proposed Response Response Status C
 REJECT.

Change to read:
 "After the PMA/PMD is linked to the remote PHY, the PHY shall set these bits to indicate the PMA/PMD port type that is linked."
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

P802.3ah Draft 2.1 Comments

Cl 45 SC 45.2.1.12 P72 L1 # 264
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A c
 "unique register for each PCS" is wrong.

SuggestedRemedy

replace PCS by PMA, or (preferred !), remove complete paragraph (here and in several different places). An example for availability and connectivity for PMA/PMD and PCS registers can be given somewhere in the introduction. This applies also to similar paragraphs 45.2.1.13 (aggregation discovery code register), 45.2.1.14 (link partner PMI aggregate control register), 45.2.1.15 (currently remote aggregate data, to be changed)

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

Replace PCS with PMA as per the suggested remedy. There's no good place in the introduction for this matter. A more general description appears in clause 61.

Cl 45 SC 45.2.1.12.1 P84 L53 # 99056
 Thaler, Pat Agilent

Comment Type TR Comment Status A oD2.0 #1259
 A write that sets the PMD to an unadvertised type is meaning less and should not be allowed to succeed.

SuggestedRemedy

A PMD may ignore... should be
 "A PMD shall ignore"

Proposed Response Response Status C
 ACCEPT.

Cl 45 SC 45.2.1.12.2 P73 L11 # 445
 Tom Mathey Independent

Comment Type T Comment Status A c
 Specification should be very specific. Text "should" is not specific.

SuggestedRemedy

Change "should" to "shall".

Proposed Response Response Status C
 ACCEPT.

Cl 45 SC 45.2.1.12.2 P73 L11 # 176
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status R c
 In "If PAF is not supported, these bits should read as zero." the result is only 1 bit.

SuggestedRemedy

Change "these bits" to "this bit"

Proposed Response Response Status C
 REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC 45.2.1.13 P73 L25 # 265
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A otables
 wrong tables are referenced

SuggestedRemedy

replace "table 61-41" by "table 61-39" and "table 61-111" by "table 61-134"

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

The table references will be updated as part of comment 488

Cl 45 SC 45.2.1.14 P73 L54 # 446
 Tom Mathey Independent

Comment Type E Comment Status A otables
 Bad cross-reference. Reference to table 45-7 should be to 45-9, which will be renumbered.

SuggestedRemedy

Correct all table references.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

The table references will be updated as part of comment 488

P802.3ah Draft 2.1 Comments

CI 45 SC 45.2.1.14 P73 L54 # 266
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R otables
 wrong table is referenced
 SuggestedRemedy
 replace "table 45-7" by "table 45-9"
 Proposed Response Response Status C
 REJECT.
 The table references will be updated as part of comment 488

CI 45 SC 45.2.1.14 P73 L54 # 177
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status A otables
 Wrong cross ref
 SuggestedRemedy
 Table 45-9 is the right one
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 The table references will be updated as part of comment 488

CI 45 SC 45.2.1.14.1 P74 L19 # 267
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R c
 "The PMI_aggregate_register is not a Clause 45 object, but a variable of the PMI
 Aggregation PCS function on "-R" ports." is Copy-Paste-relict and does not apply here.
 SuggestedRemedy
 Remove.
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

CI 45 SC 45.2.1.14.2 P74 L54 # 178
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R c
 Operation is only defined by 1 bit.
 SuggestedRemedy
 Replace "these bits" with "this bit"
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

CI 45 SC 45.2.1.15 P75 L5 # 179
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status A otables
 Wrong cross ref
 SuggestedRemedy
 Table 45-10 is correct cross ref
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 The table references will be updated as part of comment 488

CI 45 SC 45.2.1.16 P75 L23 # 270
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R c
 Poor grammar
 SuggestedRemedy
 remove 'be'
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

P802.3ah Draft 2.1 Comments

Cl 45 SC 45.2.1.2 P69 L50 # 268
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status R c
 wrong register name: in 802.3ae the register name is "PMA/PMD status 1 register"

SuggestedRemedy

replace "PMA/PMD status register" by "PMA/PMD status 1 register"

Proposed Response Response Status C
 REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC 45.2.1.21.1 P77 L31 # 314
 Beili, Edward Actelis Networks

Comment Type T Comment Status R c

When PMD is unable to measure the Electrical Length the returned value is all ones (0xFFFF).
 It is also unclear if the 0 length can be returned, which wouldn't make a lot of sense.
 No upper bound is given, so no error checking can be done (e.g. 65km would surely be a mistake)

SuggestedRemedy

Specify that Electrical Length should be rounded up to the nearest integer, thus 1 meter is the minimum number.
 Specify that max Length is 1024 meters (10 bits)
 Specify that a value of 0 is returned when the PMD is unable to estimate the Electrical Length.

Proposed Response Response Status C
 REJECT.

Max length should be at least 7km, so allow 13 bits.
 Zero length is possible in certain test situations, so 0xFFFF should indicate unable to determine.

Cl 45 SC 45.2.1.22 P77 L39 # 271
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A c
 Chnage position of Subclause 45.2.1.22

SuggestedRemedy

Move it before Subclause 45.2.1.18

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

Remove 45.2.1.22 and place the text instead inside 45.2.1.29. This avoids the need for an awkward fourth level subclause that doesn't describe a register.

The subclause in question is actually a holdover from when the document contained both SCM and MCM registers, 45.2.1.22 was there to delineate the start of the MCM section.

Cl 45 SC 45.2.1.23 P89 L49 # 99057
 Thaler, Pat Agilent

Comment Type TR Comment Status A oD2.0 #1262
 This appears to be two registers not 1.

Comment also applies to 45.2.1.20, 45.2.1.26, 45.2.1.27 and other places.

SuggestedRemedy

Change the text so that one register address is one register in all of Clause 45. A 32-bit quantity is two registers.

Proposed Response Response Status C
 ACCEPT.

Cl 45 SC 45.2.1.23.1 P78 L14 # 272
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status R c
 Bit positions not correct

SuggestedRemedy

Change to bits 7:0

Proposed Response Response Status C
 REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

P802.3ah Draft 2.1 Comments

Cl 45 SC 45.2.1.23.1 P78 L 14 # 447
 Tom Mathey Independent
 Comment Type E Comment Status R c
 Text "Bits 15:7" needs to match register assignments
 SuggestedRemedy
 Change text from "Bits 15:7" to "Bits 7:0"
 Proposed Response Response Status C
 REJECT.
 See 272
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC 45.2.1.26 P79 L 13 # 20
 David, James JGG
 Comment Type E Comment Status R ommds
 Ambiguous usage of abbreviations.
 SuggestedRemedy
 1) Below the table, list meaning of O and R.
 2) Below the heading, change R/W ==> RW
 Proposed Response Response Status C
 REJECT.
 -O and -R are already explained in the clause overview text.
 1) Add definitions of O and R to the footnote chain
 2) Reject. 802.3ah clause 45 is following the convention started in 802.3-2002 clause 22 and 802.3ae clause 45
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC 45.2.1.27 P90 L 52 # 99058
 Thaler, Pat Agilent
 Comment Type TR Comment Status A oD2.0 #1263
 There is no reason to pack the values this way and we avoided doing this in creating the original register definitions. There are two instances here of a less than 16 bit value crossing registers.
 Also, note that there is a typo in PSD level as the register value begins 2.x rather than 1.x.
 SuggestedRemedy
 Redefine so that a whole value is in a single register unless the value requires more than 16 bits.
 Also fix the typo on PSD level.

Proposed Response Response Status C
 ACCEPT.

Cl 45 SC 45.2.1.32 P82 L 9 # 122
 Beck, Michael Alcatel Bell nv
 Comment Type E Comment Status R c
 In Table 45-26, signal names are identical to those in Table 45-27. This does not comply to the naming convention of T1.424. Specifically, the letter 'f' at the beginning of the name of a management primitive designates a condition at the 'far end'. To avoid confusion, drop the 'f' from the names of primitives that reflect a local condition.
 SuggestedRemedy
 Replace:
 Flpr -> lpr
 Fpo -> po
 Flos -> los
 Ffec-f -> fec-f
 Febe-f -> be-f
 Ffec-s -> fec-s
 Febe-f -> be-s
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

P802.3ah Draft 2.1 Comments

Cl 45 SC 45.2.1.33 P82 L 52 # 36

David, James JGG

Comment Type E Comment Status R

Bad table format; bottom line should be very thin.

SuggestedRemedy

Work with IEEE to fix the template and description of use.
(many others also...)

Proposed Response Response Status C

REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC 45.2.1.33 P82 L 52 # 21

David, James JGG

Comment Type E Comment Status R o

Bad table format; bottom line should be very thin.

SuggestedRemedy

Work with IEEE to fix the template and description of use.
(many others also...)

Proposed Response Response Status C

REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC 45.2.1.35 P84 L 30 # 413

kimpe, marc adtran

Comment Type T Comment Status D cshdsl

The current wording of 45.2.1.35 states that "The 2B PMD parameters registers set the transmission parameters for the PMD. When the link is initialized or reset, these parameters shall be used by the PHY transmitter". A 2-BASE-TL will rarely know a priori on which length and loop configuration it is operating, hence there is no way to know which data rate a given loop will support.

We propose to add extra bits to the PMD register that will allow a provider to select a priori one or more allowed profiles to run or to allow the PMD to pick the higher rate regardless of profile. If one or more profiles are selected, then the PHY is only allowed to come out in the profile with the highest data rate allowed by the loop otherwise the PHY will come out in the highest data rate that the loop will allow.

SuggestedRemedy

Extend the 2B PMD parameter register by 6 bits.

bit 1: a value of 1 means that the 2BASE-TL PHY picks the highest rate that the loop supports and overrides any profiles specified in bits 2 to 6. A value of 0 means that the 2 BASE-TL PHY is only allowed to come in data mode under one of the profile selected by bits 2 to 6. If multiple profiles are allowed, the PHY will come up with the profile allowing the highest data rate over the loop the PHY is connected to.

bit 2: a value of 1 means that profile 1 (annex A) or 6 (annex B) is allowed

bit 3: a value of 1 means that profile 2 (annex A) or 7 (annex B) is allowed

bit 4: a value of 1 means that profile 3 (annex A) or 8 (annex B) is allowed

bit 5: a value of 1 means that profile 4 (annex A) or 9 (annex B) is allowed

bit 6: a value of 1 means that profile 5 (annex A) or 10 (annex B) is allowed

Proposed Response Response Status Z

WITHDRAWN

P802.3ah Draft 2.1 Comments

CI 45 SC 45.2.1.35 P84 L40 # 321
 Beili, Edward Actelis Networks

Comment Type TR Comment Status D cshdsl

Currently defined 2B Data Rate register allows one to specify only fixed data rate administrative values. Current operating data rate of a particular PMD is unknown, especially if the Data Rate register is overwritten since last activation. In addition no meanings are given if one desires to use line probing.

SuggestedRemedy

Add Operating Data Rate status register per PMD, showing current Data Rate during normal operation or max data rate achieved during line probing. Replace 2B Data Rate register with 3-tuple: "2B Min Data Rate" and "2B Max Data Rate" registers (similar to 10P) and "2B Data Rate step", see 61.3.8.7.4 for possible values. Add a register specifying whether the PMD parameters specified in the 2B Control register are for line probing or activation. Alternatively add "Pre-Activate link partner parameters" register in Table 45-103.

Proposed Response Response Status Z
 WITHDRAWN.

Add a register that sets bits to indicate which profile is operating. For the rest of the comment, impliment 413 instead.

CI 45 SC 45.2.1.4 P70 L27 # 320
 Beili, Edward Actelis Networks

Comment Type E Comment Status R c

Typo: in 2BASE-TL capable register description "at" is used instead of "as".

SuggestedRemedy

Replace "at" with "as".

Proposed Response Response Status C
 REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

CI 45 SC 45.2.1.40 P85 L36 # 181
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status R c

'loss of sync seconds' not defined in 63.2.2.2

SuggestedRemedy

Use correct name 'LOSW'

Proposed Response Response Status C
 REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

CI 45 SC 45.2.1.6 P70 L45 # 439
 Tom Mathey Independent

Comment Type E Comment Status A c

There are 2 of Table 45-5

SuggestedRemedy

Renumber tables and correct all references.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

See 487

CI 45 SC 45.2.1.6 P71 L1 # 488
 Booth, Brad Intel

Comment Type TR Comment Status A otables

Duplicate table number. This clause really needs to be properly numbered and proper editing instructions should be inserted as there is nothing to indicate the correct numbering of tables and subclauses (and possibly figures).

SuggestedRemedy

I know I commented about this in D2.0, but considering that there is a duplicate table number in D2.1, I believe that this highlights the complexity of the problem. Considering that there will be an addition of subclauses and renumbering of tables and figures required, plus all the required editing instructions, I believe that it would be in the Task Force's best interest to address this issue now. Delaying until Sponsor ballot is likely to make Clause 45 the tall pole in the tent.

Proposed Response Response Status U
 ACCEPT IN PRINCIPLE.

The editor will repair the table numbers and editing instructions as appropriate.

CI 45 SC 45.2.1.6.1 P70 L50 # 174
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status R c

Term status register not appropriate. Speeds are defined in PMA/PMD speed ability register.

SuggestedRemedy

Replace status register with PMA/PMD speed ability register

Proposed Response Response Status C
 REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

P802.3ah Draft 2.1 Comments

CI 45 SC 45.2.1.6.2 P71 L 20 # 326

Beili, Edward Actelis Networks

Comment Type TR Comment Status D c

When link is forced down there's no way of telling the partner to shut up completely for some predefined time or immediately start with the handshake tones.

SuggestedRemedy

Add a new value in PMA/PMD link control and link control status to allow to force complete silence for a period of time specified in yet another register.

Proposed Response Response Status Z
WITHDRAWN.

CI 45 SC 45.2.2.16 P98 L 12 # 99059

Thaler, Pat Agilent

Comment Type TR Comment Status A oD2.0 #1264

Note that these section numbers are not right. The referenced sections are 45.2.2.14 and 45.2.2.15.

The primary issue is that these changes are not correct. WIS used a valid method to define counters that span two registers. There is no reason to change the existing text and the change creates the problem that the two reads may not return consistent values.

Also, these are not in scope for .3ah.

SuggestedRemedy

Delete the changes to 45.2.2

Proposed Response Response Status C
ACCEPT.

Fix the typo.

Please see response to comment 1260. Also, see 45.2 in Draft 2.0, page 80, line 46.

CI 45 SC 45.2.3 P104 L 14 # 99060

Booth, Brad Intel

Comment Type TR Comment Status R oD2.0 #574

Number the registers.

SuggestedRemedy

Start the numbering at 3.64.

Proposed Response Response Status U
REJECT.

See response to 620.

CI 45 SC 45.2.3 P81 L 23 # 99061

Thaler, Pat Agilent

Comment Type TR Comment Status A oD2.0 #1267

The existing registers need to be dealt with. Registers 3.0, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.14, and 3.15 are defined as general registers. Therefore, they will apply to 10PASS-T and 10PASS-T devices. Text must be added to the existing subclauses to clarify how they are applied to the new PCS's.

SuggestedRemedy

Provide the necessary information.

Proposed Response Response Status C
ACCEPT.

See 1084

CI 45 SC 45.2.3.1 P89 L 44 # 489

Booth, Brad Intel

Comment Type TR Comment Status A o

Incorrect editing instruction.

SuggestedRemedy

Replace is used a lot throughout the document. Editing instructions are: change, insert, and delete. This editing instruction is a cut and paste error as Table 45-4 applies to the PMA/PMD, not the PCS which is Table 45-30.

Proposed Response Response Status C
ACCEPT.

Editing instruction should read:

"Change Table 45-30 to read:"

CI 45 SC 45.2.3.1.4 P90 L 33 # 448

Tom Mathey Independent

Comment Type E Comment Status R c

Text uses 5 bits for a 4 bit value.

SuggestedRemedy

Replace 5 bit value "00001" with 4 bit value "0001"

Proposed Response Response Status C
REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

P802.3ah Draft 2.1 Comments

Cl 45 SC 45.2.3.17 P91 L33 # 182
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A c

Definition of register not clear. Does it count code violations from all aggregated links or just from one?

cross ref to TC_coding_error is missing

SuggestedRemedy

Add a note that clarifies the use (suggested: coding violation of all links belonging to PCS).

Ad missing xref

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Register went away.

Cl 45 SC 45.2.3.17 P91 L46 # 451
 Tom Mathey Independent

Comment Type T Comment Status A c

Coding violation now applies only to Clause 61.

SuggestedRemedy

Remove reference to clause 24 and clause 36. Keep the coding violation counter.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Remove the register.

Cl 45 SC 45.2.3.18 P92 L10 # 322
 Beili, Edward Actelis Networks

Comment Type TR Comment Status D c

How do two -O ports, connected to each other resolve which one is going to be -R? Can they even exchange G.HS messages? Currently no mechanism defined.

SuggestedRemedy

Make sure G.HS supports -O vs. -O handshake exchange.
 Add "Remote CO supported", "Remote CPE Supported" "Remote port sub-type select" registers in Table 45-204. Specify exact HS message format and exchange sequence (Both start with C-SILENCE tones? ...). Should we do Auto-negotiation? This stuff should probably be done before Discovery, as discovery would try to set-if-clear on the link partner which is a CO etc.

Proposed Response Response Status Z

WITHDRAWN

The way it works in this draft is the -R PMA/PMD must be specified in advance. The PMA/PMD can then signal to the PCS what port type is active over the a/b interface.

Cl 45 SC 45.2.3.18.4 P92 L44 # 274
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status R c

Naming of "PAF_supported" has changed

SuggestedRemedy

Change to "PAF_available"

Proposed Response Response Status C

REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC 45.2.3.18.5 P92 L47 # 275
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status R c

Wrong bit number in headline

SuggestedRemedy

Change bit 12 to bit 11

Proposed Response Response Status C

REJECT.

The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

P802.3ah Draft 2.1 Comments

Cl 45 SC 45.2.3.18.5 P92 L 51 # 183
 Horvat, Michael Infineon Technologies
 Comment Type T Comment Status A c
 Remote PAF support will be exchanged during discovery operation.
 No need to do PMI aggregation register access to find out, whether PAF is supported.
 SuggestedRemedy
 Replace PMI aggregation register access with remote discovery operation
 Proposed Response Response Status C
 ACCEPT.

Cl 45 SC 45.2.3.2.2 P90 L 46 # 449
 Tom Mathey Independent
 Comment Type T Comment Status A c
 The added text is confusing
 SuggestedRemedy
 Use same text as in 10 Gig. Refer to signals as "latching low"
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

Cl 45 SC 45.2.3.2.2 P90 L 47 # 273
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R c
 wrong cross ref
 SuggestedRemedy
 replace with 61.2.3.3.5
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC 45.2.3.2.1 P94 L 33 # 184
 Horvat, Michael Infineon Technologies
 Comment Type T Comment Status A c
 Definition of example ambiguous.
 SuggestedRemedy
 Add number of MII interfaces for this package (1 MII).
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 also p96, line 1

Cl 45 SC 45.2.3.2.2 P95 L 5 # 185
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R c
 Wrong cross ref
 SuggestedRemedy
 Replace by 61.2.3.4
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC 45.2.3.3.0 P97 L 47 # 276
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R c
 Information that this counter counts CRC errors from different links is missing
 SuggestedRemedy
 Add a note
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

P802.3ah Draft 2.1 Comments

Cl 45 SC 45.2.6 P100 L1 # 454

Tom Mathey Independent

Comment Type E Comment Status R ommds

The tone table size is excessive. The size can be reduced by use of indirect addresses. Assign a register to hold the index of the desired tone. Three registers can then hold the tone parameters. This reduces the table size from 12,290 to 4. With this reduced size, the tone table can then be moved into the 1.x PMA register set and a MMD address can be reclaimed

SuggestedRemedy

Reduce tone table size by use of indirect address. Then move tone table into 1.x PMA register set.

Proposed Response Response Status C

REJECT.

The TF has previously agreed to adding the new MMD. It is suggested that this issue be put off until the initial sponsor ballot if the commentor still thinks this is an issue.

This is how it could be done:

- 1) remove the tone table MMD
- 2) Add the "10P tone table entry registers" (Table 45-100 in D2.1) to MMD #1 after the "10P tone control action register". Copy relevant explanatory text from 45.2.6 to the appropriate place in MMD #1.
- 3) Add a new 16-bit register "10P tone select". The number written to this register corresponds the tone who's status can then be read in the "10P tone table entry registers".
- 4) Add text describing special behavior to the MMD access method that allows the STA to sequentially read the status of multiple tones with a minimum of MDIO operations:

When the last register in the "10P tone table entry registers" (1.x+3) is read, the value in the "10P tone select" register shall be incremented. The MDIO "post read increment address" pointer to the next MDIO address shall be set to x (ie, back to the start of the "10P tone table entry registers") See 45.3 in 802.3ae-2002.

This allows the user to write the start tone in the "10P tone select" register, and then start reading each tone's data using multiple "post-read increment address" MDIO operations. After the first tone's data is read, the next post-read increment address" MDIO operation will then automatically read the next tone in the table.

Cl 45 SC 45.2.7 P102 L1 # 455

Tom Mathey Independent

Comment Type T Comment Status R ommds

As there are only 17 registers in the Link Partner PMA register set, move to PMA 1.x. This will free up a MMD address.

SuggestedRemedy

Move Link Partner PMA register set to PMA 1.x.

Proposed Response Response Status C

REJECT.

See also 485

Cl 45 SC 45.2.7.1 P105 L26 # 277

Horvat, Michael Infineon Technologies

Comment Type T Comment Status A c

Table 45-103: 'activate' command obsolete (E.g. change of 2B line quality thresholds will be set with 'send' command by respective EOC message immediately)

SuggestedRemedy

remove 'activate' command in control register

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Add sentence in 45.2.7:

something like, send, get activate only applies when link is up. when link is down

Cl 45 SC 45.2.98 P99 L1 # 99062

Thaler, Pat Agilent

Comment Type TR Comment Status A oD2.0 #1265

This clause defines device 6 so it should be inserted after DTE XS. Such a change is also much less disruptive. Other clauses reference existing clause 45 subclasses so the suggested renumbering would ripple all through the standard.

SuggestedRemedy

This subclassue should be 45.2.6 Similarly 45.2.99 should be 45.2.7.

Proposed Response Response Status C

ACCEPT.

Make the appropriate changes to insert the MMDs in subclasses 45.2.6 and 45.2.7

P802.3ah Draft 2.1 Comments

Cl 45 SC 45.2.98 P99 L17 # 99063
 Thaler, Pat Agilent
 Comment Type TR Comment Status A oD2.0 #1266
 Need to say that the rest of the registers are reserved.
 SuggestedRemedy
 Add the statement.
 Proposed Response Response Status C
 ACCEPT.

Cl 45 SC Table 45-101 P103 L47 # 187
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R c
 Register name 'loss of sync seconds counter' not appropriate.
 SuggestedRemedy
 Change to 'LOSW' register
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC Table 45-10 P75 L8 # 180
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R c
 'remote aggregate data' is not 48 bits wide, but 32 bits.
 The real register name is 'link partner PMI aggregate data register'.
 SuggestedRemedy
 Correct bit width and naming of register.
 All references to this register have to be changed accordingly.
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC Table 45-101 P103 L28 # 186
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R omnds
 Clause 45 usually assigns address 0 to control register and address 1 to status register.
 SuggestedRemedy
 Assign address 7.0 to control register and address 7.1 to status register.
 Proposed Response Response Status C
 REJECT.
 To be fixed as part of editorial edits into D3.0.

Cl 45 SC Table 45-2 P66 L28 # 260
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R c
 m.5.15:6 is wrong
 SuggestedRemedy
 use m.5.15:8
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC Table 45-206 P94 L11 # 453
 Tom Mathey Independent
 Comment Type E Comment Status R c
 Table 45-206 is not in sync with Clause 61. In Clause 61, every figure starts its indexes from 0 to upper limit.
 SuggestedRemedy
 Revise table 45-206 to have index start from count 0.
 Same for Table 45-207.
 Any place else ??
 Proposed Response Response Status C
 REJECT.
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

P802.3ah Draft 2.1 Comments

Cl 45 SC Table 45-3 P67 L22 # 261
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status R c
 register names inconsistent
 SuggestedRemedy
 change "link partner aggregate data" to "link partner PMI aggregate data"
 Proposed Response REJECT. Response Status C
 The editor will make this change for D3.0 submitted for initial Sponsor Ballot.

Cl 45 SC Table 45-5 P71 L1 # 441
 Tom Mathey Independent
 Comment Type T Comment Status A c
 The (mis-numbered) table 45-5 uses text LT and NT, which have been eliminated per D2.0 comment #67 "Replace LT with the -O STA. Resolution does not state what to replace NT with.
 SuggestedRemedy
 Replace LT with -O STA and NT with (perhaps) -R STA.
 Proposed Response ACCEPT IN PRINCIPLE. Response Status C
 Use "-O" and "-R". The use of STA is innapropriate.

Cl 45 SC Table 45-5 P71 L10 # 442
 Tom Mathey Independent
 Comment Type T Comment Status A c
 Text for PMA type selection states "preferred". This is not a standards way of specification.
 SuggestedRemedy
 Provide a list, 8 bits, of PMA port type selection with one bit per PMA type.
 Provide a single bit to select between CO and CPE.
 Proposed Response ACCEPT IN PRINCIPLE. Response Status C
 "preferred" is the best word to express the behavior.
 Add descriptive text, something like:
 Value of 010 may be set in "-R" subtype PMA/PMD's that have both 2BASE-TL and 10PASS-TS capability set in the PMA/PMD speed ability register. The PMA/PMD type of the "-R" is set upon link initialization by the "-O".
 Values of 011 and 100 may set in "-O" subtype PMA/PMD's that have both 2BASE-TL and 10PASS-TS capability set in the PMA/PMD speed ability register. These values indicate whether the "-R" should be set 2BASE-TL or 10PASS-TS respectively. If the "-R" is not capable of the "preferred" mode, the "-R" may behave as 10PASS-TS or 2BASE-TL respectively.
 Create bits in the status register that indicate which subtypes the PMA/PMD supports. -O or -R
 Create bits in the control register that select which subtype the PMA/PMD should operate as.

Cl 45 SC Table 45-5 P71 L6 # 440
 Tom Mathey Independent
 Comment Type T Comment Status A c
 Resolution of comment D2.0 #291 defined PMA type selection as 8 bits. Present text maintains type selection as 3 bits.
 SuggestedRemedy
 Expand port type selection to 8 bits with a single bit assigned per (future) type.
 Proposed Response ACCEPT IN PRINCIPLE. Response Status C
 Expand to 8 bits, but maintain the bit packing to allow the most future flexibility. ie, don't encode as "one hot"
 repack contiguous with the reserved bits

P802.3ah Draft 2.1 Comments

Cl 45 SC Table 45-5 P91 L 13 # 450
 Tom Mathey Independent

Comment Type T Comment Status R c

Present text requires a PCS to be able to support both types of PMAs, specifically both CRCs. If a PCS is integrated with a specific PMA port type, with no capability for the other type, then the PCS must report via 3.4.1 that it can not support its chosen port type as it does not support the CRC.

SuggestedRemedy

Just as for the PMA, reserve 8 bits for support of port type. Use 2 bits to match the undesired quantity of unique CRCs.

Proposed Response Response Status C

REJECT.

Clause 61 defines a single PCS that mandates support for both Cu PMAs.

Cl 45B SC P549 L 06 # 484
 Booth, Brad Intel

Comment Type TR Comment Status A

The grouping of this annex with Clause 45 seems strange considering that Clause 45 makes absolutely no reference to Annex 45B, but Clause 22 does.

SuggestedRemedy

Renumber the annex to be Annex 22D. In Clause 22, change references to 45B to 22D.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

In addition, the following changes will be made:

PLAIN/front matter/p. 6/ln 10: Change "Annex 45B" to "Annex 22D", two places

PLAIN/22.2.4.3.11/p. 22/ln 9: Change "Annex 45B" to "Annex 22D"

PLAIN/22.2.4.3.12/p. 22/ln 31: Change "Annex 45B" to "Annex 22D"

Cl 45B SC 45B.1 P550 L 16 # 472
 Adam Healey Agere Systems

Comment Type T Comment Status R

What is the recommended behavior when the DEVAD value written for the Address Function is not the same as the DEVAD value write for the Read/Write function? The procedure states that the same value should be written in both cases, but there is no recommendation on how to handle this error condition. It is unclear why the DEVAD field needs to be interpreted for any function other than the Address function.

SuggestedRemedy

State that DEVAD field is ignored when Function is not equal to 00.

Proposed Response Response Status C

REJECT.

Clause 22.2.4.3.11 states: "The DEVAD field directs any accesses of Register 14 to the appropriate MMD as described in 45.2."

Hence, the DEVAD field must be set to the desired device address for the target MMD regardless of the setting of Function.

Cl 45B SC 45B.4 P549 L 01 # 409
 Dawe, Piers Agilent

Comment Type T Comment Status R

Maybe this annex is a good place to mention access to clause 22 registers through clause 45 interface - 45 sort of hints at it but needs clarification. Also could add text to 45.2 to clarify.

SuggestedRemedy

Per comment.

Proposed Response Response Status C

REJECT.

Currently, there is no mechanism for a Clause 45 MDIO to access the Clause 22 register space.

See comment #484, which rennumbers Annex 45B to Annex 22D. The renamed Annex 22D focuses on the mechanism to access Clause 45 MMD's via the Clause 22 interface.

Annex 45A describes how a Clause 45 MDIO and Clause 22 MDIO interfaces can coexist electrically.

In D2.1, the 'Clause 22 Extension' device address was added to Table 45-1. 45.2.8 explains the usage of this new device address.

P802.3ah Draft 2.1 Comments

Cl 45B SC 45B.4 P551 L 32 # 408

Dawe, Piers Agilent

Comment Type T Comment Status A

Need to mention that cl.22 and cl.45 voltage levels differ.

SuggestedRemedy

Could copy text about voltage level translators from 802.3ae.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

45B.4 bullet c) shown below:

"PHYs accessible via the Clause 22 access mechanism can coexist on the same bus with PHYs accessible via the Clause 45 access mechanism, even with identical PHY Address values due to the different ST (start of frame) encodings of the frame structures;"

will be changed to:

"PHYs accessible via the Clause 22 access mechanism can coexist on the same bus with PHYs accessible via the Clause 45 access mechanism, even with identical PHY Address values due to the different ST (start of frame) encodings of the frame structures (see 45A.3 and 45A.4, which discusses the need for protocol aware voltage translators for this type of coexistence);"

Cl 56 SC 56.1 P158 L 12 # 490

Booth, Brad Intel

Comment Type E Comment Status R

New sentence about 100BASE-LX10 makes no sense. Although it may be true that it fills a market gap, the sentence adds no relevant information.

SuggestedRemedy

Delete sentence.

Proposed Response Response Status C

REJECT.

At the time of EFM publication the argument can be made that 100BASE-LX10 fills a market gap since there are many 100BASE-FX over SMF fiber claims that exists. Nonetheless, the editor is not an authority on marketing so if the balloter has a convincing argument he is encouraged to presnet it at the TF.

Cl 56 SC 56.1 P158 L 17 # 491

Booth, Brad Intel

Comment Type E Comment Status R

Font size in Figure 56-1 for the LAN CSMA/CD layers is too large.

SuggestedRemedy

Decrease font size.

Proposed Response Response Status C

REJECT.

Some of these editorial changes will be done before the IEEE-SA ballot on draft 3.0

Cl 56 SC 56.1 P158 L 28 # 335

Dawe, Piers Agilent

Comment Type T Comment Status D

This diagram shows a common reconciliation sublayer across the speeds. It would appear that at least 100M (clause 22) and 1G (clause 35) are different.

SuggestedRemedy

Show horizontally separate reconciliation sublayers as appropriate, like fig 1-1.

Proposed Response Response Status Z

WITHDRAWN.

The RS sublayer is defined in a specific clause for each PMD. The diagram makes no claim of consistency between the PMDs, it simply conveys the OSI architecture.

P802.3ah Draft 2.1 Comments

Cl 56 SC 56.1 P158 L 49-54 # 62
 Shimon Muller Sun Microsystems, Inc

Comment Type TR Comment Status R

This paragraph strongly implies that half-duplex operation in the MAC is an absolute requirement for 10PASS-TS and 2BASE-TL. Also, it does not adequately address the new requirement for half-duplex operation in the MAC for EPONs.

SuggestedRemedy

Change the paragraph to read as follows:
 "An important characteristic of EFM is that only full duplex links are supported. The timing constraints of the CSMA/CD protocol make it impractical to build subscriber access networks of reasonable extent. To perform MAC-PCS rate matching for 10PASS-TS and 2BASE-TL, the MAC may be configured in the half duplex mode to enable the use of carrier sense by the PCS (Clause 61) to defer transmission by the MAC. Also, for P2MP network topologies the MAC must be configured in the half duplex mode in order to be able to enforce the required minimum inter-packet gap (IPG) on the medium. All the PHYs defined for EFM perform simultaneous transmission and reception of frames, allowing for full duplex communication at the MAC sublayer to be accomplished by the rapid exchange of frames."

Proposed Response REJECT. Response Status U

No change to be made on the Cu section. Clause 61 does not make a requirement on the MAC. It assumes half-duplex but does not preclude full duplex operation.

On P2MP: The duplex of P2MP was changed back to full duplex so there is no issue there.

Cl 56 SC 56.1 P158 L 51 # 492
 Booth, Brad Intel

Comment Type E Comment Status A

The second paragraph is a little confusing. There is no statement about what rate the MAC is operating.

SuggestedRemedy

Insert "100 Mb/s," before "half duplex mode".

Proposed Response ACCEPT. Response Status C

Cl 56 SC 56.1 P158 L 53 # 336
 Dawe, Piers Agilent

Comment Type T Comment Status A

Which PHYs are full duplex?

SuggestedRemedy

Insert '58, 59 and' before '61 through 63'.

Proposed Response ACCEPT IN PRINCIPLE. Response Status C

Cl 56 SC 56.1.2 P159 L 46-48 # 63
 Shimon Muller Sun Microsystems, Inc

Comment Type E Comment Status A
 Style.

SuggestedRemedy

Change the second sentence in this paragraph to read as follows:
 "The P2MP PHYs use the 1000BASE-X Physical Coding Sublayer (PCS), the Physical Medium Attachment (PMA) sublayer defined in Clause 65, and an optional FEC sublayer defined in Clause 65."

Proposed Response ACCEPT. Response Status C

Cl 56 SC 56.1.2 P169 L 44 # 99076
 Brand, Richard Nortel Networks

Comment Type TR Comment Status R D2.0 #835

Both this paragraph and Fig 56-2 above it are misleading in that they do not detail that P2MP is NOT a peer to peer relationship between the OLT and the ONU. Cl 2 clearly states peer to peer so cl 56 needs to point out the difference in this overview.

SuggestedRemedy

Add text to define that P2MP is an exception to the peer to peer relationship.

Proposed Response REJECT. Response Status C

P2MP as described in the draft does in fact provide a peer to peer relationship at the MAC Client interface, therefore it would be incorrect to define that it is an exception.

P802.3ah Draft 2.1 Comments

Cl 56 SC 56.1.3 P160 L26 # 338
 Dawe, Piers Agilent
Comment Type E Comment Status A
 100BASE-LX10 isn't called "extended" at present. Actually, it isn't called "laser" either.
SuggestedRemedy
 Delete those words, leaving "(long wavelength)". Delete all the other "laser"s in this and next paragraph. Consider deleting the "laser"s from third paragraph also.
Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

Cl 56 SC 56.1.3 P160 L34 # 339
 Dawe, Piers Agilent
Comment Type T Comment Status A
 At this point we also need to point out that 1000BASE-LX and 1000BASE-LX10 are interoperable.
SuggestedRemedy
 Add sentence "1000BASE-LX10 is interoperable with 1000BASE-LX on single-mode and multi-mode fiber, and offers greater reach than 1000BASE-LX on single-mode fiber."
Proposed Response Response Status C
 ACCEPT.

Cl 56 SC 56.1.3 P160 L41 # 340
 Dawe, Piers Agilent
Comment Type T Comment Status R
 There are interoperability possibilities between 1000BASE-PX20-U and 1000BASE-PX10-D.
SuggestedRemedy
 Add a sentence mentioning them. Add a reference to further detail in clause 60 if needed.
Proposed Response Response Status C
 REJECT.
 Specific ranges of interoperability could be mentioned in the optics clause, C60.

Cl 56 SC 56.1.3 P160 L48 # 493
 Booth, Brad Intel
Comment Type E Comment Status A
 Misspelling of signaling.
SuggestedRemedy
 Change signalling to signaling.
Proposed Response Response Status C
 ACCEPT.

Cl 56 SC 56.1.3 P162 L14 # 132
 Beck, Michael Alcatel Bell nv
Comment Type T Comment Status A
 Table 56-2 should show that OAM is optional for 2BASE-TL and 10PASS-TS, as specified in 61.1.4.1.4.
SuggestedRemedy
 Add an 'O' (Optional) in column '57 / OAM', in rows '2BASE-TL' and '10PASS-TS'. Move footnote 'b' up to the first occurrence of the symbol 'O'.
Proposed Response Response Status C
 ACCEPT.

Also, comment 189

Cl 56 SC 56.1.3 P162 L7 # 341
 Dawe, Piers Agilent
Comment Type T Comment Status D
 This table is very welcome. It needs to show the alternative RSs and PCS/PMAs to which some of these PMDs may be connected.
SuggestedRemedy
 Add further columns for clause 22, 24, 35 and 36. To make room, may have to split into separate electrical and optical tables. Also make mention in the text, which RS the electrical signaling systems use.
Proposed Response Response Status Z
 WITHDRAWN.

The table sufficiently conveys the information for each PMD

Cl 56 SC 56.1.3 P321 L50 # 193
 Horvat, Michael Infineon Technologies
Comment Type E Comment Status A › Clause 56 by EFMcu Editor
 Optional support of clause 57 OAM in clause 56 missing
SuggestedRemedy
 clause 56 shall be updated accordingly (table 56-2 page 162 OAM support for 2BASE-TL and 10PASS-TS)
Proposed Response Response Status C
 ACCEPT.
 See also comment #132.

P802.3ah Draft 2.1 Comments

Cl 56 SC 56.1.4 P162 L38 # 529

Brand, Richard Nortel Networks

Comment Type TR Comment Status D

I continue to maintain my previous position with a "reject" vote, by stating, delete "subscriber access networks to Ethernet" and replace with "point to point and emulated point to point draft IEEE 802.3 links." as per 57.1.5.1 or create new document specific to SP networks

SuggestedRemedy

Proposed Response Response Status Z

WITHDRAWN.
Please refer to previous comment resolution

Cl 56 SC 56.1.4 P171 L50 # 99077

Brand, Richard Nortel Networks

Comment Type TR Comment Status R D2.0 #840

Although one of the objectives of 802.3ah is to define OAM for subscriber access networks, the wording used here is not correct.

SuggestedRemedy

Change text (line 51) to delete "subscriber access networks to Ethernet" and replace with "point to point and emulated point to point to IEEE 802.3 links." as per 57.1.5.1 or create new document specific to SP networks

Proposed Response Response Status U

REJECT.

Refer to responses to 837 and 952.

For further information regarding document restructuring, see the file:

http://www.ieee802.org/3/efm/public/sep03/frazier_1_0903.pdf

Cl 56 SC Table 56-1 P161 L52 # 188

Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

Table footnote (d) contains wrong cross ref.

SuggestedRemedy

Replace Annex62B with Annex63B

Proposed Response Response Status C

ACCEPT.

Cl 56 SC Table 56-2 P163 L14 # 189

Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

Optional OAM support as defined in clause 57 for 2BASE-TL and 10PASS-TS (defined in clause 61.1.4.1.4) missing

SuggestedRemedy

Add optional support of OAM to 2BASE-TL and 10PASS-TS

Proposed Response Response Status C

ACCEPT.

Refer to comment 132

Cl 57 SC P L # 61

Braga, Aldobino UNH-IOL

Comment Type E Comment Status R

Reserved fields are not consistent. Some indicate what to do on TX and RX, some don't.

SuggestedRemedy

Personally I think "reserved" by itself is enough to indicate to the reader that the value should not be used (TX as 0, Ignored on RX).

But if it has to be spelled out, I would like to see all instances of the word "reserved" with respect to bits, fields, and code values to consistently say transmitted as 0, ignored on reception.

Proposed Response Response Status C

REJECT.

Will incorporate this change as an editorial correction to the Sponsor Ballot draft.

Cl 57 SC P L # 60

Braga, Aldobino UNH-IOL

Comment Type E Comment Status A

Comment 593 was accepted in the last review, but wasn't implemented in this draft.

SuggestedRemedy

Please clean up the Variable Containers/Descriptors copy and paste PICS error.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See D2.0 comment #593 for more information. The following changes will be made:

PLAIN/p.215 ln. 13 - Change "Descriptor" to "Container"

PLAIN/p.215 ln. 16 - Change "Descriptor" to "Container"

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Cl 57 SC P200 L17 # 99038

James, David JGG

Comment Type TR Comment Status A RAC D2.0 #468

Illegal and ill-advised OUI usage. All new identifier uses based on the OUI are required to use the EUI-64 unique identifier format. Relying on the owner of the OUI to properly administer Data/Pad values uniquely does not (in practice, speaking as an IEEE/RAC member) work.

SuggestedRemedy

Change illustration on right to include OUI plus 5-byte extension, forming an EUI-64 value.

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

See response to comment #1155.

Cl 57 SC 57 P174 L09 # 99039

Thompson, Geoff Nortel

Comment Type TR Comment Status A D2.0 #980

What set of documented requirements is being satisfied by OAM?
 The only justification that I can find is the vague "The OAM described in this clause provides data link layer mechanisms that complement applications that may reside in higher layers." (emphasis added).
 There is no reference to any particular application, set of applications, documented set of requirements for such applications or protocol/interface to any such thing as an "OAM client". There is no definition of an OAM Client or what standard defines the requirements, interfaces or interoperability parameters for such a client. If such a client is speculated for the future, then there is not even documentation of a commitment for such a project by a standards group.

SuggestedRemedy

Delete OAM for lack of a defined standards based interface customer set of requirements
 Or provide appropriate justification/references/information

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

Adequate justification has been provided as evidenced by the liaison from ITU-T SG 13 indicating their willingness to adopt the OAM client interface and endorsement of the functions provided by the OAM sublayer.

OAM STF will continue responding to liaison/communication statements to seek feedback on OAM. These will be sent to T1, MEF and 802.1.

Per the commenter's suggestion to provide appropriate justification, references and information, the following is provided:

The recent ITU-T liaison contains the following excerpts, which indicate their endorsement and intended use of OAM as currently defined and architected.

 Under "Requirements for Maintenance Entities" (Section 9):

A requirement is "ETY link connection OAM based on IEEE 802.3ah" (see P15, L7 or so).

So as to whether other organizations have reviewed it, find it useful, and will use it, I think that ITU making it a REQUIREMENT in their document should calm that fear.

 Under "General requirements for Ethernet OAM Functions " (Section 8):

Some requirements, but not the full set, and why these are satisfied by 802.3ah OAM include:

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- (#1) on demand and continuous connectivity checking (OAM Information TLVs and Variable Requests satisfy this)
 - (#3) defect notification (OAM critical link events and TLV-based link events satisfy this). They also list defect correction as a requirement, but we're not in the topology maintenance business.
 - (#4) customers don't detect own problems (event notification from CPE-CO satisfy this)
 - (#5) detecting the following anomalies: loss of connectivity, lost frames, errored frames (events or status for all of these) - also ask for topology problems, but thats not our business
 - (#6) Ethernet OAM on same path as Ethernet data (e.g. do in data flow, not preamble, like we're doing)
 - (#8) OAM functions simple and auto configuring (OAM discovery helps address this)
 - (#9) OAM optional (all management optional in 802.3)
 - (#10) backward compatible (e.g. frames not preamble)
 - (#14) connectivity checking not dependent on customer traffic (e.g. OAM running anyway)
- Note that they have other requirements not applicable to us (topology, layering, etc.), but we fit very well into these requirements.

 Finally, in "Required OAM functions", they list many that we help satisfy:

- continuous connectivity checking
 - loopback
 - discovery
 - performance monitoring
- And some that are out of our scope
- alarm suppression
 - path trace
 - survivability (protection switching)

But there are none that are within our scope that we do not perform. It doesn't seem like we're missing anything.

Cl 57	SC 57.1.1	P 166	L 06	# 506
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Thompson, Geoffrey Nortel Networks

Comment Type E **Comment Status A**

RE: D2.0 Comment 951
 Accepted remedy is not fully implemented.
 I find 9 instances of "remote loopback" that are not "OAM remote loopback".
 (I counted 13 instances in D2.0 vs. the 9 in D2.1)
 I find even more additional instances of "loopback" that are not "remote loopback".

Suggested Remedy

Make all instances of "loopback" or "remote loopback" be "OAM remote loopback" via the search and replace mechanism to complete implementation of the remedy.

Proposed Response **Response Status C**

ACCEPT IN PRINCIPLE.

All of the occurrences of "loopback" without the prefix "OAM remote" will be listed here, followed by the editor's proposed changes, if any:

(Note: this references the PLAIN version)

- 1) p.166, ln. 6 : "remote loopback" - This is the introductory section and "remote loopback" seems fine here.
- 2) p.166, ln. 34: "Remote Loopback" - This is copied verbatim from the TF objectives and seems fine.
- 3) p.166, ln. 35: "data link layer frame-level loopback mode." - This will be changed to "data link layer frame-level loopback mode, which is controlled remotely." It does not seem appropriate to include "OAM" here.
- 4) p.169, ln. 37: "Loopback Control OAMPDU" - This is the name of one of the OAMPDUs. The OAM STF did not discuss changing the name of PDU in Portonovo. No other occurrences of "Loopback Control OAMPDU" will be listed here.
- 5) p.172, ln. 51: "(LBF is an abbreviation for Loopback frame)." - This usage seems fine.
- 6) p.173, ln. 13 (Figure 57-3): "loopback frames" - This is a descriptive label distinguishing OAMPDUs, MAC client frames, and frames being looped back. This seems fine.
- 7) p.173, ln. 28 (Figure 57-3): "Passes loopback frames to Multiplexer" - This text describes one of the internal service interfaces. This seems fine.
- 8) p.175, ln. 41: "should not respond to loopback commands" - This will be changed to "should not respond to OAM remote loopback commands".
- 9) p.177, ln. 3: "OAM provides an optional data link layer frame-level loopback mode, which is controlled remotely." - This seems fine.
- 10) p.177, ln. 3: "Remote loopback" - This will be changed to "OAM remote loopback".

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- 11) p.177, In. 6: "after loopback frames have been sent to the remote DTE." - This seems fine. We don't want to imply that there are *special* frames sent only during loopback operation.
- 12) p.177, In. 7: - See #11.
- 13) p.177, In. 36: "remote loopback" - This will be changed to "OAM remote loopback".
- 14) p.177, In. 38: "Enable Remote Loopback" - This will be changed to Enable OAM Remote Loopback". Also, the complementary command, "Disable Remote Loopback" will be changed as well.
- 15) p.177, In. 45: "in loopback mode," - This will be changed to "OAM remote loopback mode,".
- 16) p.177, In. 45: "loopback command" - This will be changed to OAM remote loopback command." Other occurrences of loopback command will also be changed.
- 17) p.178, In. 4: "loopback mode" - This will be changed to "OAM remote loopback mode". 2x on this line.
- 18) p.178, In. 42: "Depending upon the remote DTE's implementation of loopback," - This will be changed to "Depending upon the remote DTE's implementation of OAM remote loopback,"
- 19) p.178, In. 46: "loopback frames" - This seems fine. Again, don't want to imply *special* OAM remote loopback frames here.
- 20) p.178, In. 48: "rate at which to send frames during loopback." - This will be changed to "rate at which to send frames during OAM remote loopback."
- 21) p.178, In. 51: "Loopback frames that are discarded" - This seems fine. See #19.
- 22) p.179, In. 47: "loopback frames from the Parser," - This seems fine. See #19.
- 23) p.179, In. 49: "loopback frames from the Parser," - This seems fine. See #19.
- 24) p.188, In. 43: "RX_LOOPBACK" - Name of a state. Seems fine. Other occurrences of RX_LOOPBACK are ignored.
- 25) p.189, In. 25: "received loopback frame is passed" - This seemed fine. See #19.
- 26) p.195, In. 4: "remote DTE's loopback state." - This will be changed to "remote DTE's OAM remote loopback state."
- 27) p.198, In. 39: "Loopback Support" - This will be changed to OAM Remote Loopback Support". Other occurrences will also be changed.
- 28) p.208, In. 18: "Remote Loopback" - This will be changed to "OAM Remote Loopback".

<i>Cl</i> 57	<i>SC</i> 57.1.4	<i>P</i> 167	<i>L</i> 16	# 528
Thompson, Geoffrey		Nortel Networks		

Comment Type TR *Comment Status* A

Layer diagram is incorrect and inconsistent with (for example) the layer diagram in Fig 60-1.
 The sublayer above OAM should be "LLC or other MAC Client"
 The OAM sub-layer is not at the top of the Data Link Layer.

Suggested Remedy

Proposed Response *Response Status* C

ACCEPT IN PRINCIPLE.

Figure 57-1 will be changed as follows:

Add sublayer above OAM, which reads:
 "LLC or other MAC client"

Dashed line showing top of Data Link Layer will now point above the 'LLC or other MAC client' sublayer.

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Cl 57 SC 57.2.10.3 P176 L33 # 530

Brand, Richard Nortel Networks

Comment Type **TR** Comment Status **R**

When a Critical link event (from the Flags field) occurs, an OAMPDU is sent immediately. The OAM Client generates an OAM_CTL.request with the corresponding Critical link event parameter set (i.e. either local_link_status, or local_dying_gasp, or local_critical_event) to request the OAM sublayer to send an Information OAMPDU with the corresponding Critical link event indication set in the Flags field. Any subsequently transmitted OAMPDU of any type will also have the Flags field set appropriately for the duration of the Critical link event. But that description is spread across clause 57.2.5.3.2 page 171 lines 40-49, and clause 57.2.10.3 page 176 lines 32-35. And I can't point to where the 'sent immediately, not subject to the 10 OAMPDUs per second speed limit' aspect is described in the text.

SuggestedRemedy

Add the following text to page 176 line 33, in between the first and second sentences:
 "The OAM sublayer shall respond by immediately sending an Information OAMPDU with the corresponding Critical link event Flag bit set or cleared. The relationships between the OAM_CTL.request parameters and the Critical link event Flag bits are:
 local_link_status : Link fault
 local_dying_gasp : Dying gasp
 local_critical_event : Critical event"
 Add the following text to page 176 line 35 after the last word: "of any type."
 Add the following text to clause 57.2.5.3.2 page 171 line 41 after the first sentence:
 "When set, the local_link_status parameter will cause the OAM sublayer entity to transmit an Information OAMPDU with the Link Fault bit of the Flags field set.

Proposed Response Response Status **C**

REJECT.

See response to comment #1.

Cl 57 SC 57.2.10.3 P176 L33 # 1

Martin, David Nortel Networks

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

When a Critical link event (from the Flags field) occurs, an OAMPDU is sent immediately. The OAM Client generates an OAM_CTL.request with the corresponding Critical link event parameter set (i.e. either local_link_status, or local_dying_gasp, or local_critical_event) to request the OAM sublayer to send an Information OAMPDU with the corresponding Critical link event indication set in the Flags field. Any subsequently transmitted OAMPDU of any type will also have the Flags field set appropriately for the duration of the Critical link event. At least that's my understanding (if not correct then Full Stop). But that description is spread across clause 57.2.5.3.2 page 171 lines 40-49, and clause 57.2.10.3 page 176 lines 32-35. And I can't point to where the 'sent immediately, not subject to the 10 OAMPDUs per second speed limit' aspect is described in the text.

SuggestedRemedy

Add the following text to page 176 line 33, in between the first and second sentences:
 "The OAM sublayer shall respond by immediately sending an Information OAMPDU with the corresponding Critical link event Flag bit set or cleared. The relationships between the OAM_CTL.request parameters and the Critical link event Flag bits are:
 local_link_status : Link fault
 local_dying_gasp : Dying gasp
 local_critical_event : Critical event"
 Add the following text to page 176 line 35 after the last word: "of any type."
 Add the following text to clause 57.2.5.3.2 page 171 line 41 after the first sentence:
 "When set, the local_link_status parameter will cause the OAM sublayer entity to transmit an Information OAMPDU with the Link Fault bit of the Flags field set."

Proposed Response Response Status **C**

REJECT.

The OAM STF recognizes that this clarification can be added. However, since there is no technical change, no change will be made for D2.2. The OAM STF editorial team will add this change for D3.0.

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Cl 57 SC 57.2.11.1 P177 L36 # 48

Braga, Aldobino UNH-IOL

Comment Type T Comment Status A

the local MAC client stops sending frames

Can the OAM client somehow tell the MAC client to stop sending frames?
There is a mechanism for the OAM client to tell the OAM sublayer to stop the transmission of MAC client frames (local_mux_action = DISCARD).

Should it say: the local OAM client sets its local_mux_action to DISCARD thereby stopping the transmission of MAC client frames.

Then on the reception of the Information OAMPDU from the remote OAM client, the local OAM client sets the local_mux_action to FWD.

SuggestedRemedy

change line to read
the local OAM client sets its local_mux_action to DISCARD

add line
On the reception of Information OAMPDU from the remote OAM client, the local OAM client sets the local_mux_action to FWD.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

The opening line in 57.2.11.1 is meant to reinforce the notion that OAM remote loopback is an intrusive operation. Ideally, a switch would take a port out of service, and then perform OAM remote loopback tests.

However, to keep the context of 57.2.11.x on the OAM client/sublayer entity, the proposed change is worthwhile.

The following line: "To initiate remote loopback, the local MAC client stops sending data frames to the remote DTE and the local OAM client sets its local_par_action parameter to DISCARD via the OAM_CTL.request service primitive."

will be changed to: "To initiate OAM remote loopback, the local OAM client sets its local_mux_action parameter to DISCARD and the local_par_action parameter to DISCARD via the OAM_CTL.request service primitive."

At the end of the paragraph, the following line will be added:
"On the reception of an Information OAMPDU from the remote OAM client with updated state information, the local OAM client sets the local_mux_action to FWD."

Cl 57 SC 57.2.11.3 P178 L17 # 49

Braga, Aldobino UNH-IOL

Comment Type T Comment Status A

Can the OAM client somehow tell the MAC client to stop sending frames?
There is a mechanism for the OAM client to tell the OAM sublayer to stop the transmission of MAC client frames (local_mux_action = DISCARD).

Should it say: the local OAM client sets its local_mux_action to DISCARD thereby stopping the transmission of MAC client frames.

Then on the reception of the Information OAMPDU from the remote OAM client, the local OAM client sets the local_mux_action to FWD.

SuggestedRemedy

change line to read
the local OAM client sets its local_mux_action to DISCARD

add line
On the reception of Information OAMPDU from the remote OAM client, the local OAM client sets the local_mux_action to FWD.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

The following line: "When the local DTE wishes to end the OAM remote loopback test, the local MAC client stops sending frames."

will be changed to: "When the local DTE wishes to end the OAM remote loopback test, the local OAM client sets its local_mux_action parameter to DISCARD."

The second portion of the suggested remedy appears redundant to: PLAIN/p.178/lines 23-25.

However, the last line in the paragraph "The remote Parser resumes passing received non-OAMPDUs up to the MAC client and the MAC client resumes sending frames to the OAM sublayer."

should be changed to: "The remote Parser resumes passing received non-OAMPDUs up to the MAC client and the local Multiplexer resumes forwarding any frames sourced by the local MAC client."

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Cl 57 SC 57.2.11.3 P178 L24 # 50

Braga, Aldobino UNH-IOL

Comment Type T Comment Status A

"local OAM client set its local_par_action and local_mux_action to FWD"

It is my understanding that the local_mux_action is never in a state other than FWD, when the local device is in charge of loopback operation. Therefore setting local_mux_action to FWD is not necessary.

In two areas, (57.2.11.3 line 17) and (57.2.11.1 line 36) it states the local MAC client stops sending data. If this mean the local OAM client sets its local_mux_action to DISCARD, then please state so. Be aware however that if the local OAM client sets the local_mux_action to DISCARD, then in both cases (57.2.11.1 - Initiation and 57.2.11.3 - Exiting) local_mux_action should be set to FWD on the reception of the Information OAMPDU from the remote OAM client.

SuggestedRemedy

Either change the line to read: "local OAM client sets its local_par_action to FWD"

or

Change both instances of "local MAC client stops sending data" to local MAC client sets its local_mux_action to DISCARD." and Under Loopback Initialization add the line about setting the local_mux_action to FWD on the reception of the Information OAMPDU.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See related comments #48 and 49.

The proposed modifications to the suggested remedies for #48 and #49 should satisfy the concerns expressed in this comment.

Cl 57 SC 57.2.11.6 P179 L21 # 51

Braga, Aldobino UNH-IOL

Comment Type T Comment Status A

"Sending the Information OAMPDU before changing state information allows the remote DTE to change its local_par_action to FWD prior to the earliest possible reception of a MAC client frame. This of course, does assume the Information OAMPDU is received error-free."

I see issues with this:

- 1) The Information OAMPDU is sending false information.
- 2) There is no way to guarantee that the remote DTE will change its local_par_action to FWD prior to the earliest possible reception of a MAC client frame, because the assumption is that the Information OAMPDU is received error-free.
- 3) There is no way to guarantee that the local DTE has received the Information OAMPDU before the remote DTE sets the local_mux_action to FWD, dumping its queued frames onto the link. Possibly losing all those frames.

SuggestedRemedy

Consider the following three way handshake:

- 1) The local MAC client stops sending frames.
- 2) The local OAM client sends a Loopback Control OAMPDU with the Disable command
***Note: if the Loopback Control OAMPDU is dropped due to error, the local OAM client tries again. No harm - No foul.
- 3) The remote OAM client on reception of the Loopback Control OAMPDU sets the local_par_action to FWD.
- 4) The remote OAM client then sends an Information OAMPDU reflecting a local_par_action set to FWD.
***Note: if the Information OAMPDU is dropped due to error, the remote can't transmit MAC client frames but can receive them. Since its been queuing since loopback operation started, this shouldn't be a problem. After 1 second the Information OAMPDU is retransmitted. No harm right?
- 5) The local OAM client on the reception of this Information OAMPDU sets its local_par_action to FWD.
- 6) The local OAM client then sends an Information OAMPDU reflecting a local_par_action set to FWD.
***Note: if the Information OAMPDU is dropped due to error, all the local device does is transmit and receive MAC client frames, which isn't a problem because the remote can't send any MAC client frames, but can receive them!! So there isn't a problem while a second goes by and the Information OAMPDU is automatically retransmitted.
- 7) The remote OAM client on the reception of this Information OAMPDU sets its local_mux_action to FWD.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

The suggested remedy will not work because it creates an unintended unidirectional link for an interminate amount of time. As this breaks 802.1, the commenter's suggested remedy

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will not be followed.

Instead, after careful review of the current implementation, one critical change is necessary. Bullets c) and d) need to be swapped in 57.2.11.6. This is the crux of the commenter's issue to begin with.

As currently defined, if bullet c) happens but d) for some reason does not, the local OAM client will change its two parameters to FWD. However, the remote DTE will remain in loopback. This will cause MAC client traffic to loop back to itself. This is a problem.

After swapping bullets c) and d), the above catastrophe can not happen as the remote device will exit loopback prior to sending updated status to the local device. Also, this approach prevents an unintended unidirectional link.

After the swap, remove the text "set to FWD" from new bullet d).

Cl 57 **SC 57.2.12** **P179** **L 38** # **52**

Braga, Aldobino UNH-IOL

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

"the OAM sublayer ensures that only OAMPDUs are sent across the link. These OAMPDUs contain. . ."

When local_link_status = FAIL, the PHY has detected an error on the link. This is the same condition causing OAMPDUs to be sent with the Link Fault critical link event flag set.

But local_link_status is a global transition that leads to local_pdu = LF_INFO, so any unidirectional operation will lead to local_pdu = LF_INFO. Thus the only OAMPDUs sent while in unidirectional operation are Information OAMPDUs with the Link Fault critical link event flag set and no Information TLVs.

SuggestedRemedy

Basically I don't want readers to think they can send any OAMPDU while in unidirectional mode. They're limited to Information OAMPDUs with certain restrictions.

Please change all reference to OAMPDUs to Information OAMPDU with the Link Fault critical link event flag set and no Information TLVs.

Proposed Response *Response Status* **C**

REJECT.

The OAM STF recognizes that this clarification can be added. However, since there is no technical change, no change will be made for D2.2. The OAM STF editorial team will add this change for D3.0.

Cl 57 **SC 57.2.5.1.1** **P170** **L 08** # **3**

Martin, David Nortel Networks

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

The Function clause descriptions for the other three primitives use only 'OAM client to OAM sublayer flow', or vice versa. This one should as well.

SuggestedRemedy

Change the text of line 8 to read:

"This primitive defines the transfer of data from an OAM client entity to an OAM sublayer entity."

Proposed Response *Response Status* **C**

REJECT.

OAMPDU.request transfers an OAMPDU between two peer OAM clients, with the help of several sublayers, of course. An OAM client uses OAMPDU.request to send an OAMPDU to the remote device's OAM client.

OAMPDU.indication simply transfers a received OAMPDU up to the OAM client.

OAM_CTL.request alters variables of the subordinate OAM sublayer entity.

OAM_CTL.indication provides updated state variables to the attached OAM client entity.

In summary, OAMPDU.request is different than the other three.

Cl 57 **SC 57.2.5.1.2** **P170** **L 22** # **2**

Martin, David Nortel Networks

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

The OAMPDU.request parameter 'flags' shouldn't include the Critical link events, or else it is redundant with the OAM_CTL.request parameters (i.e. local_link_status, local_dying_gasp, local_critical_event).

SuggestedRemedy

Add the following text to page 170 line 22 in between the second and third sentences:

"Only the indications corresponding to the Flags field bits 3-15 are contained in the flags parameter."

Proposed Response *Response Status* **C**

ACCEPT.

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Cl 57 SC 57.2.5.3.2 P171 L 26 # 23
 David, James JGG
 Comment Type E Comment Status R
 Indentation style is strange.
 SuggestedRemedy
 Look at 802.16, which indents in a more readable C-code like way.
 (single 1/4" table for each argument value).
 Proposed Response Response Status C
 REJECT.
 802.3-2002/2.3 defines the inter-layer service specifications. The service specifications found in Clause 57 are patterned after 802.3-2002/2.3. The indentation style is followed so as to make 802.3-200x self-consistent.

Cl 57 SC 57.2.5.3.2 P176 L 15 # 25
 David, James JGG
 Comment Type E Comment Status R
 Bad line thickness, around note.
 SuggestedRemedy
 Eliminate visible lines around the after-table note.
 Proposed Response Response Status C
 REJECT.
 Will incorporate this change as an editorial correction to the Sponsor Ballot draft.

Cl 57 SC 57.2.5.3.2 P177 L 25 # 24
 David, James JGG
 Comment Type E Comment Status R
 Inconsistent notation.
 Either use all caps, or lower case, but not both
 (a mixture is prohibited by IEEE Style).
 SuggestedRemedy
 CONTROL ==> control
 OPTIONAL ==> optional
 MEDIA ==> Media
 Proposed Response Response Status C
 REJECT.
 Will incorporate this change as an editorial correction to the Sponsor Ballot draft.

Cl 57 SC 57.3.1.5 P183 L 32 # 169
 Lynskey, Eric UNH-IOL
 Comment Type T Comment Status A
 I have a comment against Comment #586 made against D2.0. The comment was against 57.3.1.5, and the values of the two timers defined there. Both timers are defined as having nominal values of 5s and 1s respectively, but no ranges are provided for the timers. The comment requested that a range be provided for each of them.
 The response was to reject, stating that sometimes timers are described as having just nominal values. Examples in 23.2.4.3, 32.3.4.2, 36.2.5.1.7, and 40.3.3.3 were provided.
 Subclause 23.2.4.3 (100BASE-T4 PHY) defines a timer that governs the transitions between states in a state machine. It seems that this 40ns timer is based off of the defined TX_CLK of 25MHz, which does have a tolerance associated with it. Subclause 32.3.4.2, 40.3.3.3, and 36.2.5.1.7 have similarly defined timers for 100BASE-T2, 1000BASE-T, and 1000BASE-X respectively.

In each of these examples, it appears that there is a clear range over which the timer should exist, and therefore a clear measurement range.
 For the timers in Clause 57, I can see so such range. Also, we're talking about timers on the order of seconds and not nanoseconds. I would like to have a range such that I can test that the device properly implements these timers. For example, look at A_timer defined in 40.4.5.2. This is a 1.3 second timer with a range of +/- 25%. I would expect something similar for the timers in Clause 57.
 SuggestedRemedy
 Add ranges for each timer of +/- 10% (10 percent is an arbitrary placeholder).

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Change:
 "Duration: 5 s nominal."
 to read:
 "Duration: 5 s +/- 10%."
 Change:
 "Duration: 1 s nominal."
 to read:
 "Duration: 1 s +/- 10%."

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Cl 57 SC 57.3.2.1 P184 L 40 # 54
 Braga, Aldobino UNH-IOL
 Comment Type E Comment Status R
 Flags filed is a typo
 SuggestedRemedy
 Change filed to field
 Proposed Response Response Status C
 REJECT.
 Will incorporate this change as an editorial correction to the Sponsor Ballot draft.

Cl 57 SC 57.3.2.1 P184 L 40 # 53
 Braga, Aldobino UNH-IOL
 Comment Type T Comment Status R
 "This is accomplished by sending Information OAMPDUs once per second with the Link Fault bit of the Flags field set and no Information TLVs in the Data field."
 Why aren't all kinds of frame permitted when in unidirectional mode? If supported wouldn't it be better to send Organization Specific Information TLVs, Event Notification OAMPDUs including Organization Specific Event TLVs, and Organization Specific OAMPDUs?
 If the local_link_status = FAIL, what's the issue sourcing OAMPDUs that the last known device would understand in the hopes that you can convey more useful info?
 If and when local_link_status = OK either because the link error has been corrected or the local device is connected to a different remote partner, you go back to either the ACTIVE_SEND_LOCAL or PASSIVE_WAIT state anyway. Thus restarting the OAM Discovery process and go back to INFO or RX_INFO.
 SuggestedRemedy
 Change local_pdu to ANY in the Link_Fault state.
 or
 Create a local_pdu value called LF_ANY; where Any OAMPDU can be transmitted but all must contain the Link Fault critical link event flag set. and Change local_pdu to LF_ANY in the Link_Fault state.
 or
 Create a local_pdu value called UNI; where Any OAMPDU can be transmitted with the exception of Loopback, Variable Request, and Variable Repsonse, but all must contain the Link Fault critical link event flag set. and Change local_pdu to UNI in the Link_Fault state.
 Proposed Response Response Status C
 REJECT.
 The OAM STF took a stance that OAM information should only be exchanged with a peer OAM sublayer, both during and after the completion of the Discovery process.
 During link fault situations, the OAM sublayer sends a stripped down Information OAMPDU that only contains the Link Fault bit and no Information TLVs.
 An OAM client/sublayer pair has no way of knowing when a link has been disconnected and reconnected to a device that does not support OAM, the STF decided to limit the information sent during link fault.

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Cl 57 SC 57.3.2.1 P184 L40 # 4
 Martin, David Nortel Networks
 Comment Type E Comment Status R
 Typo
 SuggestedRemedy
 Change "of the Flags filed" to "of the Flags field"
 Proposed Response Response Status C
 REJECT.
 See #54.

Cl 57 SC 57.4.2 P190 L35 # 531
 Brand, Richard Nortel Networks
 Comment Type TR Comment Status R
 We are at Work Group Recir ballot. Cross Refs don't fit here
 SuggestedRemedy
 Proposed Response Response Status C
 REJECT.
 Clause 4 used to be open as part of P802.3ah. However, it is no longer part of the draft standard we are editing. As a result, a cross-reference is currently not possible.
 Other examples include:
 - 57.1.5.3, which has a cross reference to Annex 31B,
 - 57.1.6, which has a cross reference to 21.5
 - 57.2.3, which has a cross reference to Clause 2
 - 57.2.8.1.2, which has a cross reference to 3.2.8
 Per the Editor's Note on PLAIN/p. 165, the "CROSS REF" text string will be used by the Chief Editor and the IEEE editor(s) to add the cross references at the appropriate time.

Cl 57 SC 57.4.3 P190 L52 # 532
 Brand, Richard Nortel Networks
 Comment Type TR Comment Status R
 Again, at recir, cross refs are not acceptable
 SuggestedRemedy
 Proposed Response Response Status C
 REJECT.
 See response to comment #531.

Cl 57 SC 57.4.3.1 P192 L37 # 37
 David, James JGG
 Comment Type T Comment Status A
 OUI definition is too vague.
 SuggestedRemedy
 Show a typical OUI example, with detailed layout, down to bits.
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Table 57-10 will be changed by adding the following text to the OUI description:

The msb of the 24-bit OUI maps to bit 23 of this field.
 The lsb of the 24-bit OUI maps to bit 0 of this field.

Cl 57 SC 57.4.3.1 P192 L37 # 38
 David, James JGG
 Comment Type T Comment Status R
 OUI definition is odd and inconvenient.
 SuggestedRemedy
 Organizations are structured to provide EUI-48 and EUI-64 values. Its unclear why anyone would want to mandate yet-another EUI-56 service, which is what this text has effectively done.
 If there is a great value in an EUI-56, then that value should be listed.
 Proposed Response Response Status C
 REJECT.
 EUI-48 and EUI-64 are globally unique identifiers. The 24-bit OUI and 32-bit Vendor Specific Information fields contained within the Information TLV do NOT constitute a globally unique identifier.
 EFM is not defining a new EUI-56.

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Cl 57 SC 57.4.3.2 P193 L08 # 26
 David, James JGG
 Comment Type E Comment Status R
 Wrong figure font size; should be 8-point Ariel.
 SuggestedRemedy
 Change font size to #8.
 Proposed Response Response Status C
 REJECT.
 Clause 57 adheres to the IEEE Standards Style Manual-revised April 2002, by using Arial font for all figures and not using font sizes below 6 pt (7 pt is the smallest font used). See 16.1(a) in the above referenced manual for more information.

Cl 57 SC 57.4.3.3 P194 L22 # 79
 Squire, Matt Hatteras Networks
 Comment Type T Comment Status R
 Support a "ping" type function.
 There are several levels at which this function could be supported:
 1) Add a new ping op-code
 2) Make the variable request/response more friendly toward this utilization
 SuggestedRemedy
 It is suggested to make the ping function easier to implement with variable request/response. The suggested changes are:
 a) allow zero containers in variable requests/responses
 b) introduce a new correlator field that just gets echo'd back
 P194, L22: Change "one or more" to "zero or more". Add sentence at end of paragraph: "The correlator field is set by the requestor and echoed back by the responder in the response."
 P194, L48: Change "one or more" to "zero or more". Add a sentence at the end of the paragraph: "The correlator field is set by the requestor and echoed back by the responder in the response."
 P194, Fig 57-11, 57-12. Add "correlator" field after op-code (8-octets?)
 Proposed Response Response Status C
 REJECT.

OAM, as currently defined, ensures at least one OAMPDU is sent each second (sometimes referred to as 'keep-alives'). OAM also includes the ability to perform on-demand connectivity with the variable retrieval mechanism (using Variable Request OAMPDUs and Variable Response OAMPDUs). Other organizations, namely 802.1, MEF and the ITU are looking at implementing "ping"-like functionality and may include latency measurement.

Cl 57 SC 57.4.3.4 P194 L53 # 58
 Braga, Aldobino UNH-IOL
 Comment Type T Comment Status A
 "b) return a Variable Error for the entire package or object"
 How is this done? In draft version 1.3 it shows examples of variable errors, but only for attributes and attributes within a package. Table 57-15 doesn't seem to have an error that indicates the entire package or object can't be returned.
 If returning a package with only one Variable Error is supposed to indicate that the entire package can't be returned, then there should be a statement stating so. But this could be confusing.
 SuggestedRemedy
 I would like to see set of package Variable Error codes and a set of object Variable Error Codes.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Table 57-15 will be changed as follows:
 Change 0x01 through 0x06 by replacing "variable" with "attribute".
 Change "0x07-7F reserved" to "0x09-7F reserved".
 Add row "0x07 Requested object was unable to be returned due to an undetermined error."
 Add row "0x08 Requested package was unable to be returned due to an undetermined error."

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Cl 57 SC 57.4.3.6 P192 L37 # 39

David, James JGG
 Comment Type T Comment Status A

OUI definition is unconventional.

SuggestedRemedy

Use a typical illustrative hex-values OUI in this example, so as to avoid confusion with the rather "interesting" mix of 0-7 and 1-8 bit notations.

The reference to 802 isn't all that helpful, since this illustration does not show MSB and LSB, which have a habit of being on either side in 802 specifications.

Look at the IEEE/RAC tutorials and show something in similar detail, asking for review by the IEEE/RAC.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Figure 57-14 will be modified as follows:

Show the three octets in the center of the figure as:

1010 1100
 1101 1110
 0100 1000

The object on the right-hand side of the figure will be removed and replaced with: Sample OUI = AC-DE-48

This way, there can be no ambiguity as to the format of the OUI field.

Cl 57 SC 57.4.3.6 P192 L37 # 40

David, James JGG
 Comment Type T Comment Status R

OUI definition is insufficient.

SuggestedRemedy

Its OK to follow an OUI by vendor dependent information _if_ there is some way to ensure that the vendor does not consume all of its number space on the first implementation.

Either provide guidance on how not-to-consume, use an EUI-48, or provide some sort of extendable substructure to avoid such one OUI-per-implementation possibility.

Proposed Response Response Status C

REJECT.

The current description of the 32-bit Vendor Specific Information field, which follows the 24-bit OUI, is "32-bit identifier that may be used to differentiate a vendor's product models/versions." This can be found in PLAIN D.21/Table 57-11. This description provides guidance on how to use the available - and optional - 32-bit field.

Cl 57 SC 57.4.3.6 P196 L22 # 55

Braga, Aldobino UNH-IOL
 Comment Type T Comment Status A

Field descriptions for all other OAMPDU contain shall statements with the exception of the OUI for Organization Specific OAMPDU.

SuggestedRemedy

Please change the line to read:

"The first three octets of the Organization Specific OAMPDU Data field shall contain. . ."

Proposed Response Response Status C

ACCEPT.

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Cl 57 SC 57.4.3.6 P 200 L 15 # 99040
 Parsons, Glenn Nortel Networks

Comment Type **TR** Comment Status **A** D2.0 #1156

To be consistent with the rest of the OAM clause, the Organization specific OAMPDU should use the 'vendor identifier' (that itself should be EUI64 per another comment) as the first part of its data instead of the OUI.

SuggestedRemedy

Replace OUI with EUI64 or vendor identifier (that is defined as a subset of EUI64)

Proposed Response Response Status **U**

ACCEPT IN PRINCIPLE.

See response to comment #1155.

Cl 57 SC 57.5.2.2 P 203 L 19 # 99041
 Parsons, Glenn Nortel Networks

Comment Type **TR** Comment Status **A** D2.0 #1155

The Vendor Identifier described in table 57-10 should be aligned with the EUI64 identifier. IEEE/RAC now requires that new applications use EUI64. Their review would likely recommend the same thing. That is, it should be 64 bits.

SuggestedRemedy

Define the Vendor Identifier as a subset of EUI64 with a 24 bit device identifier and a 16 bit version identifier.

Proposed Response Response Status **U**

ACCEPT IN PRINCIPLE.

Clause 57 is defining a vendor specific protocol identifier (in a manner similar to SNAP) and not a globally unique identifier. Hence, neither the usage of the EUI-48/64 nor any other EUI is appropriate.

In addition, according to "Guidelines for EUI64: 64-bit Global Identifiers," no more than one EUI-64 value shall be contained within each component that is manufactured. This restriction would prevent an OAM-enabled DTE from speaking two or more separate organization specific protocols.

Rather than the suggested remedy, the following changes will be made:
 Split Table 57-10 into two. One table will contain just the OUI. The second table will contain a 32-bit vendor specific information field.

Add note to Table 57-10 and other uses of OUI within Clause 57: "Organizations that have previously received OUIs from the IEEE Registration Authority should use one of their allocated OUIs consistently as the company identifier."

Cl 57 SC 57.5.2.3 P 203 L 51 # 99042
 James, David JGG

Comment Type **TR** Comment Status **A** RAC D2.0 #469

Illegal and ill-advised OUI usage. All new identifier uses based on the OUI are required to use the EUI-64 unique identifier format. Relying on the owner of the OUI to properly administer Data/Pad values uniquely does not (in practice, speaking as an IEEE/RAC member) work.

SuggestedRemedy

Change (c,d) to:

c) organizationEui. A three-octet organizationally unique identifier (OUI) followed by 5 bytes administered by that organization. The concatenation of these fields forms an EUI-64, as defined by the IEEE/RAC.

d) organizationSpecific. Data bytes whose format and meaning are dependent on the organizationEui.

Proposed Response Response Status **U**

ACCEPT IN PRINCIPLE.

See response to comment #1155.

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CI 57 SC 57.5.3.1 P200 L47 # 553

Messenger, John ADVA Optical Network

Comment Type TR Comment Status A

"This event is generated if the symbol error count is equal to or greater than the specified threshold for that period."

As the default value for the threshold is 0, this event will be always be generated.

(Error appears in each of the 4 events)

SuggestedRemedy

Alarms are usually raised when a threshold is exceeded rather than when it is reached, so change "equal to or greater than" to "greater than".

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

If the threshold remains set to the default value, the commeter's point is true - the link event will always be generated. This is desired behavior due to the two usage models, which emerged:

The first usage model (threshold set to zero) always generates link events at the end of the window. This provides a data log of the link over time and can be used by some applications to prove service level agreements.

The second usage model (threshold set to something other than zero) only generates link events when a threshold is met. Some applications may want link events that directly translate to alarms indications. For instance, a threshold set to the value one, would generate a link event whenever one or more errors occurred. A corresponding network management software application could then raise an alarm based on this link event.

During the Task Force review, proponents of both usage models voiced their opinions. The current text supports both usage models.

The OAM STF decided to change the default value for all thresholds to one. The rationale is that the majority of EFM links are not thought to require the "data log" model (residential access) vs. business access.

Change PLAIN/57.5.3.1/p.201/ln. 16: "zero" to "one"

Change PLAIN/57.5.3.2/p.202/ln. 7: "zero" to "one"

Change PLAIN/57.5.3.3/p.203/ln. 1: "zero" to "one"

Change PLAIN/57.5.3.4/p.203/ln. 47: "zero" to "one"

CI 57 SC 57.5.3.1 P201 L12 # 554

Messenger, John ADVA Optical Network

Comment Type TR Comment Status A

See JLM-6. Also, grammatical error.

"...field indicates the number of errored symbols in the period that is required to be equal to or greater than in order for the event to be generated, ...".

As the default value for the threshold is 0, this event will always be generated, which is not desirable.

SuggestedRemedy

Change to "...field indicates the number of errored symbols in the period which must be exceeded in order for the event to be generated, ...".

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See response to comment #553.

CI 57 SC 57.5.3.2 P201 L35 # 555

Messenger, John ADVA Optical Network

Comment Type TR Comment Status A

See JLM-6. "This event is generated if the errored frame count is equal to or greater than the specified threshold for that period."

As the default value for the threshold is 0, this event will be always be generated.

(Error appears in each of the 4 events)

SuggestedRemedy

Alarms are usually raised when a threshold is exceeded rather than when it is reached, so change "equal to or greater than" to "greater than".

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See response to comment #553.

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CI 57 SC 57.5.3.2 P202 L03 # 556
 Messenger, John ADVA Optical Network

Comment Type TR Comment Status A

See JLM-6. Also, grammatical error.
 "...field indicates the number of detected errored frames in the period that is required to be equal to or greater than in order for the event to be generated, ...".
 As the default value for the threshold is 0, this event will always be generated, which is not desirable.

SuggestedRemedy

Change to "...field indicates the number of errored frames in the period which must be exceeded in order for the event to be generated, ...".

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See response to comment #553.

CI 57 SC 57.5.3.3 P202 L26 # 557
 Messenger, John ADVA Optical Network

Comment Type TR Comment Status A

See JLM-6. "This event is generated if the errored frame count is equal to or greater than the specified threshold for that period.". As the default for the threshold is zero, this event will always be generated, which is not desirable.

SuggestedRemedy

Alarms are usually raised when a threshold is exceeded rather than when it is reached, so change "equal to or greater than" to "greater than".

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See response to comment #553.

CI 57 SC 57.5.3.3 P202 L51 # 558
 Messenger, John ADVA Optical Network

Comment Type TR Comment Status A

See JLM-6. Also, grammatical error.
 "...field indicates the number of errored frames in the period that is required to be equal to or greater than in order for the event to be generated, ...".
 As the default value for the threshold is 0, this event will always be generated, which is not desirable.

SuggestedRemedy

Change to "...field indicates the number of errored frames in the period which must be exceeded in order for the event to be generated, ...".

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See response to comment #553.

CI 57 SC 57.5.3.4 P203 L21 # 559
 Messenger, John ADVA Optical Network

Comment Type TR Comment Status A

See JLM-6. "This event is generated if the number of errored frame seconds is equal to or greater than the specified threshold for that period." As the default value of the threshold is 0, this event will always be generated, which is not desirable.

SuggestedRemedy

Alarms are usually raised when a threshold is exceeded rather than when it is reached, so change "equal to or greater than" to "greater than".

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See response to comment #553.

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CI 57 SC 57.5.3.4 P203 L 43 # 560
 Messenger, John ADVA Optical Network

Comment Type TR Comment Status A

See JLM-6. Also, grammatical error.
 "...field indicates the number of errored frame seconds in the period that is required to be equal to or greater than in order for the event to be generated, ...".
 As the default value for the threshold is 0, this event will always be generated, which is not desirable.

SuggestedRemedy

Change to "...field indicates the number of errored frame seconds in the period which must be exceeded in order for the event to be generated, ...".

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See response to comment #553.

CI 57 SC 57.6.2 P204 L 53 # 56
 Braga, Aldobino UNH-IOL

Comment Type T Comment Status R

Please provide a better description of how Variable Containers work.
 Its not clear to me how they work from simply reading the text. I had to go back to draft version 1.3 to understand how these things are formatted and even then I still don't fully understand it.

Table 57-14 doesn't convey the operation of packages or objects well. When operating with a package, there is one Branch, one Leaf, but then for each attribute a width & value pair (unless there is an error). This is still considered a single Variable Container. I don't think that's intuitive from the table.

I don't really know how objects work; I haven't seen an example of one.

SuggestedRemedy

Please
 a) Clear this up with a paragraph or two
 b) Create an informative annex with examples of attributes, packages, objects, and the previous three each with errors.

I'd settle for just the annex but both would be better.

Proposed Response Response Status C

REJECT.

Will add text and possibly sample figures to 57.6 as an editorial addition to the Sponsor Ballot draft.

CI 57 SC 57.6.3 P205 L 47 # 59
 Braga, Aldobino UNH-IOL

Comment Type E Comment Status A

The heading is Parsing, which I can only assume means for both Variable Descriptors and Containers. The text above the list however seems to only mention Variable Containers.

SuggestedRemedy

Please add text Variable Containers in the text above the list.

Proposed Response Response Status C

ACCEPT.

CI 57 SC 57.6.4 P206 L 03 # 57
 Braga, Aldobino UNH-IOL

Comment Type E Comment Status R

Table 57-16 alone doesn't help me understand how Variable Descriptors/Containers work.

I don't know if this is a left over from when there used to be examples of Variable Descriptors and Containers.

SuggestedRemedy

Please either
 a) Remove Table 57-16
 b) Add examples of OAMPDUs with Variable Descriptors/Containers to help clarify.
 Possibly in an Annex? The ones in draft 1.3 are a good start but more examples would be nice.

Proposed Response Response Status C

REJECT.

The OAM STF feels Table 57-16 is valuable. See comment #56 regarding adding example figures.

CI 57 SC Table 57-10 P199 L 26 # 41
 David, James JGG

Comment Type T Comment Status R

company_id footnote is confusing.

SuggestedRemedy

Delete footnote (b).

Proposed Response Response Status C

REJECT.

This footnote was added to alleviate any possible concern on the part of the Registration Authority as to the possible rapid depletion of OUIs. It was suggested that adding a footnote instructing companies, which own OUI(s) already, should use an existing one to identify their gear. In addition, using one of the OUIs consistently is also considered good practice.

P802.3ah Draft 2.1 Comments

Cl 58 SC P220 L # 99064
 Meir Bartur Optical Zonu
 Comment Type **TR** Comment Status **R** D2.0 #851
 Does not include single wavelength option
 SuggestedRemedy
 Include single wavelength option
 Proposed Response Response Status **U**
 REJECT.
 The dual wavelength proposal was adopted as baseline for the 100M bidi PMD. The single wavelength proposal was not adopted. This baseline was adopted at the Edinburgh Interim in May 2002, after the issue being discussed at several meetings.

Cl 58 SC 58.1 P218 L10 # 332
 Dawe, Piers Agilent
 Comment Type **T** Comment Status **A** e-mail
 There are now two possible 100BASE-X PCS/PMAs.
 SuggestedRemedy
 Change 'Clause 24*ref*' to 'Clause 24*ref*' or 66.1*ref*'.
 Proposed Response Response Status **C**
 ACCEPT.

Cl 58 SC 58.1 P218 L23 # 342
 Dawe, Piers Agilent
 Comment Type **E** Comment Status **R** scope
 100BASE-LX10 direction isn't N/A: there can be discernible direction with 100BASE-LX10.
 SuggestedRemedy
 Change 'N/A' to 'Any'?
 Proposed Response Response Status **C**
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.
 These changes will be made in preparation for Sponsor ballot

Cl 58 SC 58.1.1 P218 L46 # 343
 Dawe, Piers Agilent
 Comment Type **E** Comment Status **A**
 Grammar.
 SuggestedRemedy
 Make a proper sentence of it. Also 59.1.1, 60.1.1.
 Proposed Response Response Status **C**
 ACCEPT IN PRINCIPLE.
 Change text to "The following are the objectives of 100BASE-LX10 and 100BASE-BX10:"
 Make similar changes to 59.9.1 and 60.1.1.

Cl 58 SC 58.1.1 P219 L50 # 344
 Dawe, Piers Agilent
 Comment Type **E** Comment Status **A**
 Is it really data? e.g. 36.2.4.3 draws a distinction between 'data' and 'special'.
 SuggestedRemedy
 Also line 51.
 Proposed Response Response Status **C**
 ACCEPT IN PRINCIPLE.
 Change text to "NRZI encoded 4B/5B bit stream".
 Also change this in Table 58-11, and in subclauses 58.8.3 & 58.8.4.

Cl 58 SC 58.1.3 P219 L33-38 # 64
 Shimon Muller Sun Microsystems, Inc
 Comment Type **E** Comment Status **R** scope
 Reference terminology.
 SuggestedRemedy
 Replace "Clause 1.1" with "subclause 1.1".
 Replace "Clause 1.2" with "subclause 1.2".
 Replace "Clause 1.3" with "subclause 1.3".
 Replace "Clause 1.4" with "subclause 1.4".
 Replace "Clause 1.5" with "subclause 1.5".
 Proposed Response Response Status **C**
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.
 These changes will be made in preparation for Sponsor ballot

P802.3ah Draft 2.1 Comments

Cl 58 SC 58.1.4.2 P220 L19 # 350
 Dawe, Piers Agilent
 Comment Type E Comment Status R scope
 MBaud
 SuggestedRemedy
 MBd
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.
 These changes will be made in preparation for Sponsor ballot

Cl 58 SC 58.10.2 P248 L52 # 357
 Dawe, Piers Agilent
 Comment Type E Comment Status R scope
 Shouldn't split a single letter off to another line.
 SuggestedRemedy
 Use nonbreaking hyphen in 'ITU-T'.
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.
 These changes will be made in preparation for Sponsor ballot

Cl 58 SC 58.10.4 P251 L16 # 99065
 Thompson, Geoff Nortel
 Comment Type TR Comment Status A D2.0 #999
 There is no specified standardized MDI.
 It is very much a key element of the success of any Ethernet Standard to specify a single interoperable MDI for each cabling interface. The lack of such a specification is a major shortcoming of 10 GBE. We should not make the same mistake for EFM. If EFM was able to succeed in coming up with a single code for copper then choosing a connector should be well within the ability of the group.
 SuggestedRemedy
 Specify a single (standards based) connector type for connecting to single mode fiber or at least a single connector type for each PMD type. Change the business about specifying the performance at the end of TP2 to be part of the test set-up instead of the interoperability test point.

Proposed Response Response Status U
 ACCEPT IN PRINCIPLE.
 The MDI is properly specified (see subclause 58.10.4) and the explicit choice of a connector is neither necessary nor helpful to best meet our objectives in a timely manner.
 Commenter's wish for a chosen connector relates to something a consumer might buy, rather than connectors in the CO.
 Change to the right IEC reference for fiber optic connector performance (mechanical and optical) for all three clauses. Should be -1 not -1-1.

Cl 58 SC 58.11.3.2 P252 L11 # 358
 Dawe, Piers Agilent
 Comment Type E Comment Status A attn
 Last time (comment 124) we meant to add PICS items for stressed sensitivity to clauses 58 and 60 as well as 59.
 SuggestedRemedy
 Add them. I think they are conditionally optional depending on OM9: if so, add * to OM9
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Add to tables 58.11.3.2 , 58.11.3.3 and 58.11.3.4
 New three new item LX3, BD3 and BU3
 Feature - 100BASEX10 Stressed sensitivity
 Status LX:O, BD:O, BU:O
 Make appropriate changes for 59 and 60

P802.3ah Draft 2.1 Comments

Cl 58 SC 58.11.3.5 P252 L 42 # 360
 Dawe, Piers Agilent
 Comment Type E Comment Status R scope
 PICS needs to follow clause very precisely. Clause doesn't say 'Used', it says 'definitive'
 SuggestedRemedy
 Delete 'Used'.
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.
 These changes will be made in preparation for Sponsor ballot

Cl 58 SC 58.11.3.7 P253 L 40 # 361
 Dawe, Piers Agilent
 Comment Type E Comment Status A e-mail
 Reference has changed.
 SuggestedRemedy
 IEC 61753-1. Check other two clauses (body and PICS) for same issue.
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 See comment 374

Cl 58 SC 58.2 P220 L 47 # 135
 Jönsson, Ulf Ericsson Corp
 Comment Type T Comment Status R e-mail
 This clause shows Clause 45 registers which are not applicable to 100Mbps optics.
 SuggestedRemedy
 Need joint meeting between optics and logics people to discuss Clause 22/45 registers for 100/1000Mbps optics
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.

Cl 58 SC 58.2 P220 L 50 # 337
 Dawe, Piers Agilent
 Comment Type TR Comment Status R e-mail
 This comment applies to clauses 59 and 60 also.
 The clause 45 registers shown are currently thought not applicable to 100M or 1G. Optics track believed that a method for accessing clause 22 registers through a clause 45 MDIO bus would be provided in 802.3ah; this is desired as clause 22 has no traction in optics and clause 22 voltage levels are obsolescent. Is this mechanism already in place?
 Not sure if clause 60 needs new registers.
 SuggestedRemedy
 Need optics/logic joint meeting on 22/45 registers.
 If we can already access clause 22 registers through a clause 45 interface, do we just replace these cl.45 registers in the table with the equivalent cl.22 registers?
 Proposed Response Response Status Z
 WITHDRAWN.

The comment is made against material that was previously approved and is unchanged in this draft.

Cl 58 SC 58.3.3 P222 L 10 # 27
 David, James JGG
 Comment Type E Comment Status R scope
 Wrong figure font size; should be 8-point Ariel.
 SuggestedRemedy
 Change font size to #8.
 Proposed Response Response Status C
 REJECT.

The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

P802.3ah Draft 2.1 Comments

Cl 58 SC 58.3.4 P222 L 46 # 494
 Booth, Brad Intel
 Comment Type E Comment Status R
 Table 58-4 should be kept on one page.
 SuggestedRemedy
 Increase the orphan count for the table.
 Proposed Response Response Status C
 REJECT.
 Changes will be made upon final assembly of the document

Cl 58 SC 58.6 P227 L 49 # 345
 Dawe, Piers Agilent
 Comment Type E Comment Status R scope
 Extend note of explanation about allocation for penalties.
 SuggestedRemedy
 'For 100BASE-X, it is possible for the allocation for penalties to be less than the TDP limit, as some penalties measured by TDP may arise in the receiver and need not be counted twice.'
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.
 These changes will be made in preparation for Sponsor ballot

Cl 58 SC 58.7 P228 L 10 # 346
 Dawe, Piers Agilent
 Comment Type T Comment Status R scope
 The jitter sections need to be tied together and have their terminology aligned.
 SuggestedRemedy
 In table 58-10, insert '(W)' after 'High probability jitter'. W in italics. Make the table full width.
 Change 'DJ' to 'W' twice.
 Add extra words 'NOTE - As an example, TJ10....'.
 Add sentence saying that 'W is similar but not necessarily identical to deterministic jitter (DJ)'.
 Refer to 58.8.12, note that there are other jitter measurement methods.
 Add sentence 'Jitter at TP2 or TP3 is defined with a receiver of the same bandwidth as specified for the transmitted eye.'
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.

Cl 58 SC 58.8.1 P229 L 9 # 347
 Dawe, Piers Agilent
 Comment Type E Comment Status A scope
 Font size of '(1010 for 4B/5B NRZI)'
 SuggestedRemedy
 Reapply style.
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 See comment 457

Cl 58 SC 58.8.1.1 P229 L 51 # 348
 Dawe, Piers Agilent
 Comment Type E Comment Status A
 The reader can't see what flips. Need to add more explanation.
 SuggestedRemedy
 The "flipping" content causes a different frame check sequence which in turn causes the following idle to be inverted.
 Proposed Response Response Status C
 ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 58 SC 58.8.1.1 P 229 L 54 # 136

Jönsson, Ulf Ericsson Corp

Comment Type E Comment Status A

Two periods '..'

SuggestedRemedy

Remove one '.'

Proposed Response Response Status C

ACCEPT.

Cl 58 SC 58.8.1.1 P 230 L 43 # 561

Thomas Dineen Dineen Consulting

Comment Type TR Comment Status A

The FCS value included in the test frame depicted in Table 58-12 is incorrect. My investigation and simulation has concluded that the presented values must be inverted and for each byte the values must be swapped [7:0] to [0:7]. Please note that the base CRC value before the above manipulations seems to be correct. Please review the frame carefully and see if you concur.

By the way I would be glad to verify any other test frames that are proposed by the group.

See Std 802.3 / 2002 Section 3.2.8, part of which is copied below for details:

"3.2.8 Frame Check Sequence (FCS) field.

d) The coefficients of R(x) are considered to be a 32 bit sequence.

-> e) The bit sequence is complemented and the result is the CRC.

-> The 32 bits of the CRC value are placed in the frame check sequence field so that the x31 term is the leftmost bit of the first octet, and the x0 term is the right most bit of the last octet. (The bits of the CRC are thus transmitted in the order x31, x30, ..., x1, x0.) See reference [B37]."

SuggestedRemedy

Correct the FCS as described above by inverting the binary value of each byte and swapping the values [7:0] to [0:7].

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See response to Comment 5801

Cl 58 SC 58.8.1.1 P 230 L 43 # 5801

Thomas Dineen

Comment Type TR Comment Status A

The FCS value included in the test frame depicted in Table 58-12 is incorrect. My investigation and simulation has concluded that the presented values must be inverted and for each byte the values must be swapped [7:0] to [0:7]. Please note that the base CRC value before the above manipulations seems to be correct. Please review the frame carefully and see if you concur. By the way I would be glad to verify any other test frames that are proposed by the group. See Std 802.3 / 2002 Section 3.2.8, part of which is copied below for details: "3.2.8 Frame Check Sequence (FCS) field. d) The coefficients of R(x) are considered to be a 32 bit sequence. e) The bit sequence is complemented and the result is the CRC. The 32 bits of the CRC value are placed in the frame check sequence field so that the x31 term is the leftmost bit of the first octet, and the x0 term is the right most bit of the last octet. (The bits of the CRC are thus transmitted in the order x31, x30, ..., x1, x0.) See reference [B37]."

SuggestedRemedy

Correct the FCS as described above by inverting the binary value of each byte and swapping the values [7:0] to [0:7].

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

The editor will revise the test frame patterns and provide the correct CRCs.

Also, table 58-13 needs to show all 4 CRC octets, not just the first one.

Cl 58 SC 58.8.1.1 P 231 L 25 # 349

Dawe, Piers Agilent

Comment Type E Comment Status R scope

Missing space inTable

SuggestedRemedy

in Table

Proposed Response Response Status C

REJECT.

The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

P802.3ah Draft 2.1 Comments

Cl 58 SC 58.8.1.1 P231 L28 # 351
 Dawe, Piers Agilent
 Comment Type T Comment Status A scope
 Is this table 58-13 complete?
 SuggestedRemedy
 Add extra lines for FCS 2,3,4 and ESD if needed.
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 See dawe_optics_1_1103.pdf containing an updated test pattern.

Cl 58 SC 58.8.11.4 P245 L7 # 356
 Dawe, Piers Agilent
 Comment Type E Comment Status R
 Need to tie terminology here and in receiver table together.
 SuggestedRemedy
 Add sentence:
 f2 is specified as "Jitter corner frequency" in the receiver tables.
 Move the second sentence of note a of table 58-15 to follow it.
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.
 These changes will be made in preparation for Sponsor ballot

Cl 58 SC 58.8.2 P231 L34 # 352
 Dawe, Piers Agilent
 Comment Type T Comment Status R scope
 Now we have some good boilerplate we should use it throughout the test procedures. We can let TIA decide what the instrument is called.
 SuggestedRemedy
 'The wavelength and spectral width (RMS) shall meet specifications according to ANSI/EIA/TIA-455-127 ...'
 Similarly in clauses 59 and 60.
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.

Cl 58 SC 58.8.6 P233 L4 # 353
 Dawe, Piers Agilent
 Comment Type E Comment Status R scope
 If we are to replace . multiplier signs by x here is one more.
 SuggestedRemedy
 Also might want to be consistent in eq 58-9.
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

Cl 58 SC 58.8.8 P235 L14 # 354
 Dawe, Piers Agilent
 Comment Type E Comment Status A
 operation. . The
 SuggestedRemedy
 operation. The Also . at end of paragraph.
 Proposed Response Response Status C
 ACCEPT.

Cl 58 SC 58.8.8 P235 L15 # 138
 Jönsson, Ulf Ericsson Corp
 Comment Type E Comment Status A
 Two '..'
 SuggestedRemedy
 Remove one period
 Proposed Response Response Status C
 ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 58 **SC 58.8.8** **P 236** **L 17** # **139**
 Jönsson, Ulf Ericsson Corp
Comment Type E **Comment Status A**
 Incorrect symbol in 5x10⁻⁵
SuggestedRemedy
 Change to correct symbol
Proposed Response **Response Status C**
 ACCEPT.

Cl 58 **SC 58.8.9.3** **P 238** **L 49** # **355**
 Dawe, Piers Agilent
Comment Type TR **Comment Status D** *scope*
 Here we need to explain that for 100BASE-xX10, S may have to be measured with a more benign pattern.
SuggestedRemedy
 Add sentences:
 For 100BASE-LX10 and 100BASE-BX10, TDP includes a pattern dependent penalty. As it may be inconvenient or impossible to obtain reference transmitters and receivers which are immune to this penalty, for these cases S may be measured with a benign pattern e.g. PRBS7.
Proposed Response **Response Status Z**
 WITHDRAWN.
 The comment is made against material that was previously approved and is unchanged in this draft.

Cl 58 **SC Table 58-11** **P 229** **L 10** # **457**
 Tom Mathey Independent
Comment Type E **Comment Status A** *D2.0*
 Text has idle pattern as 4 bits. The idle pattern in the NRZI world is 5 bits. Duplicate of D2.0 comment #266.
SuggestedRemedy
 Change idle pattern from 4 bits to 5 bits, "10101"
Proposed Response **Response Status C**
 ACCEPT IN PRINCIPLE.
 Add three dots after 1010. Apply this change to a few more instances throughout the document.

Cl 58 **SC Table 58-13** **P 231** **L 18** # **137**
 Jönsson, Ulf Ericsson Corp
Comment Type E **Comment Status R** *scope*
 Missed space
SuggestedRemedy
 Add space between 'in' and 'Table' on line 18 and 25
Proposed Response **Response Status C**
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.
 These changes will be made in preparation for Sponsor ballot

Cl 59 **SC** **P 257** **L** # **99066**
 Meir Bartur Optical Zonu
Comment Type TR **Comment Status R** *D2.0 #852*
 Does not include single wavelength option
SuggestedRemedy
 Include single wavelength option
Proposed Response **Response Status U**
 REJECT.
 Adoption of a two-wavelength solution has been discussed in detail and approved on the basis that it is a cost-effective and robust solution that meets our Objectives. Accordingly, the baseline proposals were selected in May 2002 with overwhelming majority.

Cl 59 **SC 58.1.5.1** **P 258** **L 33** # **363**
 Dawe, Piers Agilent
Comment Type E **Comment Status R** *scope*
 GBaud
SuggestedRemedy
 GBd
Proposed Response **Response Status C**
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.
 These changes will be made in preparation for Sponsor ballot

P802.3ah Draft 2.1 Comments

Cl 59 SC 59.1 P256 L9 # 362
 Dawe, Piers Agilent
 Comment Type T Comment Status A e-mail
 There are now two possible 1000BASE-X PCS/PMAs.
 SuggestedRemedy
 Change 'Clause 36 *ref*' to 'Clause 36*ref* or 66.2*ref*'.
 Proposed Response Response Status C
 ACCEPT.

Cl 59 SC 59.11.3 P277 L26 # 495
 Booth, Brad Intel
 Comment Type E Comment Status A
 Correct spelling of "fibre".
 SuggestedRemedy
 Needs to be Americanized to "fiber".
 Proposed Response Response Status C
 ACCEPT.

Cl 59 SC 59.1.3 P257 L46-51 # 65
 Shimon Muller Sun Microsystems, Inc
 Comment Type E Comment Status R scope
 Reference terminology.
 SuggestedRemedy
 Replace "Clause 1.1" with "subclause 1.1".
 Replace "Clause 1.2" with "subclause 1.2".
 Replace "Clause 1.3" with "subclause 1.3".
 Replace "Clause 1.4" with "subclause 1.4".
 Replace "Clause 1.5" with "subclause 1.5".
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.
 These changes will be made in preparation for Sponsor ballot

Cl 59 SC 59.11.4 P277 L40 # 374
 Dawe, Piers Agilent
 Comment Type T Comment Status A e-mail
 Consistency across clauses.
 SuggestedRemedy
 Change '61753-1-1' to '61753-1' here and in PICS F05. Copy the sentence from 58.10.4: 'The MDI carries the signal in both directions. For 100BASE-BX10 it couples a single fiber and for 100BASE-LX10 it couples dual fibers.' Apply to clause 60 also as appropriate.
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Change '61753-1-1' to '61753-1' here and in PICS F05. Make appropriate change to Cl 60. Add to 59.11.4, l 40 'The MDI carries the signal in both directions. For 1000BASE-BX10 it couples a single fiber and for 1000BASE-LX10 it couples dual fibers.'
 Add to Clause 60.10.4 " The MDI carries the signal in both directions for 1000BASE-PX10 and 1000BASE-PX20 and couples to a single fiber"

Cl 59 SC 59.11.2 P277 L26 # 47
 Swanson, Steven Corning Incorporated
 Comment Type E Comment Status D attn
 Footnote d to Table 59-18 states the wrong length for 400 MHz.km fiber.
 SuggestedRemedy
 Replace "...also covered 550m of 400 MHz.km fiber,..." with "...covered 500m of 400 MHz.km fiber,..."
 Proposed Response Response Status Z
 WITHDRAWN.
 Length is correct at 1300nm.

Cl 59 SC 59.11.5 P278 L14 # 331
 Dawe, Piers Agilent
 Comment Type T Comment Status R attn
 It is important that a patchcord allowing SMF grade tolerances (which this is close to) allows the two ferrules in a connector to move relative to each other, at least at the equipment connector. There are industry standard tolerances for this.
 SuggestedRemedy
 Add sentence explaining and (if not already covered by reference) requiring this controlled float, with reference if needed.
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.

P802.3ah Draft 2.1 Comments

Cl 59 SC 59.11.5 P278 L34 # 30
 David, James JGG
 Comment Type E Comment Status R scope
 Excess capitalization.
 SuggestedRemedy
 Blue Color Identifier ==> Blue color identifier
 (Capitalize only the first word of heading/title or proper nouns.)
 Proposed Response Response Status C
 REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

Cl 59 SC 59.12.3.5 P282 L14 # 375
 Dawe, Piers Agilent
 Comment Type E Comment Status R attn
 per what?
 SuggestedRemedy
 ?
 Proposed Response Response Status C
 REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

Cl 59 SC 59.2 P259 L6 # 140
 Jönsson, Ulf Ericsson Corp
 Comment Type T Comment Status R e-mail
 This clause shows Clause 45 registers which are not applicable to 1000Mbps optics.
 SuggestedRemedy
 Need joint meeting between optics and logics people to discuss Clause 22/45 registers for 100/1000Mbps optics
 Proposed Response Response Status C
 REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 59 SC 59.3.3 P260 L20 # 28
 David, James JGG
 Comment Type E Comment Status R scope
 Figure font should be 8-point.
 SuggestedRemedy
 Make this 8 point.
 Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

Cl 59 SC 59.3.3 P262 L38 # 29
 David, James JGG
 Comment Type E Comment Status R
 Table should have very thin line on the page break.
 SuggestedRemedy
 Fix templates and overrides.
 Proposed Response Response Status C
 REJECT.

Change to be implemented by chief editor at a later stage in the editing process.

Cl 59 SC 59.4.1 P263 L15 # 364
 Dawe, Piers Agilent
 Comment Type T Comment Status R scope
 If common silicon behind TP4 is to be used for 1000BASE-LX10 and 1000BASE-BX10, the decision timing offsets need to be the same. At present they are +/- 65 ps and +/- 0.1 UI = 80 ps.
 SuggestedRemedy
 Choose a compromise value.
 Proposed Response Response Status C
 REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

P802.3ah Draft 2.1 Comments

Cl 59 SC 59.4.1 P 263 L 19 # 329
 Dawe, Piers Agilent

Comment Type TR Comment Status D scope

Need to agree how we cover legacy MMF fiber types. Table 59-5 calls out two TDP limits for different MMF types, yet the associated differential delay value is the same for both types. It may be that the 50 um TDP limit is worked out assuming 400 MHz.km while the differential delay assumes 500 MHz.km.

SuggestedRemedy

Reconcile TDP and differential delay values. May need to add additional explanation e.g. in 59.11; what distance of 400 MHz.km legacy fiber is supported?

Proposed Response Response Status Z

WITHDRAWN. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 59 SC 59.4.1 P 263 L 24 # 365
 Dawe, Piers Agilent

Comment Type T Comment Status A

Consistency across clauses.

SuggestedRemedy

Extend footnote b '...range, see range, see 59.9.2.' Also under table 59-8. Delete 'n' under table 59-7.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

use text in Note 1 on page 269.

leave 'n' until changes for D3.0 are to be made

Cl 59 SC 59.4.1 P 263 L 24 # 366
 Dawe, Piers Agilent

Comment Type E Comment Status A

Editorials

SuggestedRemedy

(Nonbreaking) space in '3dB' and '550 m' (twice), nonbreaking space in '500 MHz.km'. Also in footnote d of table 59-18.

Proposed Response Response Status C

ACCEPT.

Cl 59 SC 59.4.1 P 263 L 25 # 45
 Swanson, Steven Corning Incorporated

Comment Type E Comment Status D attn

Footnote c to Table 59-5 states the wrong length for 400 MHz.km fiber.

SuggestedRemedy

Replace "...also covered 550m of 400 MHz.km fiber,..." with "...covered 500m of 400 MHz.km fiber,..."

Proposed Response Response Status Z

WITHDRAWN.

Length is correct at 1300nm.

Cl 59 SC 59.4.1 P 264 L 15 # 367
 Dawe, Piers Agilent

Comment Type E Comment Status R scope

Hunting Down those Capitals.

SuggestedRemedy

Lower case Sensitivity (twice), Reflectance, Receive. Also in table 59-9, and a bunch in table 59-13.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

Cl 59 SC 59.5.2 P 266 L 11 # 368
 Dawe, Piers Agilent

Comment Type T Comment Status R scope

We seem to have ended up with the same transmit powers for 1000BASE-LX10 and 1000BASE-BX10, same cable plant yet different sensitivities. Not sure if this makes sense.

SuggestedRemedy

Consider increasing 100BASE-BX10 sensitivity, stressed sensitivity and equivalent OMA's by 0.5 dB. If so, reduce budget and allocation for penalties in table 59-10 by 0.5 dB.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

P802.3ah Draft 2.1 Comments

Cl 59 SC 59.7 P 267 L 25 # 333
 Dawe, Piers Agilent

Comment Type T Comment Status R attn

This sub-clause does not specify use of a receiver filter when measuring optical jitter of an optical signal (at TP2 and TP3). If the reader is aware of the jitter measurement section elsewhere, and persistently drills into the cross-references there, he may get there in the end, but otherwise could be misinformed.

SuggestedRemedy

In 59.7 and 59.8, mention use of same receiver filter as for eye and TDP, when measuring optical jitter of an optical signal (at TP2 and TP3). Also refer to jitter measurement sections 59.9.12 and 58.8.12. In 59.9.12, mention the filter. Check 58 and 60 for similar issue, fix if necessary.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 59 SC 59.7 P 267 L 9 # 369
 Dawe, Piers Agilent

Comment Type T Comment Status R scope

The jitter sections need to be tied together and have their terminology aligned.

SuggestedRemedy

Consider if DJ should be replaced by W here and in 59.8.
 Add sentence saying that 'W is similar but not necessarily identical to deterministic jitter (DJ)'.
 Refer to 59.9.12 and 59.9.13, note that there are other jitter measurement methods.
 Add sentence 'Jitter at TP2 or TP3 is defined with a receiver of the same bandwidth as specified for the transmitted eye.'
 maybe 59.9.13 is a good place to elaborate on DJ and W.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 59 SC 59.8 P 267 L 33 # 46
 Swanson, Steven Corning Incorporated

Comment Type E Comment Status R scope

Table 59-12 title has a font error

SuggestedRemedy

Correct font size in Table 59-12 title.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

Cl 59 SC 59.8 P 267 L 34 # 377
 Dawe, Piers Agilent

Comment Type E Comment Status R scope

Uneven font size in table title

SuggestedRemedy

Reapply style.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

Cl 59 SC 59.8 P 267 L 41 # 376
 Dawe, Piers Agilent

Comment Type T Comment Status R scope

I have not calculated the jitter delta numbers in table 59-12 in the same way as table 59-11.

SuggestedRemedy

I think the TJ entries, to 3 significant figures, should be

TP1 to TP2 0.334 UI 267 ps
 TP2 to TP3 0.119 UI 95 ps

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

P802.3ah Draft 2.1 Comments

Cl 59 SC 59.9 P 268 L 6 # 370

Dawe, Piers Agilent

Comment Type E Comment Status R scope

Broken-up quantity.

SuggestedRemedy

Nonbreaking space in '5 m'.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

Cl 59 SC 59.9 P 269 L 1 # 424

Lynskey, Eric UNH-IOL

Comment Type T Comment Status R scope

In previous clauses, such as 36 and 48, the test patterns were defined as being separated by a minimum IPG. Should we say something about the amount of idle between these frames?

SuggestedRemedy

Add a row to Table 59-14 that has a minimum IPG to be transmitted after the Frame Check Sequence. Also, possibly add a sentence near line 42 on page 268 that says that when performing a test, the frames should be sent with a minimum IPG (or possibly we say as close to minimum as you can).

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 59 SC 59.9 P 269 L 19 # 423

Lynskey, Eric UNH-IOL

Comment Type T Comment Status R scope

It will make it much easier to create the jitter test frames if you do not have to worry about the running disparity at the end of the first portion of MAC Client Data. For the random pattern test frame, it currently begins with a positive running disparity and ends with a positive running disparity (the original pattern defined in clause 36 started with a negative RD). If a code that flips disparity was then placed at the end and the second portion of MAC Client data repeated, it would begin negative and end negative. The opposite would be the case should the test pattern begin with a negative running disparity. Also, is there a reason the frame is so small?

SuggestedRemedy

Remove the requirement for running disparity to be positive following the first portion of the MAC client data by either defining frames that will transmit both disparities of the test patterns, or defining test patterns for which the disparity doesn't have an impact. For the first solution, you would add a character that flips disparity at the end of the pattern, such as 0x06. Possibly extend the frame so that more repetitions of the pattern can be transmitted.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 59 SC 59.9.1 P 268 L 44 # 371

Dawe, Piers Agilent

Comment Type E Comment Status R attn

Table 59-15 doesn't show broad spectral content and minimal peaking: it shows a payload. Sentence missing its .

SuggestedRemedy

Maybe:
The first, which emulates a random pattern with broad spectral content and minimal peaking, is shown in Table 59-15.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

P802.3ah Draft 2.1 Comments

Cl 59 SC 59.9.1 P268 L47 # 372

Dawe, Piers Agilent

Comment Type E Comment Status R scope

This pattern doesn't have areas of high and low density; the 8B/10B code sees to that.

SuggestedRemedy

'... and low transition density'.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

Cl 59 SC 59.9.1 P270 L1 # 420

Lynskey, Eric UNH-IOL

Comment Type T Comment Status R scope

Table 59-16 does not have 228 octets of data, as is shown in Table 59-14 and 59-15.

SuggestedRemedy

Add extra octets or change text so that the jitter test frame doesn't need all of them.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 59 SC 59.9.1 P270 L1 # 421

Lynskey, Eric UNH-IOL

Comment Type T Comment Status R scope

The random pattern test frame has very similar content to the frames defined in Clauses 36 and 48. The jitter test frame in Table 59-16 differs significantly from a previously defined jitter test frame for clause 48. Was this intentional? I recommend modifying test frame to be more similar to 48A.5. Also, is there a reason the size of the frame is 278 bytes? This could be increased. Also, by repeating the test pattern within the frame, such as is done in 48A.5, it allows you to ignore what the beginning running disparity of the pattern is, since both patterns will be present in the frame. This could make it somewhat easier when constructing these frames, so you don't have to worry about the disparity coming out of the first portion of the MAC Client data. The data listed here is effectively what CJPAT would be on a single lane.

SuggestedRemedy

Payload for jitter test frame:
 7E for 132 octets
 F4, EB, F4, EB, F4, FE, F4, AB
 B5 for 40 octets
 EB, F4, EB, F4, EB, F4, EB, F4
 7E for 132 octets
 F4, EB, F4, EB, F4, FE, F4, AB
 B5 for 40 octets
 EB, F4, EB, F4, EB, F4, EB, F4

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 59 SC 59.9.10 P272 L24 # 330

Dawe, Piers Agilent

Comment Type E Comment Status A

Bad cross reference.

SuggestedRemedy

58.8.9

Proposed Response Response Status C

ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 59 SC 59.9.2 P268 L 52 # 373
 Dawe, Piers Agilent

Comment Type T Comment Status R e-mail

Now we have some good boilerplate we should use it throughout the test procedures. We can let TIA decide what the instrument is called.

SuggestedRemedy

'The wavelength and spectral width (RMS) shall meet specifications according to ANSI/EIA/TIA-455-127 ...'
 (Similarly in clauses 58 and 60).

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 59 SC 59.9.2 P270 L 5 # 422
 Lynskey, Eric UNH-IOL

Comment Type T Comment Status R scope

In Table 59-16, the first row of the low transition density starts with 7E = 011110 0011, which is the 10-bit pattern with a starting negative running disparity. The note at the bottom of Table 59-14 says that the running disparity exiting the first portion of the MAC client data shall be positive.

SuggestedRemedy

Fix the 8B10B encoded binary column, starting with the positive 7E code of 10001 1100. This change will then propagate through other rows. The next three 7E rows need to be flipped. The 74 row will stay the same, although it may be wrong in the current table. Everything else stays the same until you hit the 7E following the A4. All of the 7E rows, beginning with this one need to be flipped.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 59 SC 59.9.4 P270 L 53 # 411
 Dawe, Piers Agilent

Comment Type E Comment Status A

Within idles? This pattern IS idles surely?

SuggestedRemedy

delete 'or within idles'?

Proposed Response Response Status C

ACCEPT IN PRINCIPLE. See 543

Cl 60 SC P288 L Table 60-1 # 99067
 Meir Bartur Optical Zonu

Comment Type TR Comment Status R D2.0 #853

Min Ch. Loss 5dB is too low (1x4 splitter is 7dB - and that is the min in IYU which is also too high IMHO)

SuggestedRemedy

Change to 10 dB

Proposed Response Response Status U

REJECT. This has been stable since at least D1.1. Committee should see technical arguments before making any change. Is the issue about APD? (pin?) overload vs. tolerancing the loss of the optical plant? Would need to change either Tx max or Rx max in step.

What would the MINIMUM loss of a 1x4 splitter be? Could it be as low as 5 dB if splitting were not even?

Should we follow ITU-T's 7 dB? Why? Attenuation range of ITU-T G.982 is 15 dB.

To make a change we would need a technical presentation discussing costs of overload against costs of measuring and tolerancing path losses and stocking finer quanta of attenuators in network construction. It may be that Ethernet puts more emphasis on simple installation ("plug and play").

Cl 60 SC P302 L 49 # 99068
 James, David JGG

Comment Type TR Comment Status A D2.0 #493

Spaces in variable names cause confusion.

SuggestedRemedy

Change all variable names to be runTogetherWords.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
 Comment downgraded to editorial, with the consent of the commenter, also with the understanding that the naming variable policy of IEEE will be discussed

P802.3ah Draft 2.1 Comments

Cl 60 SC 60.1.2 P287 L 10 # 533

Brand, Richard Nortel Networks

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

Ref comment 1002 which was accepted in Principle but has had no text change in the new draft. This layer model needs to change (see my comment 835 in regards to d 2.0).

SuggestedRemedy

Proposed Response Response Status **C**

ACCEPT IN PRINCIPLE.

Change 148 of p 288 to 'is generated by the PCS'

Ensure consistency of primitive names across clauses

Cl 60 SC 60.1.2 P289 L 8 # 99070

Thompson, Geoff Nortel

Comment Type **TR** Comment Status **A** D2.0 #1003

P2MP has violated layering and good standards description practice by specifying the MAC function in 2 separate layers with a significant portion of the function being specified in the PHY.

The 2 layers need to communicate with each other where there is no path for doing so. The difference between this somewhat bizarre method of specification that is contorted to try to fit into the existing Ethernet spec will be an ongoing problem because it does not match normal system partitioning. There will be a natural desire during implementation to put MAC functions in a MAC and PHY functions in the PHY. The fact that the actual design spec must be interpreted from its current rather strange form is an invitation to interoperability/compatibility problems.

SuggestedRemedy

Create a separate standard within 802.3 for EPON that frees EPON from the backward compatibility constraints of legacy Ethernet and allows for the standard to be structured and written appropriately. Rewrite so that the media access control actually takes place in an entirely new (non-CSMA/CD) TDMA MAC.

Proposed Response Response Status **U**

ACCEPT IN PRINCIPLE.

Referred to P2MP group. See response to comment number 1119.

The commenter does not here propose a change to the Clause 60-specific material, but to other clauses and to a diagram which is kept consistent with Figure 65-1.

Cl 60 SC 60.1.2 P289 L 8 # 99069

Thompson, Geoff Nortel

Comment Type **TR** Comment Status **A** D2.0 #1002

P2MP violates 802.3 layering as the laser control takes place in the new "MULTI-POINT MAC CONTROL" sublayer above the MAC in the ONU, the actual switching function takes place in the PHY. There is no provision in the existing 802.3 MAC or the GMII to pass this signal between those sublayers.

SuggestedRemedy

Create a separate standard within 802.3 for EPON that frees EPON from the backward compatibility constraints of legacy Ethernet and allows for the standard to be structured and written appropriately. Rewrite so that the media access control actually takes place in an entirely new (non-CSMA/CD) TDMA MAC.

A new non CSMA/CD GMI-like interface could then be freely specified with no impact on the existing 802.3 Standard.

Proposed Response Response Status **U**

ACCEPT IN PRINCIPLE.

Referred to P2MP group. See response to comment number 1119.

Cl 60 SC 60.1.3 P287 L 48-53 # 66

Shimon Muller Sun Microsystems, Inc

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

Reference terminology.

SuggestedRemedy

Replace "Clause 1.1" with "subclause 1.1".
 Replace "Clause 1.2" with "subclause 1.2".
 Replace "Clause 1.3" with "subclause 1.3".
 Replace "Clause 1.4" with "subclause 1.4".
 Replace "Clause 1.5" with "subclause 1.5".

Proposed Response Response Status **C**

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

P802.3ah Draft 2.1 Comments

Cl 60 SC 60.11.4.2 P313 L37 # 359

Dawe, Piers Agilent

Comment Type E Comment Status A D2.0

Last time (comment 124) we meant to add PICS items for stressed sensitivity to clauses 58 and 60 as well as 59.

SuggestedRemedy

Add them. I think they are conditionally mandatory depending on stressed sensitivity measurement PICS (which needs to be added) which is optional.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Ree related comment 358

Cl 60 SC 60.3.1 P290 L18 # 32

David, James JGG

Comment Type E Comment Status R scope

Excessive capitalization

SuggestedRemedy

Optical Splitter ==> Optical splitter

(Only capitalize first word of heading/title and proper nouns)

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

Cl 60 SC 60.3.1 P290 L18 # 31

David, James JGG

Comment Type E Comment Status R scope

Wrong figure font.

SuggestedRemedy

Should be 8-point Ariel.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

Cl 60 SC 60.4.1 P292 L40 # 426

Bemmel, Vincent Alloptic

Comment Type TR Comment Status R

Table 60-5
Extinction ration (min) 6 dB is too low

SuggestedRemedy

Change to 8.5 dB

Proposed Response Response Status U

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 60 SC 60.4.1 P292 L40 # 33

David, James JGG

Comment Type E Comment Status R

Bad table split; should be very thin on bottom of page.

SuggestedRemedy

Fix templates and overrides.

Proposed Response Response Status C

REJECT.

These issues will be addressed at a later stage when the complete document is assembled

Cl 60 SC 60.4.1 P293 L11 # 534

Brand, Richard Nortel Networks

Comment Type TR Comment Status R

I agree with Meir (comment # 858) that these values are too high. Ref the GPON doc G.984.3 that has just been consented in the ITU with support from the optical vendors like Zonu.

SuggestedRemedy

Proposed Response Response Status U

REJECT.

This comment is identical to #858 of D2.0 which was rejected.

This item was been debated at length and has been fairly stable since D1.3 (600 ns), and was chosen to allow cost effective designs. Committee should see technical arguments before making any change.

P802.3ah Draft 2.1 Comments

CI 60 SC 60.7 P300 L20 # 379

Dawe, Piers Agilent

Comment Type T Comment Status R scope

The jitter sections need to be tied together and have their terminology aligned.

SuggestedRemedy

Consider if DJ should be replaced by W here.
 Add sentence saying that 'W is similar but not necessarily identical to deterministic jitter (DJ)'.
 Refer to 60.8.12 and maybe 59.9.12, note that there are other jitter measurement methods.
 Add sentence 'Jitter at TP2 or TP3 is defined with a receiver of the same bandwidth as specified for the transmitted eye.'
 Consider if 60.8.12 should refer to 59.9.12 and/or 59.9.13.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

CI 60 SC 60.7 P300 L48 # 545

Dawe, Piers Agilent

Comment Type E Comment Status A

Per resolution to D2.0 comment 493.

SuggestedRemedy

In 60.7 eqn (60-2), Insert subscript 10 after 'log'.

Proposed Response Response Status C

ACCEPT.

CI 60 SC 60.8.13.1.1 P305 L1 # 496

Booth, Brad Intel

Comment Type E Comment Status R scope

Figure is in middle of paragraph and needs to use smaller fonts and thinner lines.

SuggestedRemedy

Change frame anchor properties, and edit figure to have thinner lines and smaller fonts.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

CI 60 SC 60.8.2 P302 L23 # 378

Dawe, Piers Agilent

Comment Type T Comment Status R scope

Seems odd to say that two different epsilon values both give "below 2 dB" chromatic dispersion penalty.

SuggestedRemedy

I guess it's safe to reduce the second one to 'less than 1.5 dB' to show we have thought about it.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

CI 60 SC 60.8.4 P302 L36 # 544

Dawe, Piers Agilent

Comment Type E Comment Status R scope

Broken-up quantity

SuggestedRemedy

Use nonbreaking space in '20 dB'.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

These changes will be made in preparation for Sponsor ballot

CI 60 SC 60.8.4 P302 L38 # 543

Dawe, Piers Agilent

Comment Type E Comment Status A D2.0

Per D2.0 comment 1113, 'Suggest that 'I2' should read '/I2/ ordered_set (see 36.2.4.12)'. See comment. ACCEPT IN PRINCIPLE. Also, change 'This is defined' to 'The /I2/ ordered_set is defined'. Replace 'or 110000 0101 011011 0101' to 'within idles'.

SuggestedRemedy

Agree common text for 59.9.4 and 60.8.4.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Change I2 to read '/I2/ ordered_set (see 36.2.4.12)'
 Also, change 'This is defined' to 'The /I2/ ordered_set is defined'. Replace 'or 110000 0101 011011 0101' to 'within idles'.
 In 59.9.4 delete 'or' before 'within idles'. Bring 60.8.4 in line with 59.9.4

P802.3ah Draft 2.1 Comments

Cl 60 SC Table 60-5 P 294 L 38 # 99071
 Meir Bartur Optical Zonu
 Comment Type TR Comment Status R D2.0 #855
 Average launch power (min) -1dBm for the ONU is too high. FSAN is -2dBm
 SuggestedRemedy
 Change to -2dBm
 Proposed Response Response Status U
 REJECT.
 This has been -1 since D1.414, and a lower transmit power would mean a more demanding sensitivity. Committee should see technical arguments, bearing receiver sensitivity in mind, before making any change.

Cl 60 SC Table 60-5 P 295 L 12,13 # 99074
 Meir Bartur Optical Zonu
 Comment Type TR Comment Status R D2.0 #858
 Ton Toff 512nSec each IS TOO MUCH
 SuggestedRemedy
 Change to 50nSec
 Proposed Response Response Status U
 REJECT.
 This item was been debated at length and has been fairly stable since D1.3 (600 ns), and was chosen to allow cost effective designs. Committee should see technical arguments before making any change.

Cl 60 SC Table 60-5 P 294 L 39 # 99072
 Meir Bartur Optical Zonu
 Comment Type TR Comment Status R D2.0 #856
 Average launch power of OFF transmitter (max) for the OLT -39 dBm is astrange requirement - not necessary
 SuggestedRemedy
 Remove
 Proposed Response Response Status U
 REJECT.
 This item is included for consistency with other continuously operating optical transmitters within 802.3. It stops the receiver seeing an unintended signal from an "off" OLT and does not seem hard to meet for a continuous-type transmitter.

Cl 61 SC P 341 L 19 # 99043
 James, David JGG
 Comment Type TR Comment Status A D2.0 #504
 Greek letters should not be included in titles, subclause, figure, or tables. The text in the TOC, LOF, or LOT will be incorrect and fixes will be error prone.
 SuggestedRemedy
 Change symbols, perhaps to:
 gamma, alpha, beta.
 Proposed Response Response Status U
 ACCEPT IN PRINCIPLE.
 The "alpha(beta)"-interface and "gamma"-interface are well-known fundamental concepts in the xDSL world. We've deliberately chosen to keep these concepts and their original notation in our draft to make the relation with existing xDSL standards clear to the reader. The IEEE Editorial Staff will be asked to advise as to the proper course of action.

Cl 60 SC Table 60-5 P 294 L 41 # 99073
 Meir Bartur Optical Zonu
 Comment Type TR Comment Status R D2.0 #857
 Extinction ratio (min) 6dB (4/1) is too low
 SuggestedRemedy
 Change to 10 like ITU
 Proposed Response Response Status U
 REJECT.
 This has been stable since D1.1, and was chosen to be cost effective for direct modulation. Committee should see technical arguments before making any change.
 If SONET used 8.2 a long time ago, 10 would be out of line.

The commenter is unsatisfied with this resonse, but responded that the following remedy would be acceptable to him:
 "The WG editors will work with the IEEE Editorial Staff and the commenter to determine how these characters can be formatted so that they will be automatically incorporated into the TOC without manual intervention."

P802.3ah Draft 2.1 Comments

Cl 61 SC 3.8.7.1 P361 L18 # 327

Langston, Daun Metanoia

Comment Type TR Comment Status R

As of Draft 2.1, 10PASS-TS no longer supports 8.625 kHz tone spacing. The benefits of using broader tone spacing are well known and have been presented to the Task Force in the discussion of comments #827/D1.1, #580/D1.2, #605/D1.414, #622/D2.0, #1244/D2.0 and #824/D2.0. However, the disadvantage of having both tone spacings mandatory in the draft was deemed to outweigh the benefits of having 8.625 kHz tone spacing. In order to allow different vendors to provide 8.625 kHz tone spacing as a proprietary but interoperable extension, it is proposed to reserve a codepoint in the 10PASS-TS handshake tree to exchange and activate this capability.

SuggestedRemedy

Define bit 5 of 10PASS-TS NPar(2) Octet 1 as "8.625 kHz capability bit". Attach a footnote "The specification and use of 8.625 kHz tone spacing is outside the scope of this standard."

Proposed Response Response Status C

REJECT.

MOTION TO ACCEPT (Eckert/Fanfoni)
Approve: 5 Don't Approve: 10 Abstain: 1 (FAIL)

MOTION TO REJECT (Simon/Cravens)
Approve: 10 Don't Approve: 4 Abstain: 2 (FAIL)

There was no consensus in the Sub Task Force to make a change to the draft at this time.

To be discussed with comment #473 (TR).
Reserving handshake codepoints for features outside the scope of the standard has already been done to allow the use of G.shdsl regenerators and G.shdsl diagnostic mode.

Cl 61 SC 3.8.7.2 P362 L11 # 328

Langston, Daun Metanoia

Comment Type TR Comment Status D

Throughout the duration of the EFM project, several presentations have proposed to add trellis coding to the 10PASS-TS specification. A comment to this effect was rejected at the Ancona meeting (#884/D2.0). In order to allow different vendors to provide trellis coding as a proprietary but interoperable extension, it is proposed to reserve a codepoint in the 10PASS-TS handshake tree to exchange and activate this capability.

SuggestedRemedy

Define bit 3 of 10PASS-TS SPar(2) Octet 2 as "Trellis coding capability bit". Attach a footnote "If set, a subsequent 1-octet NPar(3) field is used to transmit the maximum size of a contiguous block of tones, starting from the highest frequency, that can be trellis-coded (bits 1-6 x 64 tones). The specification and use of trellis coding for 10PASS-TS PHYs is outside the scope of this standard."

Proposed Response Response Status Z

WITHDRAWN. PROPOSED REJECT.

The comment is made against material that was previously approved and is unchanged in this draft.
See also comment #418.

Cl 61 SC 61 P317 L1 # 459

Tom Mathey Independent

Comment Type T Comment Status R

Resolution of D2.0 comment #1237 (page 237 in final comments) was that bits for PCS link status were to be added to both transmit and receive paths for local device and link partner. This commenter can not find such assignments. They seem to be completely missing.

SuggestedRemedy

Add ability to transport local device PCS link status to link partner on transmit path.
Add ability to transport link partner PCS link status to local device on receive path.

Proposed Response Response Status C

REJECT.

The missing signals can be found in Table 61-8 "Additional alpha(beta)-interface signals". They are "local_TC_freewheeling", "local_TC_out_of_sync", "remote_TC_freewheeling" and "remote_TC_out_of_sync".

P802.3ah Draft 2.1 Comments

Cl 61 SC 61 P317 L1 # 458

Tom Mathey Independent

Comment Type E Comment Status R

At various places in this clause, the text "frame" vs "packet" need to be corrected.

SuggestedRemedy

Proposed Response Response Status C

REJECT.

The Editor has attempted to locate all inaccurate instances of "frame" and "packet" in resolution of comments #1190/D2.0 and #268/D2.0. A more specific suggested remedy is required to correct further errors.

Cl 61 SC 61.1 P318 L34 # 190

Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

Wrong cross ref

SuggestedRemedy

Unidirectional operation is described in clause 57.2.12

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.1 P318 L34 # 133

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status D

The word "Clause" before "57.2.9" is inappropriate.

SuggestedRemedy

Delete the word "Clause".

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

Cl 61 SC 61.1 P318 L35 # 191

Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

Indicator bits will be used for 10PASS-TS only (2BASE-TL uses dedicated EOC messages).

SuggestedRemedy

Replace 'indicator bits' by 'indicator bits/EOC message'

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Replace "indicator bits" with "PMA/PMD specific signaling"

POSTPONED TO DISCUSSION OF #85.

PROPOSED REJECT.

The use of indicator bits is specified in ITU-T Recommendation G.991.2, section 7.1.2.5, incorporated by reference in the 2BASE-TL PMA specification.

Cl 61 SC 61.1 P318 L4142 # 535

Brand, Richard Nortel Networks

Comment Type E Comment Status R

sublayer needs a hyphen

SuggestedRemedy

Proposed Response Response Status C

REJECT.

The spelling of the word "sublayer" in this draft (without hyphen) is consistent with the spelling used in IEEE Std 802.3-2002.

Cl 61 SC 61.1 P320 L34 # 99044

Thompson, Geoff Nortel

Comment Type TR Comment Status A

D2.0 #1008

This paragraph is implementation fluff not necessary to the specification.

SuggestedRemedy

Delete lines 33-36

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

As 61.1 is an overview section (see subclause heading), it may contain some information that is not strictly necessary to the specification.

The sentence "In this case [...] establish a link." is indeed implementation fluff and shall be removed.

The sentence "The CO and CPE [...] physical device." becomes the last sentence of the fifth paragraph.

P802.3ah Draft 2.1 Comments

Cl 61 SC 61.1.1 P320 L 45 # 99045

Thompson, Geoff Nortel

Comment Type TR Comment Status A D2.0 #1009

I don't think the reference to 100BASE-T4 adds value without more explanation than is offered here. If support for code bonding of multiple pairs is in here it should be mentioned also.

SuggestedRemedy

Delete reference to 100BASE-T4.
Redo so that it actually just a "scope"
E.g. specifies a PHY from MII to MDI that is based on blah, blah. It includes DSP coding stolen from blah blah and common initialization mechanisms used by both PHYs

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
Replace subclause by following text:
"This clause defines the Physical Coding Sublayer (PCS) for 2BASE-TL and 10PASS-TS, which has similarities to other 802.3 PCS types but also differs since new sublayers are added within the PCS sublayer to accommodate the operation of Ethernet over access network copper channels. This clause also defines the common startup and handshaking mechanism used by both PHYs."

Cl 61 SC 61.1.3 P319 L 19 # 318

Beili, Edward Actelis Networks

Comment Type T Comment Status R

In Figure 61-1, Clause 61 PCS at the left 2BaseTL PHY References VDSL spec G.993.1. In addition PMI aggregation is shown in 10PassTS Phy while it is more characteristic of 2BaseTL.

SuggestedRemedy

Move MAC-PHY Rate Matching/PMI Aggregation/TPS-TC rectangle to the 2BaseTL PHY.
Move G.993.1 reference to 10PassTS PMA/PMD.

Proposed Response Response Status C

REJECT.
The Clause 61 PCS is common to 2BASE-TL and 10PASS-TS. It references ITU-T Recommendation G.993.1 for the specification of the alpha(beta)-interface and the gamma-interface, which are xDSL-flavor independent. There is no reason to consider any of the functions within the PCS, other than the CRC, to be more characteristic of a specific PMA/PMD type.
See also comment #192.

Cl 61 SC 61.1.3 P319 L 23 # 316

Beili, Edward Actelis Networks

Comment Type T Comment Status R

In Figures 61-1, 61-2 PMI Aggregation function is depicted yet no PMI layer/object is shown. In Figures 61-3 61-4-2 and 61-5-4 it looks like PMI is an entity below PMA/PMD. Also PMI is defined as Physical Medium Independent in Abbreviations and Figure 61-1 and as PMA/PMD Instance in 61.1.5.3 (page 322 line 40). The Instance is probably a better term than Independent, also I couldn't find any use of PMI in the original 802.3-2002.

SuggestedRemedy

Define PMI as PMA/PMD Instance in Abbreviations and Figure 61-1. Draw PMI container around PMA/PMD in Figures 61-1 and 61-2. Replace PMI-x with Pair-x (or Copper Pair-x or Voice Grade Copper Pair or whatever) in Figures 61-3, 61-4-2 and 61-5-4.

Proposed Response Response Status C

REJECT.
Approve: 3 (incl. Editor) Don't Approve: 1 Abstain: 9
The PMI is normatively defined as "Physical Medium Independent" in subclause 1.5 of IEEE Std 802.3-2002.
The words in parentheses on page 322 / line 40 do not overrule this definition; they merely indicate that the PMI Aggregation Function aggregates everything between the PMI and the gamma-interface, inspite of what the name might suggest.
The Editor agrees that a different name might be more descriptive, but is reluctant to change the name at this late stage.

Cl 61 SC 61.1.3 P319 L 9 # 497

Booth, Brad Intel

Comment Type E Comment Status R

Figure is very hard to read and contains too much information.

SuggestedRemedy

Insert other figures to explain the nuances of Clauses 61, 62 and 63 relative to other standards. This figure should show the relationship of this clause to the ISO/IEC OSI reference model and the LAN CSMA/CD layers.

Proposed Response Response Status C

REJECT.
The relationship of Clause 61 to the ISO/IEC OSI reference model and the LAN CSMA/CD layers is adequately shown by Figure 56-1. It is the purpose of Figure 61-1 to show the relation of Clause 61 to other standards. It uses the same formatting as Figure 1-1 in IEEE Std 802.3-2002, as agreed in resolution of comment #1477/D1.414.

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Cl 61 SC 61.1.4.1 P319, 320 L44, 10-11 # 67
 Shimon Muller Sun Microsystems, Inc

Comment Type E Comment Status A

In this clause both terms "Rate Adaptation" and "Rate Matching" are being used to describe the same function.

SuggestedRemedy

Search the entire clause and reconcile the text to use the same term across the board. My preference would be "Rate Adaptation".

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
 Figure 61-1, subclause heading 61.1.4.1.1 and 61.2.1 all use the term "MAC-PHY Rate Matching".
 Replace following instances of "MAC-PHY Rate Adaptation" or "Rate Adaptation" by "MAC-PHY Rate Matching":
 -61.4.1.4, page 319, line 43-44
 -Figure 61-2 (3 times)
 In 61.6, replace "PHY-MAC Rate Matching" by "MAC-PHY Rate Matching".

Cl 61 SC 61.1.4.1. P320 L17 # 194
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

In figure 61-2 64B/65B encapsulation was renamed

SuggestedRemedy

64/65-octet encapsulation

Proposed Response Response Status C

ACCEPT.
 See also comment #95.

Cl 61 SC 61.1.4.1.1 P320, 321 L48-51, 1-3 # 68
 Shimon Muller Sun Microsystems, Inc

Comment Type TR Comment Status R

The main problem that I have with this subclause is that it does not adequately address the issue of how MAC-PHY rate matching is supported in implementations that have MACs that are not capable of half duplex operation. Since half duplex operation is no longer mandatory for the Ethernet MAC, it is important to provide the necessary guidance to implementors that chose to implement their MAC without this capability. There are some other minor problems with the text in this subclause, primarily related to its structure and style (see SuggestedRemedy).

SuggestedRemedy

Change the text in subclause 61.1.4.1.1 to read as follows:
 "The 10PASS-TS and 2BASE-TL PCS is specified to work with a 100Mb/s MAC operating in both the half duplex and full duplex modes, using the MII as defined in Clause 22. Depending on the MAC's capabilities the Rate Matching function is defined as follows:

a) A MAC that supports half duplex operation is configured for the half duplex mode, and the PCS matches the MAC's data rate to that of the medium using the deference process as defined in Clause 4.

Prior to transmission, the MAC checks CRS and does not transmit another frame as long as CRS is asserted. In order to prevent its buffer from overflowing, the PCS keeps CRS asserted until it has enough space to accept the next frame from the MAC. Once CRS is deasserted, the MAC sends the next frame to the PCS at the rate of 100Mb/s. The MAC-PHY Rate Matching function strips the Preamble and SFD fields from the MAC frame, and forwards the resulting data frame to the PMI Aggregation function or to the TPS-TC sublayer. The PCS always forces the COL signal to logic zero.

On receive, the PCS prepends the Preamble and SFD fields to the data frame received from the medium, and sends it to the MAC at the rate of 100Mb/s.

It is important to note that Clause 4 does not prohibit the MAC from simultaneously receiving and transmitting frames when it is configured for half duplex operation. However, it is recognized that some older MAC implementations may not be capable of doing that. In order to allow for interoperability with these MACs, the PCS has an operating mode where the MAC's transmission is deferred using CRS when received data is sent from the PHY to the MAC. This gives receive frames priority over transmit frames, to ensure that the receive buffer does not overflow. This mode of operation is defined in Figure 61-8.

The MAC-PHY Rate Matching function may cause excessive deferrals to be counted in the excessive deferral counter (see 30.3.1.1.20).

The precise definition of the MAC-PHY Rate Matching function is provided in subclause 61.2.1.

b) A MAC that does not support half duplex operation may be configured for the full duplex mode, and the rate matching function can be accomplished by using the IFS Stretch Mode as defined in Clause 4. In this mode of operation, the MAC lowers it own average data rate (with frame granularity) by extending the minimum inter-frame gap (IPG) with a number of octets that is proportional to the size of the previously transmitted frame, including the

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Preamble.

The IFS Stretch Mode requires that a management entity provide a parameter (ifsStretchRatio) which is programmed into the MAC. This parameter determines the number of octets in a frame that require one octet of IPG extension, and its value is determined using the following formula:

$$\text{ifsStretchRatio} = \text{PHY_Speed} / (\text{MAC_Speed} - \text{PHY_Speed})$$

The precise definition of the MAC-PHY Rate Matching function using the IFS Stretch Mode is provided in subclauses 4.2.7.2 and 4.2.8.

Note---For the purposes of this specification it is recommended that implementors consider the inverse value of the ifsStretchRatio parameter, namely the number of IPG extension octets required for one octet in a frame, including the Preamble.

Note---If at any time the MAC is configured such that its average data rate is faster than the data rate of the PHY, the PHY's data buffer may overflow and it's behavior is undefined.

It is also important to note that the two mechanisms for the MAC-PHY Rate Matching function described above are fully compatible. In other words, implementations that use a PHY described in a) will interoperate with a MAC described in b)."

Proposed Response *Response Status* **U**

REJECT.

The current method for MAC-PHY Rate Matching works with existing 100 Mb/s MACs. The specification of the PCS does not preclude the use of IPG stretching with MACs that support this feature. The existing text recognizes that IPG stretch may be used for MAC-PHY Rate Matching (see NOTE).

Cl 61 **SC 61.1.4.1.4** **P 322** **L 1** # **134**
Beck, Michael Alcatel Bell nv

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

Editing mistake in implementation of comment #270/D2.0. The sentence "The physical xDSL PMIs in Clauses 62 and 63 each have their own management channel that operates per loop (EoC/voc/IB)." should have been replaced by the preceding sentence.

SuggestedRemedy

Remove redundant sentence "The physical xDSL PMIs in Clauses 62 and 63 each have their own management channel that operates per loop (EoC/voc/IB)."

Proposed Response *Response Status* **Z**

WITHDRAWN. PROPOSED ACCEPT.

Cl 61 **SC 61.1.4.1.4** **P 322** **L 3** # **86**
Squire, Matt Hatteras Networks

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

The sentence says the PMI OAM channel is used for "aggregation". I think G994.1 is used for aggregation, but I don't know what parts of aggregation used EOC/IB.

SuggestedRemedy

Eliminate "aggregation" from the sentence.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove the end of 61.1.4.1.4 from "The physical xDSL PMIs..." on page 322.

Cl 61 **SC 61.1.5.3.1** **P 323** **L 6** # **69**
Shimon Muller Sun Microsystems, Inc

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

Spelling.

SuggestedRemedy

Replace "independantly" with "independently".

Proposed Response *Response Status* **C**

REJECT.

Cl 61 **SC 61.1.5.3.2** **P 324** **L 39** # **196**
Horvat, Michael Infineon Technologies

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

In Table 61-1 contents of PMI_Available_register is given in LSB left, MSB right.

SuggestedRemedy

Add notes: LSB left, MSB right (this also applies to tables 61-2 to 61-6)

Proposed Response *Response Status* **C**

REJECT.

The Editor sees no reason why reading the bits one way or the other would make any difference.

Cl 61 **SC 61.1.5.3.2.** **P 324** **L 4** # **195**
Horvat, Michael Infineon Technologies

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

2 full stops

SuggestedRemedy

remove 1

Proposed Response *Response Status* **C**

REJECT.

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Cl 61 SC 61.2.1.1 P327 L 22-24 # 70
 Shimon Muller Sun Microsystems, Inc

Comment Type TR Comment Status A

This paragraph seems to mandate a store-and-forward implementation in the PHY. I do not believe this is absolutely necessary for a compliant implementation. Furthermore, this requirement cannot be enforced (i.e. it is not observable on the exposed interfaces).

SuggestedRemedy

1. Change this paragraph to read as follows:
 "The PHY shall prepend the Preamble and the SFD fields to a received frame before sending it to the MAC."
2. Change the RM-3 PICS entry on page 403 to reflect the above change.

Proposed Response Response Status C
 ACCEPT.

Cl 61 SC 61.2.1.1 P327 L 25-27 # 71
 Shimon Muller Sun Microsystems, Inc

Comment Type T Comment Status R

I do not believe that it is appropriate to mandate support for a mode of operation that has been provided for implementations whose time has passed. Instead, I would suggest that we "strongly recommend" support for it.

SuggestedRemedy

1. Change this paragraph to read as follows:
 "It is strongly recommended that a PHY implement support for a mode of operation where it does not send data to the MAC while the MAC is sending data to the PHY. This will allow it to interoperate with older implementations of MACs that are not capable of simultaneously receiving and transmitting frames when they are configured for half duplex operation."
2. Delete the RM-4 PICS entry on page 403 to reflect the above change.

Proposed Response Response Status C
 REJECT.
 If the spec 'strongly recommends' a certain functionality then it needs to define this functionality. It is much simpler and less confusing to make this 'strongly recommended' behaviour mandatory.

Cl 61 SC 61.2.1.1 P327 L 29 # 197
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

In case of PAF not all TC_synchronized signals have to be true.

SuggestedRemedy

Modify the sentence in a way that fragments shall not be forwarded to a dedicated TPS-TC if this link-specific TC_synchronized signal is false.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
 Change sentence to:
 "If the PAF is disabled or not present, transmit frames shall not be forwarded to the TPS-TC unless TC_synchronized is true for the whole frame. If the PAF is enabled, transmit fragments shall not be forwarded from the PAF to a TPS-TC unless the TC_synchronized status of that TPS-TC instance is true for the whole fragment."

Cl 61 SC 61.2.1.1 P327 L 32 # 198
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

Frame has only to be completely discarded if all TC_synchronized signals are false.

SuggestedRemedy

Change note accordingly

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
 Change NOTE to:
 "This implies that in the absence of an active PAF, frames being transmitted over the MII when TC_synchronized becomes true are never forwarded to the TPS-TC. A frame being transmitted over the MII when TC_synchronized becomes false is aborted."

Cl 61 SC 61.2.1.2.2 P327 L 48 # 199
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

Reference to 61.2.3.4 is missing

SuggestedRemedy

add reference

Proposed Response Response Status C

ACCEPT.

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Cl 61 SC 61.2.1.3.2 P328 L 20 # 72

Shimon Muller Sun Microsystems, Inc

Comment Type T Comment Status A

This variable should also be true when the MAC is configured in the full duplex mode.

SuggestedRemedy

Change the description of this variable to read as follows:
 "True if the MAC is capable of simultaneously transmitting and receiving in the half duplex mode, or if the MAC is configured in the full duplex mode."

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.1.3.2 P328 L 21-22 # 73

Shimon Muller Sun Microsystems, Inc

Comment Type TR Comment Status A

This variable and its description make no sense whatsoever. The MAC never "infers a collision when TX_EN and CRS are both true simultaneously".
 Furthermore, based on its usage in the two relevant state machines, I do not believe that this variable is needed.

SuggestedRemedy

See my separate two comments related to the usage of this variable in the state machines. If both of them are accepted, then delete this variable.
 Otherwise, provide a decent description for the variable: justify why it is needed, what it does, who sets it, etc.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
 Replace text "True if the MAC infers a collision when TX_EN and CRS are both true simultaneously."
 with "True if a reduced-pin MAC-PHY interface is present that infers a collision when TX_EN and CRS are both true simultaneously."

Cl 61 SC 61.2.1.3.4 P329 L 22-54 # 74

Shimon Muller Sun Microsystems, Inc

Comment Type TR Comment Status R

This state machine is more complicated than necessary.
 I would like to respectfully suggest the following simplifications:
 1. The only thing the crs_and_tx_en_infer_col variable does is delay the setting of crs_tx to true until TX_EN becomes false only for "some cases" (whatever they might be). However, there is no harm in ALWAYS having this delay. The MAC only "looks" at CRS after it finished transmitting the frame. Also, keep in mind that all state machine transitions and actions are immediate and instantaneous (i.e. there is no clock or other time delay involved).
 2. The "IF" statement in state TX_BUFFER_NOT_EMPTY is not needed. If tx_buffer_available is true when TX_EN becomes false, a direct transition can be made to state IDLE.

SuggestedRemedy

1. Delete all actions in state TX_EN_ACTIVE.
2. Delete the "IF" statement in state TX_BUFFER_NOT_EMPTY. The action in this state becomes: crs_tx <= TRUE
3. Add a transition from state TX_EN_ACTIVE to state IDLE with the following condition: (TX_EN = FALSE) * (tx_buffer_available = TRUE).
4. Change current condition for the transition from state TX_EN_ACTIVE to state TX_BUFFER_NOT_EMPTY to be: (TX_EN = FALSE) * (tx_buffer_available = FALSE).

Proposed Response Response Status U

REJECT.
 The current specification is correct; the suggested changes 2-4 seem to be cosmetic only. The actions in state TX_EN_ACTIVE must not be removed; if a reduced pin interface is not present it is necessary to drive crs_tx to avoid 'carrier sense errors' as defined in 30.3.1.1.13. 'carrier sense errors' do not occur with reduced pin interfaces as the interface drives crs when tx_en is active.

Cl 61 SC 61.2.1.3.4 P330 L 1-40 # 75

Shimon Muller Sun Microsystems, Inc

Comment Type TR Comment Status R

See my comment regarding the crs_and_tx_en_infer_col variable for the transmit state machine.

SuggestedRemedy

Delete all actions in state TX_EN_ACTIVE.

Proposed Response Response Status C

REJECT.
 See resolution of comment #74. The actions in state TX_EN_ACTIVE must not be removed; if a reduced pin interface is not present it is necessary to drive crs_tx to avoid 'carrier sense errors' as defined in 30.3.1.1.13. 'carrier sense errors' do not occur with reduced pin interfaces as the interface drives crs when tx_en is active.

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Cl 61 SC 61.2.2 P330 L46 # 324
 Beili, Edward Actelis Networks

Comment Type T Comment Status A

In PAF specification, PHY is mentioned instead of PMI or PMA/PMD: "PMI Aggregation allows one or more PHYs to be combined...". Figure 61-1 in section 61.1.3 specifically shows that EFM PHY is a combination of PCS (including PAF) and PMA/PMDs.

SuggestedRemedy

Replace the word "PHY" with the word "PMI" or "PMA/PMD" in the context of PMI Aggregation, throughout clause 61 (lines 36, 38 on page 321, line 46 on page 330, lines 1,2 on page 331 etc.).

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Use "PMA/PMD"

Cl 61 SC 61.2.2.3 P332 L38 # 217
 Horvat, Michael Infineon Technologies

Comment Type TR Comment Status A

Link loss handling missing

SuggestedRemedy

PMI may only be selected if TC_synchronized of this link is TRUE and no defects (TC not sync'd) from this link are reported from the far end.

Might use signal PCS_link_state

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Change a) item to:

a) Select an active PMI (i.e., one with PCS_link_state asserted) for the next transmission

Cl 61 SC 61.2.2.3 P332 L41 # 200
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

Increment might be not specific enough

SuggestedRemedy

increment by one (modulo 2^14)

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.2.4.1 P333 L13 # 201
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

Definition of "split horizon" does not only apply to "expected sequence number", but to all bigger/smaller-than-comparisons, e.g. to find out what the smallest sequence number is.

SuggestedRemedy

Move the definition to 61.2.2.4.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Move the text from "Note that..." on line 12 to the end of the paragraph up to form a new paragraph at the end of 61.2.2.4.

Cl 61 SC 61.2.2.4.2 P333 L21 # 202
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

For correct working at least one TC_synchronized signal has to be true.

SuggestedRemedy

Change sentence to: This state is entered when at least one TC_synchronized becomes TRUE

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Change to "when at least one PCS_link_state is asserted"

Cl 61 SC 61.2.2.4.3 P333 L36 # 203
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

wrong crossref.

SuggestedRemedy

change to 61.2.2.5.

Proposed Response Response Status C

ACCEPT.

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CI 61 SC 61.2.2.4.3 P333 L36 # 540
 Cravens, George Mindspeed

Comment Type E Comment Status A

Variable value is undefined. maxDifferentialDelay is discussed, but never explicitly defined. (Although a value is assigned in the PICS (pg. 405 L10), but without the variable name, and pointing to a subclause (61.2.2.6) that does not mention the variable.)

SuggestedRemedy

Either assign a value to the variable in the text in 61.2.2.5 (preferred for readability), or at least use the variable name in the PICS line so that the variable value can be found when doing a textg search.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

See comment #82

CI 61 SC 61.2.2.4.3 P333 L36 # 539
 Cravens, George Mindspeed

Comment Type E Comment Status A

Cross Reference is incorrect. Refers to 61.2.2.6 for maxDifferentialDelay, and should be 61.2.2.5

SuggestedRemedy

Fix cross reference

Proposed Response Response Status C
 ACCEPT.

CI 61 SC 61.2.2.4.4 P333 L48 # 204
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A
 crossref. can be concretized

SuggestedRemedy

change to 61.2.2.7.2.

Proposed Response Response Status C
 ACCEPT.

CI 61 SC 61.2.2.4.4 P333 L51 # 205
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

crossref. can be concretized

SuggestedRemedy

change to 61.2.2.7.3.

Proposed Response Response Status C
 ACCEPT.

CI 61 SC 61.2.2.4.4 P334 L2 # 208
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

State machine in figure 61-11 does not have a reset condition.

SuggestedRemedy

Add reset condition (all TC-synchronized signals FALSE).

Proposed Response Response Status C
 ACCEPT.

CI 61 SC 61.2.2.4.4 P334 L29 # 206
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A
 wrong crossref. in box "error handling"

SuggestedRemedy

change to 61.2.2.7.2.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 See comment #92.

CI 61 SC 61.2.2.4.4 P334 L38 # 207
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A
 wrong crossref. in box "fragment error"

SuggestedRemedy

change to 61.2.2.7.3.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 See comment #92.

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Cl 61 SC 61.2.2.4.4 P334 L44 # 81

Squire, Matt Hatteras Networks

Comment Type E Comment Status A

The sentence seems out of place. First we've been trying to keep the numeric values of restrictions to one place. Second, it seems like it should go in a different section where maxDifferentialDelay is talked about.

SuggestedRemedy

Delete sentence or move it to the end of 61.2.2.5.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Delete sentence.

Add note after first paragraph in 61.2.2.5:

NOTE---These restrictions ensure that buffer sizes for receivers of 2^14 bits per PMI are sufficient.

Cl 61 SC 61.2.2.5 P L # 82

Squire, Matt Hatteras Networks

Comment Type TR Comment Status A

During Draft2.0, I had a comment which basically said that (a) we should pull the numeric values of the various constants into a simple table, and (b) we shouldn't duplicate the constants in the text. I think that comment was partially fulfilled in that some references to constants were removed, and things were better centralized. However, the tables were never introduced as the source of all constants. For example, maxDifferentialDelay values were removed from various places, but the actual value never put back in.

SuggestedRemedy

1) Add table at end of 61.2.2.5

	10PASS-TS	2BASE-TL
maxDifferentialDelay	4	4
maxSpeedRatio	4	4

2) Add table to the end of 61.2.2.6:

	10PASS-TS	2BASE-TL
maxFragmentSize	512	512
minFragmentSize	64	64

3) Eliminate the 64/512 constants from 61.2.2.6 sentences (P335, L37/L38) as these will now be in the table.

4)

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Add tables, with maxDifferentialDelay equal to 15,000 bit times as shown on page 405. As all values are identical for 10PASS-TS and 2BASE-TL, only one "value" column is needed.

Cl 61 SC 61.2.2.5 P335 L19 # 209

Horvat, Michael Infineon Technologies

Comment Type T Comment Status R

Specify maxDifferentialDelay in bit times.

SuggestedRemedy

Add a value, e.g. 16384 bit times.

Proposed Response Response Status C

REJECT.

See #82

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Cl 61 SC 61.2.2.5 P335 L21 # 83
Squire, Matt Hatteras Networks

Comment Type T Comment Status D

The "Note that a max speed ratio of 4 may only be used if the latency is controlled to meet the restriction (a)" is misleading as restriction (a) is always supposed to be met.

SuggestedRemedy

Eliminate the "Note that..." sentence.

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

Cl 61 SC 61.2.2.5 P335 L21 # 210
Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

Specify maxSpeedRatio

SuggestedRemedy

Add a value of 4 to maxSpeedRatio

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See #82

Cl 61 SC 61.2.2.5 P335 L6 # 84
Squire, Matt Hatteras Networks

Comment Type E Comment Status D

The footnote, on the word interleaving, should probably be on the word "functions" as the footnote talks about interleaving and error correction.

SuggestedRemedy

Move footnote or change it to only talk about interleaving.

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT IN PRINCIPLE.

Move footnote to "functions". Also, on following line, change comma after "latency" to semicolon.

Cl 61 SC 61.2.2.6 P335 L24 # 98
Beck, Michael Alcatel Bell nv

Comment Type E Comment Status D

Excessive capitalization in title.

SuggestedRemedy

Change title to "PHY PMI Aggregation transmit function restrictions".

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

Cl 61 SC 61.2.2.7 P335 L49 # 211
Horvat, Michael Infineon Technologies

Comment Type T Comment Status R

Not clear whether in case of errors a garbage frame or the beginning of the fragment (according to page 336, line 36) with RX_ER asserted shall be sent over MII.

Not clear whether RX_ER shall be asserted during transmission of a garbage frame over MII.

SuggestedRemedy

Always send a garbage frame with RX_ER asserted

Proposed Response Response Status C

REJECT.

The text in question says that a garbage frame shall not be sent when the frame is partially reconstructed, even if it is only the first fragment.

According to 22.2.2.8 RX_ER shall be asserted for any error the PHY is capable of detecting. This is certainly true for a garbage frame.

Cl 61 SC 61.2.2.7.3 P336 L45 # 212
Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

Received fragment has to be dropped.

SuggestedRemedy

Add a note that this fragment has to be dropped.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Add text before "assert RX_ER": "discard the offending fragment,"

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Cl 61 SC 61.2.2.8.2 P338 L18 # 88
Squire, Matt Hatteras Networks

Comment Type TR Comment Status D

There's some ambiguity on the "mandatory"ness of PMI aggregation registers and discovery. In some places (C30, C45, etc.), we indicate discovery is an optional feature. Here, we're saying the register to control discovery (remote_discovery) is mandatory. Suggest that this be made conditional on supporting PMI aggregation discovery.

SuggestedRemedy

Change this sentence to read, "If PMI aggregation discovery is supported by a CPE-subtype device, the remote_discovery_register (see XXX) shall be implemented."

Proposed Response Response Status Z

WITHDRAWN. PROPOSED REJECT.

Performance of Aggregation Discovery is optional. So is implementation of the PAF. However, 61.2.2.8.3 correctly states that the remote discovery register shall be implemented in each PCS instance in a -R subtype. This is for interoperability with -O subtypes attempting aggregation discovery. See Figure 61A-2; specifically, PMI-3.

Cl 61 SC 61.2.2.8.3 P337 L L # 303
Squire, Matt Hatteras Networks

Comment Type TR Comment Status R

The format of the PMI aggregate/available register seem to place some restrictions on its use that are unintended. In particular, they limit the number of *potential* PMIs that can be in a particular PMD to a set of 32. The restrictions intended by the clause (I think) were to limit the number of actual PMIs in a PMD to 32 or less. But not to limit the number of potential PMIs that can be aggregated.

For example, suppose one builds a system with 48 PMIs, any two of which can be aggregated together. How does one use these 32-bit wide registers to show availability or connectivity?

SuggestedRemedy

The simplest thing (unfortunately) seems to be to increase the register size to something much greater than 32 (256?). I don't know thats a good solution. A better solutions is requested.

Proposed Response Response Status C

REJECT.

At this stage in the game, a better solution is not known. The suggested remedy of increasing the register size to 256 bits is undesirable, and has negative consequences such as greatly increasing the width of the gamma interface (Table 61-7), and greatly lengthing the messages used for the Discovery process.

Since 32 was supposed to be an "outlyer" number; more than sufficient in most cases. It should therefore be sufficient as the maximum number of potential PMIs as well.

Cl 61 SC 61.2.2.8.3 P337 L26 # 213
Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

wrong register name
"EFM copper control register"

SuggestedRemedy

change to "10P/2B capability register"

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.2.8.3 P337 L51 # 214
Horvat, Michael Infineon Technologies

Comment Type E Comment Status R

Typo

SuggestedRemedy

respond instead of repond

Proposed Response Response Status C

REJECT.

Cl 61 SC 61.2.2.8.3 P338 L18 # 215
Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

wrong cross ref

SuggestedRemedy

change to 45.2.1.12.1.

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.2.8.3 P338 L42 # 216
Horvat, Michael Infineon Technologies

Comment Type E Comment Status R

Add more detailed description of action on PMI_Aggregate_register.

SuggestedRemedy

PMI_Aggregate_register remains unchanged as well.

Proposed Response Response Status C

REJECT.

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Cl 61 SC 61.2.3.1 P340 L10 # 461
 Tom Mathey Independent

Comment Type T Comment Status A
 Text "These signals are unused when Clause 45 is not implemented" would thus discard signal PCS_link_status.

SuggestedRemedy
 Need to keep PCS_link_status when loop agg is not present.
 Need to keep all of the signals when an alternate to clause 45 is provided.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

The sentence is question was part of the remedy to Comment #1197/D2.0. However, further discussion in the STF clarified that these signals exist in the -R subtype and allow the TC to access PAF PMI_Aggregate_register and remote_discovery_register.

Change last sentence before Table to "Some of these signals may be unused when Clause 45 is not implemented."

Cl 61 SC 61.2.3.1 P340 L14 # 220
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A
 In Table 61-7 the definition of how to handle the signals when more than one TC is connected to the PAF is missing.

SuggestedRemedy
 In case of read/write collision the PAF has to process the read/write-requests sequentially. As this applies to all signals marked with footnote b, appending this information to the footnote might be appropriate.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

Add to footnote b): "In case of read/write collision the PAF has to process the read/write-requests sequentially".

Cl 61 SC 61.2.3.1 P340 L17 # 218
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status R
 In Table 61-7 signal TC_synchronized missing

SuggestedRemedy
 Add TC_synchronized to gamma interface

Proposed Response Response Status C
 REJECT.

TC-synchronized is indicated through PCS_link_state

Cl 61 SC 61.2.3.1 P340 L5 # 219
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status R
 The hint "Additional Paragraph" is unnecessary

SuggestedRemedy
 remove

Proposed Response Response Status C
 REJECT.

Cl 61 SC 61.2.3.2.1 P341 L20 # 304
 Squire, Matt Hatteras Networks

Comment Type E Comment Status D
 Move G993.1 reference to following sentence, not section header (will match 61.2.3.2.2 and 61.2.3.2.3).

SuggestedRemedy
 Eliminate reference in header, replace next sentence with:
 "
 Section 7.1.1 of G993.1 is referenced as is with the additions shown in Table 61-8.
 "

Proposed Response Response Status Z
 WITHDRAWN. PROPOSED REJECT.

61.2.3.2.2 & 61.2.3.2.3 do not reference sections in G.993.1, which is why they look different.

For similar subclauses, see those in 61.3

Cl 61 SC 61.2.3.2.1 P341 L33 # 221
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A
 In Table 61-8, row PMA_PMD_type: for 0x80 'CO' is wrong

SuggestedRemedy
 change to 'CPE'

Proposed Response Response Status C
 ACCEPT.

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Cl 61 SC 61.2.3.2.1 P341 L 34 # 97

Beck, Michael Alcatel Bell nv

Comment Type T Comment Status A

In Table 61-8, PMA_PMD_type values 00 and 80 both map to "10PASS-TS CO subtype".

SuggestedRemedy

PMA_PMD_type value 80 should map to "10PASS-TS CPE subtype".

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.3.2.3 P342 L 23 # 305

Squire, Matt Hatteras Networks

Comment Type E Comment Status D

We refer to clauses 62/63 for g994.1 messaging, when there's an awful lot of G994.1 messaging in C61 (61.3).

SuggestedRemedy

Add sentence "Refer to Section 61.3 for G994.1 handshaking mechanisms."

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

Cl 61 SC 61.2.3.3 P343 L # 99046

Kimpe, Marc Adtran

Comment Type TR Comment Status A D2.0 #864

Per our interpretation of the spec, it appears that due to the configuration of the scrambler and CRC it is possible to deliver bad frames with good CRC's.

The specific case in theory is as follows:

The scrambler scrambles the frame payload data. The CRC then calculates a CRC on the scrambled data. The transmitter then sends the scrambled data along with the CRC where it may be subjected to bits errors.

At the receiver, if a bit error occurs near the end of a frame, that frame will likely be discarded due to a CRC mismatch. This is good. The data from that frame is then sent to the scrambler. The scrambler will propagate errors into the first payload bits of the next frame.

The CRC on the next frame will be computed and will be a correct CRC since the scrambled bits are OK. The data of the second frame is then sent to the scrambler where it is corrupted due to error propagation from the first frame. The second frame will likely be delivered with the propagated errors from the scrambler in it's first bits but with a correct CRC check.

SuggestedRemedy

If this is correct then perhaps the CRC should be on the non-scrambled data. We propose to scramble everything in each codeword except the sync byte. (This might be simpler to explain in the spec and also might make sync detection possible if the TC is used in systems in the future without byte synchronization.)

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Commenter signed off on this comment after resolution of comment #85/D2.1.

Comments #293(T), #267(T), #820(TR), #1210(TR), #1182(TR) and #1183(TR) suggest removing the scrambler.

Comments #864(TR), #799(T), #800(T) and #1237(T) address issues related to the scrambler.

Proposed action:

- Accept comment #1237
- Remove scrambler/descrambler
- Resolution of comments #293, #267, #820, #1210, #1182, #1183, #864, #799 and #800 immediately follows

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Cl 61 SC 61.2.3.3.1 P344 L # 85

Squire, Matt Hatteras Networks

Comment Type TR Comment Status A

The method proposed for signaling out-of-sync on 2BASE-TL ports is not available with existing G991.2 chipsets. One of the objectives of the copper subtaskforce is to provide means to leverage the technology that has already been developed for xDSL, and that 802.3ah should not mandate changes to the ways that they are utilized today. The use of the EoC for out-of-sync signaling adds difficult and unnecessary burden on existing chips to implement new EoC signaling message that are EFM specific when simpler methods that require no changes to the chipsets are easily available.

SuggestedRemedy

The proposed method for signaling out-of-sync to a 2BASE-TL peer is to use a different type of idle frame when the local device is out-of-sync. Since idles must be transmitted whenever the local receiver is out-of-sync, the use of a new idle frame provides a simple method to tell the remote transmitter that synchronization was lost. This provides additional benefit in that the signaling for out-of-sync is kept at the same layer as the synchronization, rather than pushing it down into a lower layer management channel.

Changes required:

1) Eliminate 63.2.2.2.1 which provides a new EOC message for synchronization status.

2) Add a new frame type to 61.2.3.3.1

f) Out-of-sync Idle: All of the octets in the codeword are idle octets and the 64/65-octet receive state machine is out-of-sync.

3) Add a new codeword to Table 61-9.

type: all idle out-of-sync
frame data: YZZZZZ..Z
Sync octet: F0
Octet fields: YZ...Z

4) Add a new control character to Table 61-10
Codeword type: idle out of sync
Character: Y
Value: 0xD1 [equivalent to C65 if that existed]

5) Adjust Fig 61-18, idle state:
Add: IF k=1 THEN transmitSyncIdle();
ELSE transmitZ();

In functions, add:
transmitSyncIdle: If the 64/65-octet receive state machine out-of-sync (LOSS_OF_SYNC1, LOSS_OF_SYNC2), this function transmits the character Y. Otherwise, it transmits the character Z.

Proposed Response Response Status C

ACCEPT.

TF Closing Plenary:
MOTION TO ACCEPT COMMENT
(Kimpe/Squire)
26/3/12 PASS

AMENDMENT: Add the text "for 2BASE-TL only."
(Eckert/Fanfoni)
3/17/18 (amendment fails)

THE COPPER SUB TASK FORCE DID NOT REACH AGREEMENT ON A RESOLUTION FOR THIS COMMENT.

MOTION TO ADOPT #85 AND #415 FOR 2BASE-TL ONLY.
Squire/Langston
Approve: 6 Don't Approve: 3 (incl. Chair) Abstain: 9 FAIL
Mr. Eckert requested to change his vote from Don't Approve to Abstain at the end of counting.
Objection is raised to this way of conducting the vote.
The Chair rules we are in order. The result of the vote will be presented to the Task Force.

MOTION TO REJECT #85, #110 and #415
Beck/Eckert
Approve: 6 Don't Approve: 11 Abstain: 2 FAIL

Amendment (Barrass/friendly):
Add clarification "there was no consensus in the Sub Task Force to make a change to the draft at this time."

STRAW POLL
Comment #85: 10 in support, 5 in opposition, 3 abstain
Comment #110: 1 in support, 8 in opposition, 8 abstain

PROPOSED REJECT.
To be discussed with comments #110 and #415.

There is no objective on record to base the EFM/Copper port types on existing chipsets. Such an agreement would be difficult to implement, as feature sets are rarely identical between chipsets.

A proposal was made to use existing xDSL specifications and limit the scope of the Copper

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Sub Task Force to the sublayer above the gamma-interface, but this proposal was rejected by the Task Force (Eckert/Eisner motion, March 2002, Y:51 N:32 A:68).

The adopted baselines for 2BASE-TL and 10PASS-TS indeed reference existing standards and/or recommendations, but several changes have been made in the course of the project, and this is well within the scope of the PAR and the adopted objectives.

The 64/65-octet encapsulation method has received a lot of attention during Task Force review, and the proposed changes may compromise the stability of the current TC specification.

Cl 61 SC 61.2.3.3.1 P344 L3 # 223
Horvat, Michael Infineon Technologies

Comment Type E Comment Status A
"egress" instead of "transmit" used.

SuggestedRemedy

change "egress" to "transmit".
The same applies to line 5: change "ingress" to "receive".

Proposed Response Response Status C
ACCEPT.

Cl 61 SC 61.2.3.3.1 P344 L38 # 225
Horvat, Michael Infineon Technologies

Comment Type T Comment Status R
Not clear whether 64 byte portion should be dropped or not.

SuggestedRemedy

Add a note that data should be processed normally.

Proposed Response Response Status C
REJECT.

According to state diagram (Figure 61-19), it is discarded.

Cl 61 SC 61.2.3.3.1 P344 L43 # 229
Horvat, Michael Infineon Technologies

Comment Type T Comment Status A
Paragraph starts with "Figure 61-15 illustrates two interesting examples". Then only the first example is described.

SuggestedRemedy

Describe the second interesting example.

Proposed Response Response Status C
ACCEPT IN PRINCIPLE.

Add sentence: "In the second example, the first octet of a frame is aligned with the first octet of an All Data codeword".

Cl 61 SC 61.2.3.3.1 P344 L7 # 224
Horvat, Michael Infineon Technologies

Comment Type E Comment Status A
"frame" instead of "fragment" used. Using "fragment" was introduced in 61.2.3., Page 339, Line 20

SuggestedRemedy

"change "frame" to "fragment" The same applies to "frame" in line 10.

Proposed Response Response Status C
ACCEPT.

Cl 61 SC 61.2.3.3.2 P345 L39 # 231
Horvat, Michael Infineon Technologies

Comment Type T Comment Status A
In table 61-10, the cordword types do not match to the codeword types defined in table 61-9.

SuggestedRemedy

Use correct codeword types. Alternatively, remove the "Codeword type" column.

Proposed Response Response Status C
ACCEPT IN PRINCIPLE.

Remove column.

Cl 61 SC 61.2.3.3.2 P346 L1 # 232
Horvat, Michael Infineon Technologies

Comment Type E Comment Status A
"frame" instead of "fragment" used. Using "fragment" was introduced in 61.2.3., Page 339, Line 20

SuggestedRemedy

change "frame" to "fragment" The same applies to "frame" in line 2.

Proposed Response Response Status C
ACCEPT.

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Cl 61 SC 61.2.3.3.3 P346 L13 # 234
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

"egress" instead of "transmit" used.

SuggestedRemedy

change "egress" to "transmit". The same applies to line 14: change "ingress" to "receive" twice.

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.3.3.3 P346 L13 # 233
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

"frame" instead of "fragment" used. Using "fragment" was introduced in 61.2.3., Page 339, Line 20

SuggestedRemedy

change "frame" to "fragment" The same applies to "frame" in lines 14, 15 and 27.

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.3.3.3 P347 L1 # 226
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status R

Definition of signal TX_Err missing

SuggestedRemedy

Either add definition or remove it.

Proposed Response Response Status C

REJECT.

TX_Err is defined by reference to G.993.1 (Annex H) in 61.2.3.1.

Cl 61 SC 61.2.3.3.5 P347 L24 # 235
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

"ingress" instead of "receive" used.

SuggestedRemedy

change "ingress" to "receive"

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.3.3.6 P347 L48 # 236
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

Chapter "Management Entity signals" is missing. For PAF (61.2.2.8.2.) and Rate Matching (61.2.1.2.2.) such a chapter exists.

SuggestedRemedy

Add chapter, with reference to 61.2.3.4.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Add new subclause which consists of the sentence "See 61.2.3.4".

Also, replace 61.2.1.2.2 with this sentence as well.

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Cl 61 SC 61.2.3.3.7 P347 L 51 # 464

Tom Mathey Independent

Comment Type T Comment Status A

1. variables are used in stare diagram without definition
2. misc changes

SuggestedRemedy

Place definition in alphabetical order
Transmit state diagram

1. Add definition for transmitS()
2. in state "PULL_PAF_DATA1" the exit for Tx_EOP can never happen given a legal incoming MAC frame. Are we allowing short frames? If so, verify that the receiver can parse a short frame.
3. in state "PULL_PAF_DATA2" the exit for k= 64 should be Tx_EoP = false and k = 64; the exit Tx_EoP = true and k < 64 should be Tx_EoP = true and k = 64
4. the incrementing of variable k may need to be mod 65 vs mod 64.

Receive state diagram

1. Signal names in definition have an underscore "_" which is missing in diagram: RxErr, RxEop
2. In state "DECODE", name "kmax" and "C" are not defined
3. no state sets variable "RxEoP" to false.
4. A number of exit conditions test for "k=65", however k can never exceed value 63.
5. Exit condition "ELSE" from state "DECODE" is strange as test "kmax<65" seems to cover all other conditions.
6. receive needs to check the PCS CRC, 2 bytes or 4 bytes
7. receive needs to remove the PCS CRC, 2 bytes or 4 bytes, and not send to upper layer

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

In transmit, k is mod 64
Place definitions in alphabetical order
Add definition for transmitS()

PULL_PAF_DATA1 has missing exit case TX_EOP=TRUE and k<64. Replace condition k=64 to k=64 OR TX_EOP=TRUE. Change action to:
transmitData()
IF (k=64) THEN k<=0
ELSE -> fill frame with idles, and use next C_k value to indicate that the fragment ended with the last octet of the previous codeword.

Move condition PCS_link_state = FALSE to the transition from END_FRAGMENT to IDLE as an additional ORed condition.

The exit condition of ALL_DATA is split into two.
TX_EOP = TRUE leads to END_FRAGMENT
TX_EOP = FALSE leads back to PULL_PAF_DATA2

Add definition of kmax and C in receive variables.

Changes need verification at STF.

Cl 61 SC 61.2.3.3.7 P347 L 53 # 127

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status A

Editor's Notes should be removed prior to publication.

SuggestedRemedy

Remove Editor's Note.

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.3.3.7 P347 L 53 # 306

Squire, Matt Hatteras Networks

Comment Type E Comment Status D

Kill editors note.

SuggestedRemedy

Kill editors note.

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

Cl 61 SC 61.2.3.3.7 P350 L 17 # 237

Horvat, Michael Infineon Technologies

Comment Type T Comment Status R

In Figure 61-18:
The transition from "PULL_PAF_DATA1" back to "PULL_PAF_DATA1" contains an unnecessary condition, Tx_EoP = False. If PAF works as specified, this cannot occur (minFragmentSize = 64).

SuggestedRemedy

Remove this condition.

Proposed Response Response Status C

REJECT.

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Cl 61 SC 61.2.3.3.7 P350 L22 # 238
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

In Figure 61-18: The transition from "ALL_DATA" back to "PULL_PAF_DATA2" must be distinguished, dependent from TX_EOP = FALSE/TRUE. Currently the first example in Table 61-15 (a frame with only C0 = 0x90 and Z afterwards) cannot be realized.

SuggestedRemedy

Split Transition into two.

Proposed Response Response Status C

ACCEPT.
 See resolution of comment #464.

Cl 61 SC 61.2.3.3.7 P350 L39 # 239
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

Typo: tranmit instead of transmit.

SuggestedRemedy

Correct.

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.3.3.7 P350 L40 # 240
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

This definition of pullOctetFromPAF() implies that CRC is calculated in PAF.

SuggestedRemedy

Write a note, that this function returns also the CRC values, although these are calculated in TPS-TC.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
 Change pullOctetFromPAF() to pullOctet().

Cl 61 SC 61.2.3.3.7 P350 L54 # 241
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

definition of transmitS() is missing

SuggestedRemedy

Add definition.

Proposed Response Response Status C

ACCEPT.
 See comment #464.

Cl 61 SC 61.2.3.3.7 P352 L1 # 128
 Beck, Michael Alcatel Bell nv

Comment Type T Comment Status A

Figure 61-19 specifies the 64/65-octet decapsulation (receive) function. The CRC verification seems to be missing from the state diagram.

SuggestedRemedy

Add appropriate functions/variables to perform CRC check on incoming fragments.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
 Change definition of sendOctetToPAF() to:
 "function that sends a single octet of data over an internal g-interface to an intermediate fifo. The size of the intermediate fifo is 2 octets for 10PASS-TS and 4 octets for 2BASE-TL. Data is transmitted at the same rate from the intermediate fifo to the PAF (if present) over the g-interface. This function takes one cycle of the Tx_clk (transmit clock) signal (see 61.2.3.1) to complete. At the end of a fragment, the fifo contains the TC_CRC octets. The TC_CRC octets are never forwarded over the g-interface. After verification of the TC_CRC octets, the result of the TC_CRC verification is signalled to the PAF (if present) over the g-interface."

UNTABLED BY UNANIMOUS CONSENT.

MOTION TO TABLE (Cravens/Sorbara). PASS

PROPOSED ACCEPT.

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Cl 61 SC 61.2.3.4 P353 L 48 # 465
 Tom Mathey Independent

Comment Type T Comment Status R

For this subclause, what the commenter wanted as the change from D2.0 to 2.1 was a table, not text, which maps the various names and numbers between clauses. The added text adds no value as it repeats previous text. If this table was present, it would be obvious that there is no map for PCS link status to and from the PMA layer.

SuggestedRemedy

Replace text with table. Entries such as:
 Clause 45 register and bit with signal name maps to
 Clause 62 signal name which maps to
 NPAR and SPAR octet and bit.

Proposed Response Response Status C

REJECT.

Specific remedy not supplied.

Cl 61 SC 61.2.3.4 P354 L 12 # 230
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

PAF_supported: was renamed to PAF_available

SuggestedRemedy

change PAF_supported to PAF_available

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.3.4 P354 L 13 # 242
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

wrong crossref.

SuggestedRemedy

change to 45.2.3.18.4.

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.2.3.4 P354 L 53 # 227
 Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

Assertion condition of TC_synchronized is wrong.
 Additionally, signal exists for each TC.

Cross ref missing.

SuggestedRemedy

Signal TC_synchronized is asserted when state machine reaches codeword synchronization.

Like for TC_PAF_* signals add that signal exists for each gamma interface.
 Same applies to TC_CRC_error and TC_coding_error.

Add also cross ref to 45.2.3.2.2

Proposed Response Response Status C

ACCEPT.

Cl 61 SC 61.3.12 P398 L 25 # 103
 Beck, Michael Alcatel Bell nv

Comment Type E Comment Status D

Typo: subtype's.

SuggestedRemedy

Replace "subtype's" with "subtypes".

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

Cl 61 SC 61.3.12.1 P398 L 27 # 245
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

Not clear which NPAR(3) has to be reset to zero.

SuggestedRemedy

Clarify

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Add "Clear if same" before "Npar(3)".

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Cl 61 SC 61.3.12.1 P399 L3 # 257
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status A
 Figure 61-20: terms 'LT' and 'NT' not defined.
 SuggestedRemedy
 Use '-O' and '-R' device instead
 Proposed Response Response Status C
 ACCEPT.

Cl 61 SC 61.3.12.2 P400 L17 # 246
 Horvat, Michael Infineon Technologies
 Comment Type T Comment Status A
 Write of PMI aggregate register, contradiction to clause 61.2.2.8.3 (p.338, line 10). Only bit position 0 will be used.
 SuggestedRemedy
 Modify that only bit 0 will be used.
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Change paragraph to:
 "In response to a "write" command, . . . and the Npar(3) PMI_Aggregate_register bit zero set to the value for the PMI_Aggregate_register bit position corresponding to the PMA/PMD upon which the G994.1 exchange takes place. The CPE-subtype shall set the relevant bit in its PMI_Aggregate_register to this value. The contents . . ."
 Also update 45.2.1.15 accordingly.

Cl 61 SC 61.3.12.3 P400 L29 # 311
 Beili, Edward Actelis Networks
 Comment Type E Comment Status A
 C-SILECT1 is a typo. In addition gamma-interface is written as g-interface.
 SuggestedRemedy
 Replace C-SILECT1 with C-SILENT1. Replace g-interface with <greek_letter_gamma>-interface.
 Proposed Response Response Status C
 ACCEPT.

Cl 61 SC 61.3.12.3 P400 L31 # 247
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status A
 wrong cross ref
 SuggestedRemedy
 correct table is Table 45-5
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

There are 2 Table45-5's in Clause 45. This reference should be set to the second Tabel 45-5, once the Clause 45 table numbering is fixed.

Cl 61 SC 61.3.8.7.1 P360 L46 # 99
 Beck, Michael Alcatel Bell nv
 Comment Type E Comment Status D
 In Table 61-19, bit 8 of the 10PASS-TS row is empty.
 SuggestedRemedy
 Place an 'x' in the empty cell.
 Proposed Response Response Status Z
 WITHDRAWN. PROPOSED ACCEPT.

Cl 61 SC 61.3.8.7.3 P362 L34 # 100
 Beck, Michael Alcatel Bell nv
 Comment Type T Comment Status A
 In Table 61-23 and Table 61-141, the bits that represent the silent period are referenced as "bits 5 to 0" in the description column. However, the actual bits in this table (and in all other G.hs tables) are numbered 8 through 1.
 SuggestedRemedy
 Make description field in both tables consistent with notational conventions in ITU-T Recommendation G.994.1. Replace text with: "Silence period length (bits 6-1 x 10s, from 10 seconds to 10 minutes).
 Proposed Response Response Status C
 ACCEPT.

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CI 61 SC 61.3.8.7.4 P369 L 50 # 111

Beck, Michael Alcatel Bell nv

Comment Type T Comment Status A

A new way is introduced to encode data rates in G.994.1 codepoints. However, the codepoints used to encode data rates the old way are still in the codepoint tree.

SuggestedRemedy

Remove Tables 61-59 through 61-62, 61-67 through 61-70, 61-76 through 61-79, 61-84 through 61-87, 61-98 through 61-101.
Change "data rate" to "extended data rate" in Tables 61-102 through 61-105 and Tables 61-112 through 61-119.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

The commenter spotted a problem but the remedy can cause further confusion. All the tables that the commenter proposes to delete are part of the new way to encode data rates and are mandatory to be sent. The associated tables that the commenter did not propose to delete contain optional octets. The commenter is correct that this is not obvious. To avoid confusion, we propose the following 3 modifications to the text preceding the tables.

Change line 30 to 31 on page 370 from

The variables j5 and j6 associated with the PMMS rates shall be independent, and shall range from 1 to 8, inclusive. If only one range of rates is required, then only the octets associated with (min1,max1,step1) shall be sent.

to

The variables j5 and j6 associated with the PMMS rates shall be independent, and shall range from 2 to 8, inclusive. If only one range of rates is required, then only the octets associated with (min1,max1,step1) shall be sent. If more than one range of rates is required, then j5 *4 and j6 *4 correspond to the number of octets sent.

Change line 43 to 45 on page 370 from

The variables j1, j2, j3 and j4 associated with the training rates shall be independent, and shall range from 1 to 8, inclusive.

to

The variables j1, j2, j3 and j4 associated with the training rates shall be independent, and shall range from 2 to 8, inclusive. If only one range of rates is required, then only the octets associated with (min1,max1,step1) shall be sent. If more than one range of rates is required, then j1 *4, j2 *4, j3 *4 and j4 *4 correspond to the number of octets sent.

Change line 52 & 53 on page 370 from

The variables j1, j2, j3 and j4 associated with the training rates shall be independent, and shall range from 1 to 8, inclusive. If optional line probe is used, the receiver training parameters will be further limited by the probe results.

to

The variables j1, j2, j3 and j4 associated with the training rates shall be independent, and shall range from 2 to 8, inclusive. If only one range of rates is required, then only the octets associated with (min1,max1,step1) shall be sent. If more than one range of rates is required, then j1 *4, j2 *4, j3 *4 and j4 *4 correspond to the number of octets sent.

If optional line probe is used, the receiver training parameters will be further limited by the probe results.

CI 61 SC 61.3.8.7.4 P369 L 50 # 414

kimpe, marc adtran

Comment Type E Comment Status A

The heading for the 2BASE-TL SPAR(2) is at the wrong location.

SuggestedRemedy

Move the heading and 1st sentence under it to p. 370 after table 61-53

Proposed Response Response Status C

ACCEPT.

CI 61 SC 61.3.8.7.4 P369 L 60 # 101

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status D

The text uses uncommon abbreviations in various places.

SuggestedRemedy

Substitute "sec" with "s";
substitute "kbit" with "kb";
substitute "symbol/sec" with "baud";

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

CI 61 SC 61.3.8.7.4 P370 L 14 # 102

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status A 61.3.8.7.4 by EFMcu Editor

Unit of maximum bit rate is missing.

SuggestedRemedy

Add "b/s" after "5696".

Proposed Response Response Status C

ACCEPT.

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Cl 61 SC 61.3.8.7.4 P370 L15 # 114
 Beck, Michael Alcatel Bell nv
 Comment Type E Comment Status D
 Uncommon capitalization.
 SuggestedRemedy
 Replace "NPAR(3)" with "NPar(3)".
 Proposed Response Response Status Z
 WITHDRAWN. PROPOSED ACCEPT.

Cl 61 SC 61.3.8.7.4 P370 L19 # 124
 Beck, Michael Alcatel Bell nv
 Comment Type T Comment Status A
 Subclause 61.3.8.7.4 states:
 "The following definition is added to the G.994.1 code point definitions in par. 6.4.1 of G.991.2 for the support of the extended data rates..."
 However, subclause 63.3.2.2 states:
 "[Section 6 is] referenced as is, with the exception of subsection 6.4 (G.994.1 Preactivation Sequence), which is supplanted by 61.3."
 So the new text in 61.3.8.7.4 does not relate to any existing text in the 2BASE-TL specification, and in fact only makes changes to an ITU-T Recommendation.
 SuggestedRemedy
 Change text in 62.3.2.2 as follows:
 -remove sentence on lines 36-37 (page 441)
 -add sentence add the end of the subclause:
 "Section 6.4 is supplanted by 61.3. The relevant definitions in Section 6.4.1 apply to the corresponding 2BASE-TL parameters defined in 61.3, and are incorporated by reference."
 Proposed Response Response Status C
 ACCEPT.

Cl 61 SC 61.3.8.7.4 P370 L20 # 112
 Beck, Michael Alcatel Bell nv
 Comment Type T Comment Status A
 Text references "this Annex".
 SuggestedRemedy
 Replace "the extended data rates specified in this Annex" with "the extended data rates specified in this subclause".
 Proposed Response Response Status C
 ACCEPT.

Cl 61 SC 61.3.8.7.4 P370 L37 # 113
 Beck, Michael Alcatel Bell nv
 Comment Type E Comment Status A
 Use of "STU-R" and "STU-C" is inappropriate.
 SuggestedRemedy
 Throughout subclause, replace "STU-R" with "2BASE-TL-R"; replace "STU-C" with "2BASE-TL-O".
 Proposed Response Response Status C
 ACCEPT.

Cl 61 SC 61.3.8.7.4 P371 L19 # 254
 Horvat, Michael Infineon Technologies
 Comment Type T Comment Status R
 PAF Available was renamed to PAF-O Available
 SuggestedRemedy
 Remove '-O' (see 61.3.12.1) in order to support CPE devices.
 Proposed Response Response Status C
 REJECT.
 As described in the first paragraph of 61.3.1.12 the PMI Aggregation Discovery SPar(2) bit serves to indicate the PAF Available status of the -R device.

Cl 61 SC 61.3.8.7.5 P386 L19 # 255
 Horvat, Michael Infineon Technologies
 Comment Type E Comment Status A
 Table name of table 61-99 not correct (applies to tables 61-100 and 61-101)
 SuggestedRemedy
 Replace 'parameters' with 'rates'
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Tables 103-105, 113-115, 117-119 also need to be corrected.

Cl 61 SC 61.3.8.7.6 P393 L3 # 228
 Horvat, Michael Infineon Technologies
 Comment Type T Comment Status A
 The following tables cover 'aggregation discovery parameters' (not 'PMI aggregation').
 SuggestedRemedy
 Replace 'PMI aggregation' by 'aggregation discovery parameters'
 Proposed Response Response Status C
 ACCEPT.

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Cl 61 SC 61.3.8.7.6 P395 L11 # 243
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A
 Following tables specify 2BASE-TL PMI aggregation codepoint

SuggestedRemedy
 Replace 10PASS-TS with 2BASE-TL

Proposed Response Response Status C
 ACCEPT.

Cl 61 SC 61.3.8.7.6 P395 L25 # 244
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A
 Table 61-135: specify which codepoints are register bits 31-30.

SuggestedRemedy
 Add that bits 5 and 4 are bits 31 and 30

Proposed Response Response Status C
 ACCEPT.

Cl 61 SC 61.3.8.7.6 P396 L21 # 256
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A
 Name of Table 61-140 not correct

SuggestedRemedy
 Replace 10PASS-TS with 2BASE-TL

Proposed Response Response Status C
 ACCEPT.

Cl 61 SC 61.4 P400 L51 # 104
 Beck, Michael Alcatel Bell nv

Comment Type E Comment Status D
 Excessive capitalization.

SuggestedRemedy
 Replace "Performance Guidelines" with "performance guidelines".

Proposed Response Response Status Z
 WITHDRAWN. PROPOSED ACCEPT.

Cl 61 SC 61.8 P401 L30 # 312
 Beili, Edward Actelis Networks

Comment Type TR Comment Status R
 The suggested PHY label description examples in a) and b) are not accurate and complete.

SuggestedRemedy
 Replace a) and b) with the following text:
 a) PMA/PMD (sub-)type. A Type (e.g. 10PASS-TS) can be specified if both -O and -R subtypes are supported. A Sub-type shall be specified (e.g. 10PASS-TS-R) if only a single subtype is supported.
 b) PAF capability if supported. The following information shall be provided: Number of MII/PCS ports provided; Max number of PMIs per MII/PCS; Total number of PMIs. For example:
 - x8 or 1x8:8 for a single MII port with 8 PMIs
 - 2x2:4 for a device with 2 MII ports and 4 PMIs, which can be aggregated up to two PMIs per port.
 - 4x4:4 for a device with 4 MII ports, 4 PMIs and ability to aggregate up to 4 PMIs per port.

Proposed Response Response Status C
 REJECT.
 The comment is made against material that was previously adopted and that hasn't change from the previous draft.

Cl 61 SC 61.9.4.4 P408 L1 # 315
 Beili, Edward Actelis Networks

Comment Type TR Comment Status A
 Not all EFM specific Handshake messages are listed in the PICS.

SuggestedRemedy
 Make sure that all EFM specific Handshake messages are listed in the PICS.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Add following PICS entries, mandatory if PAF is implemented (Editor to fill in appropriate numbering and subclause reference):
 -The PHY uses handshake procedures as described in 61.3.12.1 to access the Remote Discovery register.
 -The PHY uses handshake procedures as described in 61.3.12.2 to access the PMI Aggregate register.

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Cl 61 SC Figure 61-1 P319 L19 # 192
 Horvat, Michael Infineon Technologies

Comment Type E Comment Status A
 Details of PCS for 2BASE-TL missing (see box).

SuggestedRemedy
 Add foot note that clause 61 PCS for 2BASE-TL and 10PASS-TS are identical.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Add sentence at the end of subclause 61.1.3:
 NOTE---The PCS shown in the 2BASE-TL PHY and the PCS shown in the 10PASS-TS
 PHY are two instances of one unique PCS, specified in this Clause.

Cl 61 SC Figure 61-11 P334 L29 # 80
 Squire, Matt Hatteras Networks

Comment Type E Comment Status A
 Figure references 61.2.2.6 as the error handling. Should be 61.2.2.7.

SuggestedRemedy
 Fix references in figure (two of them).

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Resolution of comment #92 may apply.

Cl 61 SC Figure 61-11 P334 L8 # 92
 Brown, Benjamin Independent

Comment Type TR Comment Status A
 State variables are unconventional and undefine, e.g. "All active queues non empty" and
 "one queue non-empty for maxDifferentialDelay bit times".

Also, there is nothing that makes any of this state diagram mandatory.

SuggestedRemedy
 Add a shall statement, along with necessary PICS, in order to make this state diagram
 mandatory.

Create a variable (or function) name for these and similar conditions then define the
 conditions in the variable subclause (or create a function subclause and define them there).

Replace all instances of logical "and" with ""

Replace "Reference 61.2.2.6" with a function call that describes the contents and 61.2.2.6
 or perhaps references it.

"Process fragment" should probably be a function describing just what is intended here.

These all may seem a level of indirection but precise descriptions allow all readers of the
 standard to implement compliant designs.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.

Replace "Reference 61.2.2.6" by:
 function call "errorDetection()"
 Add sentence to 61.2.2.7.
 The above rules are applied by the function errorDetection() referenced in Figure 61-11.

Replace "All active queues non empty" by:
 AllActiveQueuesNonEmpty = TRUE
 Define AllActiveQueuesNonEmpty as
 "Variable of type boolean that indicates whether any active queue is currently empty.
 TRUE if none of the active queues is currently empty
 FALSE if at least one active queue is currently empty"

Replace "One queue non empty for maxDifferentialDelay bit times" by:
 OneQueueNonEmpty = TRUE
 Define OneQueueNonEmpty as
 "Variable of type boolean that indicates whether at least one active queue has been non-
 empty for at least maxDifferentialDelay bit times.
 TRUE if at least one active queue has been non-empty for at least maxDifferentialDelay bit
 times
 FALSE if all active queues have been non-empty for less than maxDifferentialDelay bit
 times."

Replace "Any queue non empty" by:

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AnyQueueNonEmpty = TRUE
 Define AnyQueueNonEmpty as
 "Variable of type boolean that indicates whether at least one active queue is currently non-empty.
 TRUE if at least one active queue is currently non-empty
 FALSE if all active queues are empty."

Replace "timeout = maxDifferentialDelay * No fragment processed" by:
 NoFragmentProcessed = TRUE
 Define NoFragmentProcessed as
 "Variable of type boolean that indicates that no fragment has been processed on any queue within a time window of maxDifferentialDelay bit times.
 TRUE if a timeout of maxDifferentialDelay bit times has expired and no fragment has been processed
 FALSE if the timeout of maxDifferentialDelay bit times has not yet expired or a fragment has been processed"

Remove "process fragment".

Replace all instances of logical "and" with "**".

Cl 61 **SC Figure 61-12** **P 339** **L 47** # **460**
 Tom Mathey Independent

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

Figure seems to have two drawings artifacts.

SuggestedRemedy

In the box labeled control s/m (Tx) and in the transmit path multiplexer.

Proposed Response *Response Status* **C**

REJECT.
 I don't seem to see them.

Cl 61 **SC Figure 61-14** **P 343** **L 27** # **222**
 Horvat, Michael Infineon Technologies

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

Wave forms on the left side and on the right side do not show the same interface: left gamma, right alpha/beta
 Therefore, connection between these two interfaces makes no sense.

Additionally, last TX_enbl on the top right figure not correct (Z will be inserted by TC).

SuggestedRemedy

Remove '60 clocks not shown' in figure.

Remove wrong strobe.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The connection between the signals on the gamma-interface and the signals on the alpha(beta)-interface makes sense in the context of the example implementation shown in Figure 61-13. Therefore, the text "60 clocks not shown" is appropriate.

Remove the Tx_Enbl rectangle corresponding to the transmission of the final Z, and replace 'Z' with 'S'. In the second timing diagram, remove the rectangle corresponding to the transmission of FC1.

Cl 61 **SC Figure 61-18** **P 350** **L 1** # **93**
 Brown, Benjamin Independent

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

Issues with the new state diagram...

SuggestedRemedy

k doesn't have a value assigned at initialization - give it one - this may require an additional state before "IDLE" that only assigns a value to k. I finally noticed this in the text at the end of the variables list but it would be helpful to have it in the state diagram

"transmitS" needs a variable definition

need transition conditions leaving IDLE_TO_DATA and ALL_DATA states, even if they are simply "UCT" (see 1.2.1 in 802.3-2002)

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See resolution of comment #464.
 Add UCT as exit condition for IDLE_TO_DATA.

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Cl 61 SC Figure 61-19 P352 L1 # 94

Brown, Benjamin Independent

Comment Type TR Comment Status A

Issues with the new state diagram...

SuggestedRemedy

It is not obvious where this state diagram "begins" as there are no global inputs to any state the might imply "whenever this external condition occurs, always go back here and start over". I finally noticed this in the text at the end of the variables list but it would be helpful to have it in the state diagram.

k and B don't have values assigned at initialization - give them values. I finally noticed this in the text at the end of the variables list but it would be helpful to have it in the state diagram.

replace logical "AND" with * (see states CHECK_SYNC2 & CHECK_SYNC3)

Make the indent a little more obvious between "THEN" and "ELSE" and between "ELSE" and "ENDIF" in states to indicate that all of the assignments are to be executed based on the result of the IF evaluation. By the way, ENDF is not part of typical IEEE 802.3 convention. If you want to use it, I'm afraid you'll have to define it (even though it is probably obvious to most). Alternatively, you could do something similar to state AN_ENABLE in Figure 37-6, 802.3-2002.

Spelling error within codingViolation definition "detectino"

TC_coding_error is not in alphabetical order with the other variables

Misspelling of "TX_synchronized" in variable list

"240" and "15" aren't typical values of type "octet". Are these decimal representations of the typically hexadecimal (2-nibble) content?

Many states don't put spaces before and after the "<=" assignment symbol.

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.
State diagram issues need to be discussed in detail in the Copper Sub Task Force.

replace logical "AND" with * (see states CHECK_SYNC2 & CHECK_SYNC3)

Editor to modify use of IF/ENDIF to comply with state diagram conventions.

Spelling error within codingViolation definition "detectino"

TC_coding_error is not in alphabetical order with the other variables

Misspelling of "TX_synchronized" in variable list

Cl 61 SC Figure 61-2 P320 L17 # 95

Brown, Benjamin Independent

Comment Type TR Comment Status A

There are still some left over 64B/65B labels in this figure.

SuggestedRemedy

Replace all instances of "64B/65B" with "64/65-octet"

Proposed Response Response Status C

ACCEPT.
See also comment #194.

Cl 61 SC Figure 61-7 P329 L35 # 91

Brown, Benjamin Independent

Comment Type E Comment Status A

Missing "= TRUE"

SuggestedRemedy

In state TX_EN_ACTIVE, replace:

IF (crs_and_tx_en_infer_col) to IF (crs_and_tx_en_infer_col = TRUE)

Or:

replace entire contents of state assignments to:

crs_tx <= !crs_and_tx_en_infer_col

A similar comment applies to Figure 61-8, state TX_EN_ACTIVE

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
In Figure 61-7, replace entire contents of state assignments with:
crs_tx <= !crs_and_tx_en_infer_col
In Figure 61-8, replace condition in state TX_EN_ACTIVE with:
IF (crs_and_tx_en_infer_col = FALSE)

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Cl 61 **SC Table 61-135** **P395** **L 15** # **468**
 Tom Mathey Independent

Comment Type **T** **Comment Status** **R**
 Text is a duplicate of that on p 393, line 8.

SuggestedRemedy
 Unduplicate.

Proposed Response **Response Status** **C**
 REJECT.
 A first set of NPar(3) codepoints, starting on page 393, line 8, belongs to the PMI Aggregation Discovery SPar(2). These codepoints are used to exchange the contents of the Remote discovery register.
 A second set of NPar(3) codepoints, starting on page 395, line 15, belongs to the PMI Aggregation SPar(2). These codepoints are used to exchange the contents of the PMI_Aggregate_register.
 Hence, there is no duplication.

Cl 61 **SC Table 61-48** **P368** **L 33** # **466**
 Tom Mathey Independent

Comment Type **T** **Comment Status** **R**
 Assignment is a duplicate of that on p366.

SuggestedRemedy
 Unduplicate.

Proposed Response **Response Status** **C**
 REJECT.
 A first set of NPar(3) codepoints, starting on page 366, line 29, belongs to the PMI Aggregation Discovery SPar(2). These codepoints are used to exchange the contents of the Remote discovery register.
 A second set of NPar(3) codepoints, starting on page 368, line 33, belongs to the PMI Aggregation SPar(2). These codepoints are used to exchange the contents of the PMI_Aggregate_register.
 Hence, there is no duplication.

Cl 61 **SC Table 61-57** **P372** **L 37** # **467**
 Tom Mathey Independent

Comment Type **E** **Comment Status** **R**
 What in the PMI Aggregation capability does this text refer to?

SuggestedRemedy
 Add text for what was intended.

Proposed Response **Response Status** **C**
 REJECT.
 The description and use of the PMI Aggregation SPar(2) can be found in 61.3.12.2.

Cl 61 **SC Table 61-8** **P341** **L 32** # **462**
 Tom Mathey Independent

Comment Type **T** **Comment Status** **R**
 If Clause 45 and 61 are going to assign 8 bits for present and future PMA port types, then Table 61-8 needs to assign a unique signal to identify CO vs CPE port types.

SuggestedRemedy
 Assign a specific signal for CO vs CPE. Which direction should this signal be ??

Proposed Response **Response Status** **C**
 REJECT.
 The 8-bit PMA_PMD_type signal now also carries subtype information (1 bit), in resolution of comment #255/D2.0. The remaining 7-bit information space should be sufficient to accommodate relevant PMA types in the near future.
 The signal is defined from the PMA to the PCS, because a PMA/PMD instance is typically physically capable of acting as one subtype only, and it should be able to indicate this to the PCS.

Cl 61 **SC Table 61-8** **P341** **L 34** # **541**
 Cravens, George Mindspeed

Comment Type **T** **Comment Status** **A**
 Error in type description. 10Pass-TL CO subtype listed twice, and CPE subtype not listed. Change second entry to CPE subtype.

SuggestedRemedy
 Change second entry to CPE subtype.

Proposed Response **Response Status** **C**
 ACCEPT.
 See also comments #97 and #463.

Cl 61 **SC Table 61-8** **P341** **L 34** # **463**
 Tom Mathey Independent

Comment Type **E** **Comment Status** **A**
 Copy/paste text without edits.

SuggestedRemedy
 Change text 0x80 10P CO subtype to CPE.

Proposed Response **Response Status** **C**
 ACCEPT.
 See also comments #97 and #541.

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Cl 61A SC 61A.2 P556 L 10 # 302

Squire, Matt Hatteras Networks

Comment Type TR Comment Status D

I've received several questions that I can't answer that can benefit from being in the example. The basic question is how does the discovery mechanism work as links are coming up over time. E.g. The examples say you "read" the remote discovery information each time a new PMI comes up, but other PMIs may already be up, and their handshaking phase might be complete already.

For example, PMI 1 might come up first. Writing to its remote register and reading all PMIs possible at this point might say that PMI 1 is by itself. So it comes up, finishes handshaking, and goes into data mode and traffic starts to flow. Then PMI 2 comes up. What happens then? Do you write a new value to PMI2? How do you read it on PMI1 if handshaking is finished? Or do you just read it first and compare it to values you've already written?

Like I said, it seems either fuzzy or broken right now.

SuggestedRemedy

Clarify how read/write of remote registers happens after PMIs are already aggregated. Its very unclear.

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT IN PRINCIPLE.

Add note to end of 61A.2:

NOTE---Access of remote PMI Aggregation registers can only occur on links which are neither Up nor Initializing. For example, the LT system may access the remote_discovery_register through an inactive PMI to see if it contains a value already written elsewhere, and thus belongs to an aggregation group that has already begun to be activated, but it cannot access this register through already activated PMI links.

Cl 61A SC 61A.2 P558 L 28 # 258

Horvat, Michael Infineon Technologies

Comment Type E Comment Status R

numbering starts with "c"

SuggestedRemedy

start with "a"

Proposed Response Response Status C

REJECT.

Cl 61A SC 61A.2 P559 L 18 # 251

Horvat, Michael Infineon Technologies

Comment Type T Comment Status R

Insert example where entire ramp-up including remote discovery, PMI aggregation and line activation under the use of G.994.1 defined actions is described

SuggestedRemedy

See Riess_01_1103.pdf

Proposed Response Response Status C

REJECT.

Although the Figure contains useful information, adding it at this late stage may not allow sufficient opportunity for review. It doesn't correct any existing error in the current draft.

Cl 61A SC 61A.3 P562 L 35 # 259

Horvat, Michael Infineon Technologies

Comment Type TR Comment Status A

In the C-Code the scrambler is already removed, but the output is from the version with scrambler.

SuggestedRemedy

replace output with correct one.

Proposed Response Response Status C

ACCEPT.

See resolution of #471.

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Cl 61A SC 61A.3 P562 L 35 # 471

Tom Mathey Independent

Comment Type T Comment Status A

1. Table seems to be that from the pdf file which had the scrambler.
2. 'C' program includes only one of the two CRC.
3. Table includes only three of the 6 test cases.
4. CRC's need independent review.

SuggestedRemedy

1. Rerun program and include actual output.
2. enhance program to include both CRCs.
3. run program long enough to include all 6 test cases.
4. provide independent review of CRC's.

I will be happy to collect and compare CRC's with an actual implementation.
 Required sequence is for a MAC frame of 60 bytes from 0x01 to 0x3c, with 4 MAC CRC bytes, followed by PCS CRC.
 Include both types of PCS CRC. E-mail by Wed 5 Nov to <tmathy@concentric.net>

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
 1. Accept; output will be recomputed.
 2-4. Reject; although this would add interesting information, adding it at this late stage may not provide sufficient opportunity for review; also the remedy doesn't fix any existing errors in the current draft.

Cl 62 SC 61.2.2.5 P334 L 54 # 536

Brand, Richard Nortel Networks

Comment Type E Comment Status R

add comma behind links,

SuggestedRemedy

Proposed Response Response Status C

REJECT.

Cl 62 SC 62.2.4 P412 L 50 # 126

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status A

Editor's Notes should be removed prior to publication.

SuggestedRemedy

Remove Editor's Notes on page 412 and page 415.

Proposed Response Response Status C

ACCEPT.

Cl 62 SC 62.3.4.1 P415 L 22 # 418

Ed Eckert Ikanos Communication

Comment Type TR Comment Status D

Trellis coding has traditionally been supported by Ethernet PHYs, such as 1000 Base-T, and EFM long reach (2Base-TL). VDSL-2, the next generation DMT VDSL will also support Trellis coding. It is only logical that the proven benefits of Trellis coding be available to 10Pass-TS implementations. Trellis coding needs to be specified in the current 802.3ah text.

SuggestedRemedy

Add reference to sections 8.7, 8.8. and 8.9 of ITU-T G.992.1

Proposed Response Response Status Z

WITHDRAWN. PROPOSED REJECT.
 The comment is made against material that was previously approved and is unchanged in this draft.
 See also comment #328.

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Cl 62 SC 62.3.4.1 P416 L4 # 473

Behrooz Rezvani Ikanos Communication

Comment Type TR Comment Status R

Attention is called to the following where the tone spacing for 10PASS-TS of 4 KHz and 8 KHz are discussed

- Data rate performance: 4 KHz and 8 KHz tone spacings are about the same;
 - Delay: 8 KHz has half the delay compared to 4 KHz;
 - Burst noise protection: 125 usec symbol is better suited to protect against some class of burst noise, specifically those that are greater than 125 usec and less than 250 usec;
 - Power consumption: Because the 8 KHz tone spacing results in smaller geometry due to smaller block size (memory), better power efficiency is achieved;
 - Support of 100/100 Mbps up to 300 meters: This would require an extension of bandwidth up to 25 MHz. Because the number of tones are now set to 4000, 8 KHz becomes mandatory.
- Conclusion: Both 4 and 8 KHz tone spacing need to be supported in the 10Pass-TS EFM PHY.

SuggestedRemedy

- (1) In SC 62.3.4.1, in the reference to Subsection 8.2.1.1 of MCM-VDSL, ADD: "Additionally, 8.625 kHz tone spacing shall be supported as specified in 62.4.4.2."
- (2) In SC 62.4.4.2, line 8 ADD "Section 14" to the list.

Proposed Response Response Status U

REJECT.
Approve: 14 Don't Approve: 2 Abstain: 2

To be discussed with comment #327 (TR).
Support for 8.625 kHz tone spacing was removed from the draft in resolution of comments #622/D2.0 (TR), #621/D2.0 (TR), #824/D2.0 (T) and #1244/D2.0 (T), accepted by the Copper Sub Task Force at the Ancona meeting (Y:12, N:3, A:2).

- This was done to avoid the following problems:
- The 8.625 kHz spacing provides only 50% of the cyclic extension provided by the 4.3125 kHz systems. This creates additional ISI and performance degradation for loops longer than 700 meters.
 - Complications in interoperability of systems from different vendors: The two tone spacing will result in twice the number of interoperability tests to be performed (unless the standard clearly specifies when and where each one shall be used).
 - Avoid unnecessary increased crosstalk when mixing systems of 4.3125 kHz and 8.625 kHz tone spacing in the same cable (this scenario is explained in Annex C of T1.424/Trial-Use)

There is no new information or change to the draft that would necessitate the introduction of 8.625 kHz tone spacing at this point.

Cl 62 SC 62.3.4.4 P416 L40 # 129

Beck, Michael Alcatel Bell nv

Comment Type T Comment Status A

The sentence "Only one UPBO mode shall be supported as described below" seems to preclude the possibility of disabling UPBO, which would be useful for testing purposes (in fact, it is implicitly required by the presence of test cases in Annex 62B which have "UPBO off").

SuggestedRemedy

Replace this sentence with:
"It shall be possible to temporarily disable UPBO for performance testing purposes (as required by Annex 62B). In normal operation, only one UPBO mode shall be supported as described below:"

Add a sentence at the end of subclause 62A.3.4:
"The 10PASS-TS PHY shall additionally allow a profile value of `0' to be selected, which indicates that UPBO is to be disabled."

Add a 1-bit Enable UPBO register to Clause 45, and document its use in 62A.4.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Accept Clause 62 changes.

For Clause 45, it appears that bit 1.x.8 in 45.2.1.24 is not needed, and could be reassigned for this use.

Cl 62 SC 62.3.4.8 P418 L41 # 105

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status D

Space missing.

SuggestedRemedy

Add space after "to".

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

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Cl 62 SC 62.4.4.1 P 428 L 14 # 106

Beck, Michael Alcatel Bell nv

Comment Type T Comment Status A

PICS entry PMA-3 needs to be updated.

SuggestedRemedy

Replace PMA-3 with: "The 10PASS-TS PMA complies to the requirements of MCM-VDSL Section 9.3, with the exception of support for the fast path, support for V>1, NTR, and TPS-TC specific indicator bits as listed."

Proposed Response Response Status C

ACCEPT.

Cl 62 SC 62.4.4.2 P 429 L 19 # 107

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status D

In PICS entry PMD-5, wrong symbol for number of subcarriers is used.

SuggestedRemedy

In symbol "NSC", make letters "SC" subscript.

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

Cl 62 SC 62.4.4.2 P 431 L 29 # 108

Beck, Michael Alcatel Bell nv

Comment Type T Comment Status R

PICS entry PMD-31 does not represent an actual option (no optional "shall" statement in the text).

SuggestedRemedy

Remove PMD-31.

Proposed Response Response Status C

REJECT.

The comment is made against material that was previously approved and has not changed from the previous draft.

Cl 62A SC 62A.1 P 564 L 3 # 325

Beili, Edward Actelis Networks

Comment Type TR Comment Status R

2B defines 10 exemplary complete Profiles, representing specific sets of Data Rate, Power, PSD mask (Region) and Constellation. 10P defines only a single default complete profile. It would be beneficial for the ease of deployment/management, if we could define a number of complete profiles for 10P as well, representing specific sets of Bandplan, PSD mask, UPBO Reference PSD, Notching parameters and Payload rates.

SuggestedRemedy

Add a number of Complete Profiles for 10P in Annex 62A. Define a corresponding clause 30 management variable.

Proposed Response Response Status C

REJECT.

Annex 62A defines 29 Band plan and PSD mask profiles, 9 UPBO reference PSD profiles, 11 Band notch profiles and 99 Payload profiles. Therefore, there are already $29 * 9 * (2^{11}) * 99 = 52,918,272$ "complete profiles" defined. Assuming a logical combination of settings for a certain regulatory region, about 18,216 complete profiles are recommended for use. Subclause 62A.3.8 specifies one complete profile as the default profile. Annex 62B provides performance guidelines for various complete profiles.

Cl 62A SC 62A.3.7 P 569 L 22 # 118

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status D

Typo: "compatable".

SuggestedRemedy

Replace with "compatible".

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

Cl 62B SC 3 P L # 417

Bernard, Debbasch GlobespanVirata

Comment Type TR Comment Status R

Based on the draft P802.3ah/D2.2, 12 dB Gap and 0 back-off tone in the band-transition areas, simulation results for test #'s 2, 19, 21, 25, 29, and 30 show test results that fall excessively short of the objectives specified in Table 62B-1.

SuggestedRemedy

We recommend that these test be either removed or modified such that the performance objective in each test is achievable considering reasonable implementation losses. We are planning to present our simulation results at the task force meeting.

Proposed Response Response Status U

REJECT.

See discussion of comment #416.

P802.3ah Draft 2.1 Comments

Cl **62B** SC **3** P L # **416**

Bernard, Debbasch GlobespanVirata

Comment Type **TR** Comment Status **R**

Based on the draft P802.3ah/D2.2, 12 dB Gap and 0 back-off tone in the band-transition areas, the transceiver compliant with the definition in clauses 62 and 62B cannot physically meet the bit rate objectives in test case #10 and #20 in table 62B-1.

SuggestedRemedy

Test cases #10 and #20 shall be deleted from the specification.

Proposed Response Response Status **U**

REJECT.

MOTION TO ADJOURN

Eckert/Langston

Approve: 8 Don't Approve: 2 Abstain: 1 PASS

MOTION TO POSTPONE AND MAKE A SPECIAL ORDER FOR 3PM.

(Eckert/Fanfoni)

Approved by voice vote.

MOTION TO ACCEPT COMMENT IN PRINCIPLE, ACCEPT RESULTS AS PRESENTED, INCLUDING THE TEST ASSUMPTIONS USED.

(Simon/Sorbara)

AMENDMENT: And direct the Editor to remove references to 100 Mbps Downstream, 75 Mbps Downstream and 35 Mbps Upstream from Annex 61A.

FRIENDLY

PROPOSED ACCEPT IN PRINCIPLE.

See resolution of comment #505.

Cl **62B** SC **62B.3** P **541** L # **99047**

Sorbara, Massimo GlobespanVirata, Inc.

Comment Type **TR** Comment Status **A** D2.0 #1241

The transceiver compliant with the definitions in clauses 62 and 62B cannot physically meet the bit rate objectives in test cases#10 and #21 in table 62B-1. We recommend that test cases #10 and #21 be deleted from the specification.

SuggestedRemedy

We recommend that test cases #10 and #21 be deleted from the specification.

Proposed Response Response Status **U**

ACCEPT IN PRINCIPLE.

See: #1245.

Cl **62B** SC **62B.3** P **541** L **9** # **99048**

Barrass, Hugh Cisco Systems

Comment Type **TR** Comment Status **R** D2.0 #882

Users should expect a high degree of interchangeability between compliant devices. In order to achieve this it is important that required performance levels are near to the maximum achievable within the standard. This will ensure the minimum of variation from on device to another without unduly constraining implementation.

Many of the distances specified in Table 62B-1 are significantly below the levels achieved by devices tested by T1E1.4 or capacity simulations. The required distances must be increased to more challenging levels as shown in the remedy.

Additionally, the distances specified for notched profiles and very high rate profiles must be shown to be near the theoretical limit for the test scenario.

Furthermore, given that a number of implementations are available which already comply with the PMA/PMD specification, it is expected that physical device testing should be performed according to this Clause prior to Sponsor Ballot.

SuggestedRemedy

Change the distances of the tests in Table 62B-1 as follows:

Test number : Change distance to

1 1100
2 750
3 1000
4 600
5 750

13 350
15 900
17 1000
18 1200
19 1400

Proposed Response Response Status **U**

REJECT.

The Olympic test results, the testing method, and testing parameters were designed as technology evaluation and as such should be treated only as guidelines. The reaches indicated in the table are sufficient to indicate basic functionality and performance.

Following changes have been made in resolution of comment #1245:

Tests 2 and 6: use profile 18
Change data rate on 10 and 21 to 100/35.
Tests 11: remove entry
Test 12: change noise to AWGN
Test 14: change loop length to 650m
Test 15, 17, 26, 28 : remove UPBO

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Test 18: change loop length to 750m and use profile 4
 Test 17: use profile 4
 Tests 28, 29: use profile 4

The Chair is directed by the group to ensure that simulation data is made available to support these values and to rebutt the proposed values in comment #882.

CI 62B SC 62B.3 P577 L1 # 505

O'Mahony, Barry Intel

Comment Type T Comment Status R

test Cases in Table 62B-1 need updating per Copper STF teleconferences consensus.

SuggestedRemedy

Change Table 62B-1 test cases entries to match those in
http://www.ieee802.org/3/efm/public/nov03/copper/62Bd2_2CMPR1.pdf

Proposed Response Response Status C

REJECT.
 See discussion of comment #416.

CI 62B SC 62B.3 P577 L24 # 119

Beck, Michael Alcatel Bell nv

Comment Type T Comment Status R

First instance of Test 11 (strikethrough) is obsolete.

SuggestedRemedy

Remove frist instance of Test 11 (strikethrough) and associated footnote.

Proposed Response Response Status C

REJECT.
 THE COPPER SUB TASK FORCE DID NOT REACH AGREEMENT ON A RESOLUTION FOR THIS COMMENT.
 See discussion of comment #416.

PROPOSED ACCEPT.

CI 63 SC 63.1.5 P435 L49 # 248

Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

Order of remote discovery PMI aggregation and line activation not clear.

SuggestedRemedy

Add a note that line activation takes place after entire discovery and PMI aggregation operation.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
 Add text:
 NOTE---Line activation takes place after entire discovery and PMI aggregation operation.

CI 63 SC 63.1.5 P436 L23 # 249

Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

Reference not included anymore (applies also to line 26)

SuggestedRemedy

remove reference

Proposed Response Response Status C

ACCEPT.

CI 63 SC 63.2.1 P436 L53 # 109

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status D

Excessive capitalization.

SuggestedRemedy

Change "Octets" to "octets".

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

CI 63 SC 63.2.2.1 P437 L42 # 110

Beck, Michael Alcatel Bell nv

Comment Type T Comment Status R

This line throws away two perfectly good framing bits (sbid1, sbid2), while in 63.2.2.2.1 a lot of overhead is created to transmit two PCS status bits by means of EOC messages.

SuggestedRemedy

Change line 42 to:
 "sbid1 is defined as 'EFM TC Freewheeling', to be asserted if and only if the signal local_TC_freewheeling on the alpha(beta)-interface (see 61.2.3.2) is asserted.
 sbid2 is defined as 'EFM TC Not Synced', to be asserted if and only if the signal local_TC_out_of_sync on the alpha(beta)-interface (see 61.2.3.2) is asserted."
 Remove subclause 63.2.2.2.1 and the Editor's Note that precedes it.
 On page 438, line 7, remove sentence "Two new EOC messages...".
 On page 439, line 1, remove heading 63.2.2.2.2, as this is now the only level-5 heading in subclause 63.2.2.2, which is a violation of the Style Guide.

Proposed Response Response Status C

REJECT.
 Task Force motion resolving comment #85 applies.

THE COPPER SUB TASK FORCE DID NOT REACH AGREEMENT ON A RESOLUTION FOR THIS COMMENT.

PROPOSED ACCEPT.
 Needs discussion in Sub Task Force. To be discussed with comments #85 and #415.

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Cl 63 SC 63.2.2.2 P 438 L 10 # 125

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status A

Editor's Notes should be removed prior to publication.

SuggestedRemedy

Remove Editor's Notes on page 438 and page 441.

Proposed Response Response Status C

ACCEPT.

Cl 63 SC 63.2.2.2.1 P 438 L 16 # 415

kimpe, marc adtran

Comment Type T Comment Status A

There is no latency guarantee on an EOC message hence the message indicating an out of sync condition might be stuck behind other EOC messages and take a few frames in order to get to the other side. A change in the idle frame pattern is more elegant as it operates as the same layer as the problem ie a synchronization problem in the TC-layer is flagged by a change in the idle frame pattern of the same layer rather than going one layer down in the EOC.

SuggestedRemedy

Delete the EOC messages and signal the out of sync by a change in the idle pattern of clause 61.

Proposed Response Response Status C

ACCEPT.
Task Force motion resolving comment #85 applies.

THE COPPER SUB TASK FORCE DID NOT REACH AGREEMENT ON A RESOLUTION FOR THIS COMMENT.

PROPOSED REJECT.

Needs discussion in Sub Task Force. To be discussed with comments #110 and #85. The 64/65-octet encapsulation method has received a lot of attention during Task Force review, and the proposed changes may compromise the stability of the current TC specification.

Cl 63 SC 63.2.2.2.2 P 440 L 1 # 250

Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

Wrong message ID

SuggestedRemedy

Correct one is 140

Proposed Response Response Status C

ACCEPT.

Cl 63 SC 63.3.2 P 440 L 48 # 117

Beck, Michael Alcatel Bell nv

Comment Type T Comment Status A

The sentence "G.991.2 Annex A (Regional Requirements - Region 1), Annex B (Regional Requirements - Region 2) and Annex C (Regional Requirements - Region 3) are regionally applicable, as specified." is too weak. The (new) mandatory PICS entry PROF-3 (Annex 63A) states that all listed profiles must be supported, which implies that support for Annex A and Annex B is mandatory.

SuggestedRemedy

Change the quoted sentence to: "The 2BASE-TL PMD shall support the requirements of G.991.2 Annex A (Regional Requirements - Region 1) and Annex B (Regional Requirements - Region 2) with the exception of performance requirements, which are replaced by Annex 63B."

In 63.4.4.2 (PICS for SHDSL based PMD), replace PMD-4 with "The 2BASE-TL PMD supports the requirements of G.991.2 Annex A (Regional Requirements - Region 1) and Annex B (Regional Requirements - Region 2) with the exception of performance requirements, which are replaced by Annex 63B."

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
Adopted by voice vote.

In order to have a single device supporting annex A & B, the span powering option of the SHDSL standard has to be out of scope otherwise it leads to different hardware.

In addition to the remedy suggested by the commenter, add "Section A.5.3 Span powering is out of scope" to the end of section 63.3.2.4 and "Section B.5.3. Span Powering is out of scope" to the end of section 63.3.2.5.

EFM also needs to reflect the agreement within ITU to change the return loss for annex B from 14 to 12 dB which is captured in G.shdsl.bis & ETSI TM6 but not in G.991.2 and the amendment document. Therefore add the following sentence to section 63.3.2.5. "The RLmin value of section B.5.2 is modified from 14 to 12 dB for the purpose of 2BASE-TL."

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Cl 63A SC 63A.3 P588 L40 # 252

Horvat, Michael Infineon Technologies

Comment Type T Comment Status A

PMI aggregation is the only way to bundle links; up to 32 links can be bundled.

SuggestedRemedy

Remove 'M pair' and replace it with 'PMI aggregation up to 32 links'

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

This section does not describe the use of PMI aggregation, but the rationale for choosing the bitrates for the different profiles. Since the profiles data rates are indeed based on an aggregation of 1 to 4 pairs, we would suggest to use the following wording:

Change

The profiles of Table 63A-1 will generate a net data rate greater than 2 Mb/s at the MII interface on M pairs where M is between 1 and 4. Note that the profiles are defined on a single pair basis. The aggregation mechanism is specified in Clause 61. The data rate is the closest multiple of 64 kb/s greater than a net data rate of 2 Mb/s plus the corresponding 64/65B encapsulation overhead divided by M. The line rate has an additional 8 kb/s of SHDSL overhead.

to

The profiles of Table 63A-1 will generate a net data rate greater than 2 Mb/s at the MII interface on 1 to 4 pairs. Note that the profiles are defined on a single pair basis. The aggregation mechanism is specified in Clause 61. The data rate is the closest multiple of 64 kb/s greater than a net data rate of 2 Mb/s plus the corresponding 64/65-octet encapsulation overhead divided by the number of pairs. The line rate has an additional 8 kb/s of SHDSL overhead.

Cl 63A SC 63A.3 P588 L42 # 115

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status A

Wrong name for encapsulation.

SuggestedRemedy

Replace "64/65B encapsulation" with "64/65-octet encapsulation".

Proposed Response Response Status C

ACCEPT.

Cl 63A SC 63A.3 P588 L45 # 87

Squire, Matt Hatteras Networks

Comment Type T Comment Status D

Why is the default profile Annex B? Seems like it should be profile #2 instead of profile #7 (Annex A).

Guess my N.A. bias is showing thru...

SuggestedRemedy

Change default profile to #2 (Sames rates, Annex A).

Proposed Response Response Status Z

WITHDRAWN. PROPOSED REJECT.

A region B profile was selected as default in analogy with Annex 62A (for 10PASS-TS, the region B profiles are better suited to support symmetric services). Although there is no preference for one region or the other, it was the opinion of the Copper Sub Task Force that there should be consistency between Annex 62A and Annex 63A in this matter.

Cl 63A SC 63A.4 P588 L52 # 253

Horvat, Michael Infineon Technologies

Comment Type E Comment Status A

wrong cross ref

SuggestedRemedy

correct cross ref is 45.2.1.34

Proposed Response Response Status C

ACCEPT.

Cl 63A SC 63A.5 P589 L49 # 116

Beck, Michael Alcatel Bell nv

Comment Type E Comment Status D

Numbering of PICS entries doesn't reflect the fact that these are 2BASE-TL specific.

SuggestedRemedy

Change entry numbers "PROF-n" to "2BProf-n".

In Annex 63B, change entry numbers "PERF-n" to "2BPerf-n".

Same for PMA and PMD entries in Clause 62 (prepend 10P) and Clause 63 (prepend 2B).

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

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Cl 64 SC P L # 475
 Maislos, Ariel Passave
 Comment Type T Comment Status D
 verify counters match Clause 30 entries
 SuggestedRemedy
 incremetn counters in relevant state-diagrams in case of miss-match
 Proposed Response Response Status Z
 WITHDRAWN.
 Volunteer is needed to identify the relevant state diagrams and locations to add counters

Cl 64 SC P L # 474
 Maislos, Ariel Passave
 Comment Type E Comment Status D
 Verify PICS match shall
 SuggestedRemedy
 cross-check PICS to shalls in draft
 Proposed Response Response Status Z
 WITHDRAWN.

Cl 64 SC 64.1 P 448 L 25 # 419
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status A
 Wrong reference
 SuggestedRemedy
 Change reference to Clause 67
 Proposed Response Response Status C
 ACCEPT.

Cl 64 SC 64.1 P 449 L 12 # 143
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status A
 Wrong reference
 SuggestedRemedy
 Change to 65.1.3.4.2
 Proposed Response Response Status C
 ACCEPT.

Cl 64 SC 64.1.2 P 450 L 38 # 147
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status A
 Wrong reference
 SuggestedRemedy
 Change to 65.1.3.4
 Proposed Response Response Status C
 ACCEPT.

Cl 64 SC 64.1.2 P 450 L 40 # 278
 Glen Kramer Teknovus
 Comment Type T Comment Status D
 The decision whether to use same or different MAC addresses for each MAC in the OLT is an implementation decision and is completely out of scope of 802.3 standard
 SuggestedRemedy
 Remove the text prescribing single MAC address.
 Proposed Response Response Status Z
 WITHDRAWN.

Cl 64 SC 64.1.2 P 450 L 45 # 76
 Shimon Muller Sun Microsystems, Inc
 Comment Type TR Comment Status A
 The decision taken at the last meeting regarding the enforcement of the inter-frame spacing in the OLT has made half duplex operation in the MAC a mandatory requirement. I could not find this requirement specified anywhere in this draft.
 SuggestedRemedy
 1. At the end of this subclause add the following paragraph:
 "All the MAC instances in the OLT shall be configured for the half duplex mode of operation, as defined in Clause 4. In the ONU, the MAC may be configured for either the half duplex or the full duplex modes."
 2. Add a PICS entry to reflect the above addition.

Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 The solution depends on the outcome of half-duplex discussion (#96)
 According to current specification, both ONU MAC and OLT MAC should be in half-duplex mode.
 Corresponding explanation is to be added to C64 and C65.
 PICS entry to be added to C64

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Cl 64 SC 64.2.2.2 P454 L11 # 89

Brown, Benjamin Independent

Comment Type TR Comment Status R

Default values are being used inappropriately. The text from 36.2.5 states:

"The notation used in the state diagrams in this clause follow the conventions in 21.5. State diagram variables follow the conventions of 21.5.2 except when the variable has a default value. Variables in a state diagram with default values evaluate to the variable default in each state where the variable value is not explicitly set."

This implies a couple of things:

default values are only used on outputs of state machines
 default values are only used for variables that change value implicitly, when the state diagram changes state

The state diagrams in Clause 64 violate both of these conventions.

SuggestedRemedy

Apply default values only to variables that are outputs of state diagrams
 Apply default values only to variables that are not explicitly assigned when changing state.

Proposed Response Response Status U

REJECT.
 Commenter agreed to submit a complete list of variables to be modified

Cl 64 SC 64.2.3.1 P457 L37 # 279

Glen Kramer Teknovus

Comment Type TR Comment Status A

The definition of tail_guard is wrong for the case when FEC is implemented. With FEC, the tail_guard should account for the additional length needed to transmit parity octets and extended EPD.

Because the length of parity data depends on length of Ethernet frame, the tail_guard cannot be a constant.

SuggestedRemedy

Update definition of tail_guard according to the comment.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

1. Keep tail_guard constant as it is
 2. Introduce variable 'reserve_space'
 This variable holds the additional space to be reserved at the end of upstream transmission at the ONU in units of octetes. It includes tail_guard plus an additional overhead required for FEC parity octets if FEC is enabled.

3. In state CHECK SIZE add the following code
 if(FEC_Enabled)
 reserve_space = tail_guard + FEC_Overhead(length)
 else
 reserve_space = tail_guard

4. In transitions from CHECK SIZE space replace tail_guard with reserve_space.

Definition of FEC_Overhead(length) should be added (copy from 65.2.2.2.2)

Cl 64 SC 64.2.3.2 P458 L49 # 90

Brown, Benjamin Independent

Comment Type TR Comment Status R

Variables are defined for each state machine they appear in (e.g., transmitEnable, transmitInProgress, transmitPending). This is confusing at least and is very prone to mistakes. The majority of these state diagrams have interdependencies and it is very confusing to look at one definition for an input to state diagram A and another definition for an output of state diagram B, when in reality these 2 variables are exactly the same thing.

SuggestedRemedy

Combine all of the Constants, Variables, Functions, Timers & Messages for the various state diagrams and reconcile the numerous copies of the individual variables.

Proposed Response Response Status U

REJECT.

Commenter agreed to submit a list of state diagrams whose definitions should be combined

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Cl 64 SC 64.2.3.3 P459 L 20 # 280

Glen Kramer Teknovus

Comment Type E Comment Status A

Definition of timestamp() function is duplicated on line 30

SuggestedRemedy

Remove duplicate definitions

Proposed Response Response Status C

ACCEPT.

Cl 64 SC 64.2.3.6 P460 L 18 # 283

Glen Kramer Teknovus

Comment Type T Comment Status A

opcode = data[1:16]
timestamp=data[16:47]

Timestamp parsing is not correct (timestamp overlaps last bit of opcode).

SuggestedRemedy

Change text to "timestamp=[17:48]" or "opcode=[0:15]"
Similar changes should be made in Figures 64-10 and 64-12

Proposed Response Response Status C

ACCEPT.

Change the text to
opcode=data[0:15]

Make the change in the state diagrams 64-9, 64-10, 64-11, 64-12

Cl 64 SC 64.2.3.6 P460 L 6 # 281

Glen Kramer Teknovus

Comment Type T Comment Status A

In state diagrams 64-9, 64-10, and 64-11, parameter "data" is received as part of TransmitFrame function call, but "m_sdu" is used in MA_DATA.indication and in timestamp() function call.
No definitions is given to either parameter. To add to the confusion, "data" is a bit array with base 1, and "m_sdu" is a byte array with base 0.

SuggestedRemedy

1. Use base 0 for both "data" and "m_sdu" arrays.
2. Redefine both arrays to be byte arrays.
3. Add definition explaining that "m_sdu" includes length/type as the first two octets.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

In PASS TO MAC CLIENT state, replace m_sdu with concatenation of Length/Type and data.

Apply the change to Figs. 64-9 and 64-10.

Cl 64 SC 64.2.3.6 P462 L 13 # 282

Glen Kramer Teknovus

Comment Type T Comment Status A

In WAIT FOR TRANSMIT state, opcode parsing code is not correct (Compare to state digrams 64-9, 64-10, 64-12).

SuggestedRemedy

change "m_sdu[1:16]" to "data[1:16]"

Proposed Response Response Status C

ACCEPT.

Cl 64 SC 64.2.3.6 P462 L 26 # 284

Glen Kramer Teknovus

Comment Type T Comment Status D

Inconsistent timestamping methods in OLT and in ONU.
In OLT (Figure 64-11): timestamp(m_sdu, localTime)
In ONU (Figure 64-12): data[16:47] = localTime

SuggestedRemedy

Use the same process in both state diagrams.

Proposed Response Response Status Z

WITHDRAWN.

Discuss whether an additional description of timestamp() function is required to illustrate that the same reference point is to be used in setting and getting timestamp values

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Cl 64 SC 64.3 P L # 480
 Maislos, Ariel Passave
 Comment Type E Comment Status D
 shorthand form is usewd in 64.3.10
 SuggestedRemedy
 use additional shorthand forms to add clarity to diagrams in 64.3
 Proposed Response Response Status Z
 WITHDRAWN.

Cl 64 SC 64.3.1 P 464 L 15 # 285
 Glen Kramer Teknovus
 Comment Type E Comment Status D
 "Transmitting and receiving frames as if it was connected to a dedicated link" is an incomplete sentence.
 SuggestedRemedy
 Rephrase the paragraph as:
 "Multi-point MAC Control enables a MAC Client to participate in a point-to-multi-point optical network by allowing it to transmit and receive frames as if it was connected to a dedicated link."
 Proposed Response Response Status Z
 WITHDRAWN.

Cl 64 SC 64.3.1 P 464 L 30 # 286
 Glen Kramer Teknovus
 Comment Type E Comment Status D
 "When operated, the network is assymetrical, with the OLT assuming the role of master, and the ONU assuming the role of slave."
 What about the case when network is not operational?
 SuggestedRemedy
 Modify the above text as:
 "The operation of P2MP network is assymetrical, with the OLT assuming the role of master, and the ONU assuming the role of slave."
 Proposed Response Response Status Z
 WITHDRAWN.

Cl 64 SC 64.3.10.2 P 482 L 10 # 299
 Glen Kramer Teknovus
 Comment Type T Comment Status A
 Variable "time" is not used in state diagrams.
 SuggestedRemedy
 Remove unneeded definition
 Proposed Response Response Status C
 ACCEPT.

Cl 64 SC 64.3.10.2 P 482 L 26 # 149
 Lynskey, Eric UNH-IOL
 Comment Type T Comment Status A
 The variable syncTime should also include the amount of time necessary for the PCS to acquire synchronization once the data is decodable. The number of idle characters needs to also take into account the amount of time required by the synchronization state machine to complete. This is a non-negligible amount of time as it will take a minimum of 10, 10-bit codes, or 80ns to achieve sync. The presence of errors could increase this time, as the idle stream is not covered by the RS forward error correction, if it is used. Any single bit error could force the synchronization process to restart, thus increasing the amount of idle necessary to send before a frame.
 SuggestedRemedy
 Modify sentence to read "It counts in time_quanta units from the point where transmission output is stable to the point where synchronization has been achieved." Change default value to 336 nano seconds.

A separate comment has also been submitted against Clause 65 to make similar changes.
 Proposed Response Response Status C
 ACCEPT.

Cl 64 SC 64.3.10.6 P 484 L 45 # 293
 Glen Kramer Teknovus
 Comment Type E Comment Status A
 State transition is shown in wrong font.
 SuggestedRemedy
 Fix the font
 Proposed Response Response Status C
 ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 64 SC 64.3.10.6 P 485 L 20 # 294

Glen Kramer Teknovus

Comment Type T Comment Status A

A state or procedure to parse GATE message in ONU is missing (Figure 64-26). As a result, sync_time is used without ever being initialized.

SuggestedRemedy

Add GATE parsing procedure

Proposed Response Response Status Z

WITHDRAWN.

Add GATE parsing code to the beginning of INCOMING GRANT state

Cl 64 SC 64.3.10.6 P 486 L 20 # 295

Glen Kramer Teknovus

Comment Type T Comment Status D

In state TURN LASER ON, calculation of stopTime is wrong. LaserOnTime and syncTime are part of the grant length.

SuggestedRemedy

Change
 "stopTime = currentGrant.start + currentGrant.length - laserOffTime
 - laserOnTime - syncTime"

to
 "stopTime = currentGrant.start + currentGrant.length - laserOffTime"

Proposed Response Response Status Z

WITHDRAWN.

Cl 64 SC 64.3.10.6 P 486 L 24 # 300

Glen Kramer Teknovus

Comment Type TR Comment Status D

In transition from TURN LASER ON to START TX state, the label IDLE_Timer_done was changed to UCT.

This modification to state diagram are made without a corresponding comment.

SuggestedRemedy

Rollback erroneous change

Proposed Response Response Status Z

WITHDRAWN.

Cl 64 SC 64.3.10.6 P 486 L 28 # 297

Glen Kramer Teknovus

Comment Type T Comment Status A

Definition of "discoveryGrantLength" is missing.

SuggestedRemedy

Add definition as follows:

discoveryGrantLength -
 This variable represents the duration of ONU's transmission during discovery attempt. The value of discoveryGrantLength includes receiver settling and synchronization time (syncTime), MPCPDU transmission time and tail-guard as defined in #cross ref...#.

(note that tail_guard is not constant, so discoveryGrantLength is not constant either)

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

discoveryGrantLength -
 This constant represents the duration of ONU's transmission during discovery attempt. The value of discoveryGrantLength includes receiver settling and synchronization time (syncTime), MPCPDU transmission time and tail-guard as defined in #cross ref...#.

Cl 64 SC 64.3.10.6 P 486 L 31 # 296

Glen Kramer Teknovus

Comment Type T Comment Status A

Timer "grant_window_time" should be called "gntWinTmr"

SuggestedRemedy

Change timer name

Proposed Response Response Status C

ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 64 SC 64.3.3.2 P452 L 45 # 99009

Thompson, Geoff

Nortel

Comment Type TR Comment Status R D2.0 #1012

Point to Point emulation is an out of scope function that is only required for bridging. As closely as I can tell, from the carrier point of view, it is not part of their requirements. Carriers want a non-peer network that does not support direct ONU to ONU communication on a peer basis.

SuggestedRemedy

Split P2P Emulation from EFM as a separate PAR for joint development with 802.1 to be formulated as a separate amendment to 802.1D (similar to 802.11 & 802.12) in clause 6.5 distinct from 6.5.1. Further have PON as a separate (Carrier oriented) 802.3 standard that is more fully oriented to the market requirements of carriers.

Proposed Response Response Status U

REJECT.

Splitting the P2P emulation as an 802.1 project is not possible as the function is located wholly inside the RS layer between the MAC and the PHY, a location that is not exposed to an 802.1 project.

In regards to dividing the 802.3 standard, see 952.

Cl 64 SC 64.3.3.2 P464 L 51 # 145

Lynskey, Eric

UNH-IOL

Comment Type TR Comment Status A

I can find no text that describes the usage of the mode bit for an OLT. The definition states it may be a 0 or a 1, but does not describe how it is to be used. The only reference to the values this bit should take are in Figure 64-14, when describing the discovery process. The behavior for the reception of the mode and LLID bits is clearly defined in 65.1.3.4.2, but the behavior for transmission is not defined.

A list of rules previously existed up until D1.414. Comment 796 against D1.414 sought to move these rules to Clause 65. The comment was accepted in principle and stated that something would be done to either reword or move these rules. The entire list was deleted in D1.732 and has not been seen since.

SuggestedRemedy

Reprint the list of rules from D1.414 or create a new list describing the rules for transmitting the mode and LLID bits.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Remove mode and LLID fields from figure 64-14 (page 468)

In 64.3.3.3 change the last sentence to SCB channel configuration as well as filtering and marking of frames for support of SCB is defined in #CrossRef subclause 65.1.2.4.2.#

Add text "The SCB MAC handles all downstream broadcast traffic, but is never used in the upstream direction for client traffic, except for client registration".

Add additional text to clause 65 explaining what LLID and mode values should be assigned to support SCB operation as suggested by comment #64001

Cl 64 SC 64.3.3.2 P465 L 4 # 146

Lynskey, Eric

UNH-IOL

Comment Type E Comment Status A

Wrong reference

SuggestedRemedy

Change to 65.1.3.4.2

Proposed Response Response Status C

ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 64 SC 64.3.3.3 P465 L 23 # 144
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status A
 Wrong reference.
 SuggestedRemedy
 Change reference to 65.1.3.4.2
 Proposed Response Response Status C
 ACCEPT.

Cl 64 SC 64.3.4 P466 L 34 # 287
 Glen Kramer Teknovus
 Comment Type E Comment Status A
 Extra space in formula to calculate RTT
 SuggestedRemedy
 Remove extra space and fit the formula on one line
 Proposed Response Response Status C
 ACCEPT.
 Same as #479

Cl 64 SC 64.3.5 P466 L 49 # 288
 Glen Kramer Teknovus
 Comment Type E Comment Status D
 "Variable" should be "Variables"
 SuggestedRemedy
 Fix as shown above
 Proposed Response Response Status Z
 WITHDRAWN.

Cl 64 SC 64.3.8.3 P470 L 15 # 289
 Glen Kramer Teknovus
 Comment Type T Comment Status A
 Function max(A,B) is not used in state diagrams.
 SuggestedRemedy
 Remove unneeded definition.
 Proposed Response Response Status C
 ACCEPT.

Cl 64 SC 64.3.8.4 P470 L 33 # 290
 Glen Kramer Teknovus
 Comment Type T Comment Status A
 gntWinTmr is not used in discovery procesisng.
 SuggestedRemedy
 Remove unneeded definition
 Proposed Response Response Status C
 ACCEPT.

Cl 64 SC 64.3.8.5 P470 L 46 # 291
 Glen Kramer Teknovus
 Comment Type T Comment Status A
 MA_CONTROL.request(DA, gate, discovery, startTime, grantLength, discoveryLength)
 Definitions for parameters "gate" and "discovery" are missing
 SuggestedRemedy
 Add missing definitions or remove the parameters altogether
 Proposed Response Response Status C
 ACCEPT.

Definitions for gate and opcode are to be added

Cl 64 SC 64.3.8.6 P472 L 3 # 141
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status D
 States that figures 17, 18, and 19 are only performed for broadcast MAC. Also states that figures 19 and 20 are performed for every MAC.
 SuggestedRemedy
 Change first sentence to figures 17 and 18 are only performed for broadcast MAC.
 Proposed Response Response Status Z
 WITHDRAWN. PROPOSED ACCEPT IN PRINCIPLE.

Is it correct to say "... 19 and 20 are performed for every MAC"
 or should we say "... 19 and 20 are performed for every MAC except the the MAC attached to broadcast channel"

P802.3ah Draft 2.1 Comments

Cl 64 SC 64.3.8.6 P 473 L 11 # 498

Booth, Brad Intel

Comment Type E Comment Status R

State machine transition lines should be solid with the transition label beside the line, not breaking the line.

SuggestedRemedy

Fix all the state diagrams to not have broken lines and the transition label beside the line. Transition lines must also exit the bottom of the box and enter at the top of the box.

Proposed Response Response Status C

REJECT.

Volunteer is needed to clean up state machines

Cl 64 SC 64.3.8.6 P 473 L 16 # 292

Glen Kramer Teknovus

Comment Type T Comment Status D

The following notation is very confusing
 TransmitFrame(DA, SA, MAC Control, opcode = GATE|startTime|grantLength|discoveryFlag = true)

SuggestedRemedy

1. Create variable "data" on a separate line.
2. Call TransmitFrame function with the same set of parameters as is used in its definition.

Proposed Response Response Status Z

WITHDRAWN.

Cl 64 SC 64.3.8.6 P 475 L 22 # 142

Lynskey, Eric UNH-IOL

Comment Type TR Comment Status A

Figure 64-19 controls the discovery process for an OLT. After transmitting the register frame in the REGISTER state the state machine waits until a gate message has been transmitted and the initialGate variable to be set TRUE. This variable is only set by Figure 64-25. Figure 64-25 cannot set initialGate until registered = TRUE. The registered variable is only set by Figure 64-19, and is not set until the REGISTERED state. You cannot get to the REGISTERED state until initialGate = TRUE. Therefore, you can never register and never send the first gate message.

SuggestedRemedy

Courtesy of Glen Kramer:

I think the better way is to modify Fig. 64-19 and instead of waiting for a initialGate transition, wait for MA_CONTROL.Request to transmit GATE message. This will eliminate the need to have initialGate variable, which is confusing by itself.

The only modification to 64-19 is the transition from WAIT FOR GATE to WAIT FOR REGISTER_ACK should be labeled as MACR(DA,gate,n, start[4], length[4], discovery, force_report[4])

Proposed Response Response Status C

ACCEPT.

Definition of initialGate is to be removed

Cl 64 SC 64.4.2 P 489 L 12 # 298

Glen Kramer Teknovus

Comment Type T Comment Status A

Reports are forced per individual grant, not per GATE.

SuggestedRemedy

Change sentence
 "A REPORT frame should be issued at the corresponding transmission opportunity indicated in this GATE"
 to
 "A REPORT frame should be issued at the corresponding transmission opportunity indicated in this grant"

Apply similar changes for each grant

Proposed Response Response Status C

ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 64 SC all P L # 99010

Brand, Richard Nortel Networks

Comment Type TR Comment Status R D2.0 #843

The concept of point to point emulation is foreign to 802.3 and was introduced to allow compliance with 802.1D bridging

SuggestedRemedy

Move this section to new document and as a part of the revised PAR, remove requirement to comply with 802.1

Proposed Response Response Status C

REJECT.

Compliance to 802.1D is a requirement of our PAR and of the LMSC policies and procedures.

In regards to dividing the 802.3 standard, see reponse to comment 952.

Cl 64 SC figure 64-13 P 466 L 34 # 479

Maislos, Ariel Passave

Comment Type E Comment Status A

formula is spread on two lines

SuggestedRemedy

shorten formula

Proposed Response Response Status C

ACCEPT.

Same as #287

Cl 64 SC Figure 64-28 P 479 L 16 # 99011

Tae-Whan Yoo ETRI

Comment Type TR Comment Status R D2.0 #1014

All of the message fields in GATE MPCPDU except "Number of grants/Flags" are in even number of octets. It is, therefore, inconvenient to interpret the messages below the "Number of grants/Flags" in GATE MPCPDU when the logic is implemented to process in other than 8 bits, say 16 bits or 32 bits.

SuggestedRemedy

It is recommended to add one octet after "Number of grant/Flags" for two purposes:

- 1) To enable the messages after "Flags" to be interpreted in the unit of even octets.
- 2) To provide a reserved field for future application.

Proposed Response Response Status U

REJECT.

All parameters are specified using the required number of bits.

A compact form is required for the message.

Vote on comment

Approve response (reject comment)

Yes: 8

No: 1

Abstain: 3

Cl 64 SC Figure 64-30 P 481 L 14 # 99012

Tae-Whan Yoo ETRI

Comment Type TR Comment Status R D2.0 #1015

All of the message fields in REPORT MPCPDU except "Number of queue sets" and "Report bitmap" are in even number of octets. It is, therefore, inconvenient to interpret the messages below the "Number of queue sets" and "Report bitmap" in REPORT MPCPDU when the logic is implemented to process in other than 8 bits, say 16 bits or 32 bits.

SuggestedRemedy

It is recommended to add one octet after "Number of queue sets" and another single octet after "Report bitmap" for two purposes:

- 1) To enable the messages to be interpreted in the unit of even octets.
- 2) To provide a reserved field for future application.

Proposed Response Response Status U

REJECT.

All parameters are specified using the required number of bits.

A compact form is required for the message, where there is a shortage of space.

Vote on comment

Approve response (reject comment)

Yes: 9

No: 1

Abstain: 3

P802.3ah Draft 2.1 Comments

Cl 65 SC 54.2.2.2 P512 L21 # 157
Lynskey, Eric UNH-IOL

Comment Type T Comment Status A

The lIdle funtion is used to determine whether tx_code-group is /T/, /R/, or a code-group in /I/. The text should be modified to make it explicit that a code group in /I/, which could be a K28.5, D16.2, D5.6, or any data code-group other than D21.5 or D2.2, should only be counted if it is part of the /I/ ordered_set (see 36.2.4.12). Basically, make sure that a /D/ in a frame doesn't get counted as part of idle.

SuggestedRemedy

This function is used to determine whether tx_code-group is /T/, /R/, /K28.5/ or any data code-group other than /D21.5/ or /D2.2/ that follows a /K28.5/.

Proposed Response Response Status C
ACCEPT.

Cl 65 SC 64.1.2 P505 L12 # 476
Maislos, Ariel Passave

Comment Type T Comment Status R

efficiency of multiplexing may be increased when slottime is decreased

SuggestedRemedy

Add The OLT may use slotTime = 512 when operating in half-duplex to improve efficiency.

Proposed Response Response Status C
REJECT.

Cl 65 SC 65 P504 L1 # 380
Dawe, Piers Agilent

Comment Type E Comment Status A

This clause doesn't describe only functions. Grammar: 'a ... networks.

SuggestedRemedy

Change to 'This clause describes functions for use in 1000BASE-PX Point to Multi-Point (P2MP) networks only. Or leave out the 'only'.

Proposed Response Response Status C
ACCEPT.
Drop only.

Cl 65 SC 65.1 P503 L30 # 381
Dawe, Piers Agilent

Comment Type T Comment Status R

FEC clause should show the FEC sublayer in its layer diagrams!

SuggestedRemedy

Add optional FEC layers to figs 65-1 and 65-3.

Proposed Response Response Status C

REJECT.
Figure 65-1 deals with RS and shows where it is located.
Figure 65-3 shows added functionality in PCS, i.e. FEC functionality is shown as part of PCS.

Cl 65 SC 65.1.2 P504 L50 # 382
Dawe, Piers Agilent

Comment Type E Comment Status A

This text appears to describe the RS in the OLT with no corresponding text for the RS in the ONU.

SuggestedRemedy

Add a paragraph explaining the RS in the ONU.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
Add at line 50:
.. while at the ONU a single MAC is bound to the GMII.

Cl 65 SC 65.1.2 P504 L50 # 77
Shimon Muller Sun Microsystems, Inc

Comment Type T Comment Status A

Half duplex operation of the MAC(s) in the OLT is an important part of understanding the principles of operation that follow. However, this clause has no mention of it at all.

SuggestedRemedy

In the second paragraph insert the following sentence between the 1-st and the 2-nd sentences:
"All the MAC instances are configured for the half duplex mode of operation."

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
Half duplex operation is not required

P802.3ah Draft 2.1 Comments

Cl 65 SC 65.1.2 P505 L10 # 96
Brown, Benjamin Independent

Comment Type TR Comment Status A

Half-duplex operation is an extremely inefficient mechanism for enforcing the IPG between packets from different MACs for P2MP operation. See the presentation from Glen Kramer

SuggestedRemedy

Remove this concept from Clauses 64 & 65 and replace with the suggestion from Glen Kramer's presentation regarding enforcement in the Control Multiplexer within Clause 64.

Proposed Response Response Status C

ACCEPT.

Cl 65 SC 65.1.2 P505 L12 # 503
Booth, Brad Intel

Comment Type TR Comment Status A

The wording for CRS is confusing. The use of half duplex to defer the MAC will prevent the ONU from transmitting during the reception of data. CRS is asserted during the reception of data. This will cause deferral in the transmitting MAC which prevents simultaneous transmission and reception of data.

SuggestedRemedy

Stipulate that the CRS is duplicated to each MAC currently not in the process of transmitting frames.

Proposed Response Response Status Z

WITHDRAWN.
CRS is no longer used

Cl 65 SC 65.1.3.2 P L # 64001
Ariel Maislos

Comment Type T Comment Status A

add definition in Clause 65 to define SCB using mode and LLID

SuggestedRemedy

add to 65.1.3.2 in the definition of mode:
When the LLID is used to emulate a single copy broadcast or multicast channel, this variable will be set to 1. When emulating a unicast channel, this variable will be set to 0.

Proposed Response Response Status C

ACCEPT.

Cl 65 SC 65.1.3.3 P505 L48 # 383
Dawe, Piers Agilent

Comment Type E Comment Status A

SPD is not introduced.

SuggestedRemedy

Is it the same as the one in clause 36? If so, say so. If not, use a different name? Either way, spell out the abbreviation the first time it's used in this clause.

Proposed Response Response Status C

ACCEPT.

Cl 65 SC 65.1.3.3.1 P505 L48 # 384
Dawe, Piers Agilent

Comment Type T Comment Status R

It's quite hard to tell, but in clause 64, LLID appears to be "Assigned Port. This field holds a 16 bit unsigned value". If so, what happens to its bit 15 in the mapping in table 65-1?

SuggestedRemedy

?

Proposed Response Response Status C

REJECT.
The 15th bit is mapped to the mode flag. This is explained in the sections dealing with discovery in Clause 64.

Cl 65 SC 65.2 P508 L38 # 164
Lynskey, Eric UNH-IOL

Comment Type T Comment Status A

Auto-negotiation is not possible in an EPON, and it should be explicitly stated that any device implementing Clause 65 cannot enable auto-negotiation. The suggested remedy doesn't have a shall in it, but perhaps one is warranted.

SuggestedRemedy

Add sentence to end of 65.2.1 (or create new subclause) that states that: Auto-Negotiation, as defined in Clause 37, establishes a point to point handshaking mechanism for allowing 1000BASE-X devices to achieve a highest common denominator link. The P2MP aspect of a 1000BASE-PX network prohibits the use of the auto-negotiation protocol.

Proposed Response Response Status C

ACCEPT.

P802.3ah Draft 2.1 Comments

Cl 65 SC 65.2 P508 L38 # 154
Lynskey, Eric UNH-IOL

Comment Type TR Comment Status A

Half duplex is a bad idea. If half duplex is to be used, then it should be explicitly stated that all the mechanisms of half duplex are necessary (extension, bursting...). If this is not what is wanted, then significant changes must be made to the MAC in Clause 4 to account for this special mode in which only the CRS signal is used. Half duplex seems to be taking a large step backwards. I strongly recommend that another mechanism be found to make sure that the minimum IPG is not violated.

SuggestedRemedy

Push the mechanism back into the MAC Control layer to be supported by by Clause 64. Force each OLT and ONU to wait a predefined amount of time after transmitting each frame before it sets the transmitProgress variable to false. Please see presentation from Glen Kramer for explicit textual changes to the OLT and ONU multiplexer state diagrams.

Proposed Response Response Status C
ACCEPT.

Cl 65 SC 65.2.2 P508 L52 # 64002
Ariel Maislos

Comment Type T Comment Status A

laser_control should be mapped to PMD_SIGNAL.(tx_enable) and not PMD_SIGNAL(laser_control).
Also in 509 lines 37, 41; pg 512 lines 12,42

SuggestedRemedy

change laser_control to tx_enable

Proposed Response Response Status C
ACCEPT.

Cl 65 SC 65.2.2 P509 L1 # 499
Booth, Brad Intel

Comment Type E Comment Status A

Figure 65-3 is in the middle of the paragraph.

SuggestedRemedy

Change frame anchor properties.

Proposed Response Response Status C
ACCEPT.

Cl 65 SC 65.2.2.1 P509 L # 301
Glen Kramer Teknovus

Comment Type TR Comment Status A

Half-duplex MAC should not be used in P2MP for the following reasons:
1. Extremely low throughput due to carrier extension
2. MPCP breaks With bursting enabled and FEC implemented.
See enclosed file for more information.

SuggestedRemedy

Use full-duplex MAC in P2MP. Add necessary changes to control packet transmission timing in MPCP.

Proposed Response Response Status C
ACCEPT.

Cl 65 SC 65.2.2.1 P509 L26 # 425
Bemmel, Vincent Alloptic

Comment Type TR Comment Status R

At the ONU the laser_control signal is driven by the presence of non-Idle characters in a delay buffer. This approach was chosen as alternative to the signal from the Multi-point MAC control layer, that was crossing several layers (layering violation).

This approach seems to force the ONU to pay for the {T_ON + T_ACG + T_CDR} overhead more than once, i.e., it unnecessarily limits the available upstream bandwidth.

SuggestedRemedy

Don't rely on buffer length to drive laser_control

Proposed Response Response Status U
REJECT.

When buffer is empty laser is turned off, and on again once a symbol is transmitted. This means that there is no added inefficiency, as the line would have been idle for max(T_ON+T_AGC+T_CDR,T_OFF) which is the size of the buffer.

Cl 65 SC 65.2.2.1 P509 L27 # 537
Brand, Richard Nortel Networks

Comment Type TR Comment Status R

I am not ready to approve this major new operational definition at the recirculation level. Send this back to the TF for full shake out.

SuggestedRemedy

Proposed Response Response Status C
REJECT.
Proposals leading to text in draft were submitted and reviewed by WG and have been approved in ballot.

P802.3ah Draft 2.1 Comments

Cl 65 SC 65.2.2.1 P509 L 32 # 148

Lynskey, Eric UNH-IOL

Comment Type T Comment Status A

The number of idle characters needs to also take into account the amount of time required by the synchronization state machine to complete. This is a non-negligible amount of time as it will take a minimum of 10, 10-bit codes, or 80ns to achieve sync. The presence of errors could increase this time, as the idle stream is not covered by the RS forward error correction, if it is used. Any single bit error could force the synchronization process to restart, thus increasing the amount of idle necessary to send before a frame.

SuggestedRemedy

Modify sentence to read "This number of idle characters is needed by the receiver to adjust its gain (Tagc), synchronize its receiving clock (Tcdr), and complete the synchronization process (Tsync)."

A separate comment addressed to Clause 64 addresses this issue to modify the definition of syncTime.

Proposed Response Response Status C

ACCEPT.

Cl 65 SC 65.2.2.1 P509 L 33 # 385

Dawe, Piers Agilent

Comment Type E Comment Status A

I couldn't find any other occurrence of 'Tagc'.

SuggestedRemedy

Check notation. Treceiver_settling ?

Proposed Response Response Status C

ACCEPT.

Cl 65 SC 65.2.2.1 P509 L 44 # 388

Dawe, Piers Agilent

Comment Type T Comment Status R

Is there any way we can add words saying that the laser can be left on for longer as grant allows, as an implementation option? For one thing, it might be hard to debug a transmitter that wouldn't stay on when idling. We want it to do that to measure e.g. its extinction ratio.

SuggestedRemedy

?

Proposed Response Response Status C

REJECT.

Test modes of transceivers may be exercised, for example by asserting the laser control line on the PMD using test equipment.

The MPCP at an ONU may be turned of as MPCP is an optional layer. Thus debugging of the transceiver is possible in an ONU system.

Cl 65 SC 65.2.2.1 P509 L 45 # 469

Tom Mathey Independent

Comment Type T Comment Status A

This text places the MAC into half duplex mode in order to perform rate matching. For multi-point or EPONs, the MAC is placed into full duplex mode. In full duplex, the MAC ignores the CRS signal.

SuggestedRemedy

Someplace in the document, EPON multi-point control, etc. add very specific text that EPONs require the MAC to be set to a specific duplex mode. Clause 61 is very specific about MAC mode settings and rate matching control

Discuss options such as (and in no particular order)

1. have MAC perform rate matching
2. rewrite MAC to allow CRS deferral in full duplex mode and thus invalidate all existing full duplex macs
3. rewrite Clause 31 to allow half duplex to source MAC Control frames.
4. other.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Half duplex operation is no longer required

Cl 65 SC 65.2.2.1 P509 L 45 # 78

Shimon Muller Sun Microsystems, Inc

Comment Type T Comment Status A

Half duplex operation of the MAC(s) in the OLT is an important part of understanding the principles of operation that follow. However, this clause has no mention of it at all.

SuggestedRemedy

In the fourth paragraph insert the following sentence between the 2-nd and the 3-rd sentences:

"All the MAC instances are configured for the half duplex mode of operation."

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Half duplex operation is not required

P802.3ah Draft 2.1 Comments

Cl 65 SC 65.2.2.1 P509 L45 # 386

Dawe, Piers Agilent

Comment Type T Comment Status A
CRS?

SuggestedRemedy

Spell it out on first use. Also, it seems not to be in the abbreviations list; if that is the case, add it.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
In 65.1.2, when first mentioning CRS add (carrier sense)

Cl 65 SC 65.2.2.1 P510 L1 # 501

Booth, Brad Intel

Comment Type TR Comment Status A

Figure 65-4 and 65.2 make no mention (that I could find) about Clause 37 auto-negotiation. Need an explicit statement that prevents the use of Clause 37 auto-neg.

SuggestedRemedy

Add text to state that use of Clause 37 auto-negotiation shall not be used in P2MP.

Proposed Response Response Status C

ACCEPT.
See 164 for added text to 65.2.1 clarifying interoperability with auto-negotiation.

Cl 65 SC 65.2.2.1 P510 L1 # 500

Booth, Brad Intel

Comment Type E Comment Status A

Figure 65-4 needs some cleaning up.

SuggestedRemedy

Move the legend for * and ** to the bottom of the figure (between MDI and figure header). Move the header of the figure down further to give more space. Don't show the internal TBI in the PCS block. The signals signal_detect and laser_control should not be shown as part of the TBI as they are not listed in Clause 36 as part of the TBI.

Proposed Response Response Status C

ACCEPT.

Cl 65 SC 65.2.2.1 P510 L10 # 389

Dawe, Piers Agilent

Comment Type T Comment Status R

Is the box marked "CARRIER SENSE" really a legacy function? Or is the CRS a legacy signal, being used here in a new way by a modified function?

SuggestedRemedy

?

Proposed Response Response Status C

REJECT.
Yes CARRIER SENSE is a legacy function.
CRS is an existing signal that is used here similarly to Clause 61 for rate matching.
See 36.1.7 Figure 36-2

Cl 65 SC 65.2.2.1 P510 L10 # 390

Dawe, Piers Agilent

Comment Type T Comment Status A

How do you stop the CRS going back to the transmitting MAC, or is that OK?

SuggestedRemedy

?

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
The CRS is no longer going back to the MAC

Cl 65 SC 65.2.2.1 P510 L20 # 387

Dawe, Piers Agilent

Comment Type T Comment Status R

Can the TBI carry the signal from DATA DETECTOR to OR?

SuggestedRemedy

?

Proposed Response Response Status C

REJECT.
No this signal is in addition to the TBI.

P802.3ah Draft 2.1 Comments

Cl 65 SC 65.2.2.1 P510 L22 # 504

Booth, Brad Intel

Comment Type T Comment Status A

I'm not sure how much of a problem this is as I'm still learning about P2MP. From what I can see, if an ONU has nothing to send, it will not turn its laser on. If it doesn't turn its laser on, then the OLT will not receive a valid signal. That will prevent the OLT from transmitting even if it has something to send.

SuggestedRemedy

Tried to find where the Clause 66 modifications are tied into the OLT transmit PCS, but I couldn't find the information. Seems to me that the OLT transmit PCS will require being forced on.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
Clause 66 mentions unidirectional capability.
This feature is used also for P2MP and not only for OAM.

Add text to 65.1.2 - The OLT shall operate in unidirectional mode as defined in 66.2.2

Add appropriate PICS entry.

Cl 65 SC 65.2.2.1 P510 L30 # 159

Lynskey, Eric UNH-IOL

Comment Type E Comment Status A

Figure 65-4 shows tx_code-group and rx_code-group, whereas figures 65-9 and 65-11 show ftx_code-group and rtx_code-group, respectively.

SuggestedRemedy

Modify Figure 65-4 or modify the other two figures.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
update 65-4 with ftx_code-group and rtx_code-group

Cl 65 SC 65.2.2.1 P511 L1 # 502

Booth, Brad Intel

Comment Type T Comment Status A

Figure 65-5 signal labels should be on the left. Header should state that the figure applies only to an ONU. The diagram could use more information about how the receive path synchronization affects the ability of the ONU to transmit.

SuggestedRemedy

Add information as per the comment.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
Move CRS and TIME lables to the left
change figure heading to read .. At ONU

Cl 65 SC 65.2.2.1 P511 L22 # 152

Lynskey, Eric UNH-IOL

Comment Type E Comment Status R

Add PCS synchronization time to figure 65-5.

SuggestedRemedy

See comment.

Proposed Response Response Status C

REJECT.
Figure shows transmitter behavior and not receiver.

Cl 65 SC 65.2.2.2 P511 L28 # 391

Dawe, Piers Agilent

Comment Type E Comment Status A

Need a sentence in human language here before starting the listing.

SuggestedRemedy

Per comment.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
Add text as follows:
The body of this clause comprises state diagrams, including the associated definitions of variables, constants, and functions. Should there be a discrepancy between a state diagram and descriptive text, the state diagram prevails. The notation used in the state diagrams in this clause follows the conventions in CROSS REF 21.5. State diagram variables follow the conventions of CROSS REF 21.5.2 except when the variable has a default value. Variables in a state diagram with default values evaluate to the variable default in each state where the variable value is not explicitly set. Rename section to Detailed functions and state diagrams

Cl 65 SC 65.2.2.2.1 P511 L41 # 153

Lynskey, Eric UNH-IOL

Comment Type T Comment Status A

Default value of DelayBound does not include PCS synchronization time, which is a minimum of 80ns.

SuggestedRemedy

Change default value to 845 ns.

Proposed Response Response Status C

ACCEPT.

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Cl 65 SC 65.2.2.2.1 P511 L 43 # 150
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status A
 Wrong reference
 SuggestedRemedy
 Change to laser_on_time (64.3.10.1)
 Proposed Response Response Status C
 ACCEPT.

Cl 65 SC 65.2.2.2.1 P511 L 44 # 151
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status A
 Wrong reference and variable capitalization
 SuggestedRemedy
 Change to syncTime (64.3.10.2)
 Proposed Response Response Status C
 ACCEPT.

Cl 65 SC 65.2.2.2.2 P512 L 31 # 392
 Dawe, Piers Agilent
 Comment Type T Comment Status A
 Need to explain how this formula is rounded off when its output is not an integer.
 SuggestedRemedy
 Per comment.
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Round up to nearest integer is performed by open bottomed square bracket thingies. This is a well known mathematical convention.
 Clarification of this issue will be taken with the Editor-in-Chief for insertion of symbol into symbols section, or conversion in use of CEILING function, adding the definition of the function.

Cl 65 SC 65.2.2.3 P513 L 37 # 155
 Lynskey, Eric UNH-IOL
 Comment Type T Comment Status A
 Figure 65-6 should have references to CRS removed from the state diagram pending the outcome of previous comments regarding half duplex.
 SuggestedRemedy
 Remove ASSERT_CRIS and DEASSERT_CRIS states. The exit conditions from ASSERT_CRIS can be driven directly into the DATA_ARRIVAL state and remove the UCT transition into ASSERT_CRIS. Remove the ELSE transition from IDLE_ARRIVAL to TRANSMIT_CODE-GROUP and the transition from IDLE_ARRIVAL to DEASSERT_CRIS. The exit conditions from DEASSERT_CRIS can be moved directly to IDLE_ARRIVAL. Also, you can remove the CRS variable from 65.2.2.2.1.
 Proposed Response Response Status C
 ACCEPT.

Cl 65 SC 65.2.2.3 P514 L 20 # 156
 Lynskey, Eric UNH-IOL
 Comment Type T Comment Status A
 Figure 65-7 should have references to CRS removed from the state diagram pending the outcome of previous comments regarding half duplex.
 SuggestedRemedy
 Remove ASSERT_CRIS state and have UCT transition from DATA_ARRIVAL to TRANSMIT_CODE-GROUP. Remove DEASSERT_CRIS state and have exit conditions from IDLE_ARRIVAL go directly into TRANSMIT_CODE-GROUP.
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Figure 65-7 is no longer required and should be removed

Cl 65 SC 65.2.3 P514 L 38 # 158
 Lynskey, Eric UNH-IOL
 Comment Type T Comment Status R
 Depending outcome of half-duplex comments, this line may need to be modified.
 SuggestedRemedy
 Change to read: If FEC is implemented, the Multi-point MAC Control sublayer performs rate adaptation by disabling MAC transmission...
 Proposed Response Response Status C
 REJECT.

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Cl 65 SC 65.2.3.1 P515 L 23 # 160
Lynskey, Eric UNH-IOL
Comment Type E Comment Status A
Change period to comma in (255,239.8)
SuggestedRemedy
See comment
Proposed Response Response Status C
ACCEPT.

Cl 65 SC 65.2.3.4 P518 L 51 # 538
Brand, Richard Nortel Networks
Comment Type TR Comment Status R
Again, the use of Cross Ref at this stage of the document is not allowable
SuggestedRemedy
Proposed Response Response Status C
REJECT.
Cross ref is an editorial placeholder for a hyperlink.

Cl 65 SC 65.2.3.4.5 P521 L 43 # 161
Lynskey, Eric UNH-IOL
Comment Type T Comment Status D
Add to definition of check_ahead_rx to state what values it may take on.
SuggestedRemedy
Values: /S_FEC/ with fewer than d/2 errors, /T_FEC_O/ with fewer than d/2 errors,
/T_FEC_E/ with fewer than d/e errors, OTHER.
If this is accepted you can also change return path into FILL_SEARCH_SFEC_TFEC in
Figure 65-14 to be SUDI*check_ahead_rx=OTHER.
Proposed Response Response Status Z
WITHDRAWN. PROPOSED ACCEPT.

Cl 65 SC 65.2.3.4.5 P521 L 53 # 168
Lynskey, Eric UNH-IOL
Comment Type E Comment Status A
The Delay[Data, T] function is not referenced anplace else.
SuggestedRemedy
Remove function
Proposed Response Response Status C
ACCEPT.

Cl 65 SC 65.2.3.4.5 P522 L 14 # 167
Lynskey, Eric UNH-IOL
Comment Type T Comment Status D
The RS_Decode(Data) function is not referenced or called anyplace but here.
SuggestedRemedy
Modify Figure 65-14 to RS_Decode the data in the FILL_SEARCH_SFEC_TFEC state.
Proposed Response Response Status Z
WITHDRAWN.
PROPOSED ACCEPT IN PRINCIPLE.

Cl 65 SC 65.2.3.4.5 P522 L 18 # 166
Lynskey, Eric UNH-IOL
Comment Type E Comment Status A
The Save[Data] function is not called from any state diagram.
SuggestedRemedy
Remove function
Proposed Response Response Status C
ACCEPT.

Cl 65 SC 65.2.3.4.5 P522 L 9 # 165
Lynskey, Eric UNH-IOL
Comment Type T Comment Status D
The RS_Encode(Data) function is not referenced in any of the state diagrams. The
fec_encode variable does state whether or not the function is being used, but it isn't
explicitly called, but I am not sure if this is sufficient. If the suggested remedy is accepted,
there may not be a need for the fec_encode variable.
SuggestedRemedy
Modify the XMIT_ENCODE state to have: ftx_code-group <= RS_Encode(tx_code-group).
Proposed Response Response Status Z
WITHDRAWN. PROPOSED ACCEPT.

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Cl 65 SC 65.2.3.5.3 P526 L14 # 162

Lynskey, Eric UNH-IOL

Comment Type T Comment Status D

It seems unnecessary to have the check_ahead_rx function take on the value of CONFIG in Figure 65-14, which seems to be referring to the auto-negotiation process. Also, since the check_ahead_rx function needs to take on some other value (T_FEC or S_FEC) before leaving the FILL_SEARCH_SFEC_TFEC state, this global transition seems redundant.

SuggestedRemedy

Remove check_ahead_rx=CONFIG from global transition into FILL_SEARCH_SFEC_TFEC.

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

Cl 65 SC 65.2.3.5.3 P527 L1 # 163

Lynskey, Eric UNH-IOL

Comment Type T Comment Status D

It seems unnecessary to have the buffer_head variable look for the value of CONFIG in Figure 65-15, which seems to be referring to the auto-negotiation process.

SuggestedRemedy

Remove buffer_head=CONFIG from global transition into EMPTY_WAIT_FOR_T.

Proposed Response Response Status Z

WITHDRAWN. PROPOSED ACCEPT.

Cl 65 SC figure 65-4 P510 L26 # 478

Maislos, Ariel Passave

Comment Type E Comment Status A

astrix marking states with no attached notes

SuggestedRemedy

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.
See 500

Cl 65 SC figure 65-4 P510 L26 # 477

Maislos, Ariel Passave

Comment Type E Comment Status A

inconsistent capitalization in figure

SuggestedRemedy

Proposed Response Response Status C

ACCEPT IN PRINCIPLE. change to all caps for FEC Encoder

Cl 66 SC 2.2.1.7 P31 L6 # 99023

Grow, Robert Intel

Comment Type TR Comment Status A D2.0 #333

Counter should be defined in receive state diagram, not in isolation here. As defined, interoperability problems are likely. For example, it isn't clear what role alignment or link_status has, nor if it counts inter-frame, only code groups within a frame, or something in between (when RX_DV is asserted). The term "normal mode" not defined for the PCS.

SuggestedRemedy

Change counter definition to a variable in 24.2.3 and add to receive state diagram. I would recommend defining a constant of invalid, variable of coding_violation, and in the Figure 24-10 add the variable. The clause 45 counter then defines the counter size and behaviour in terms of the state diagram. It also should be clear this is an optional capability (independent of previously mandatory functions (probably needs its own major option in the PICS).

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See response to comment #1065

Cl 66 SC 24.2.2.1.7 P31 L7 # 99024

Dawe, Piers Agilent

Comment Type TR Comment Status A D2.0 #69

This new function, PCS Management Counter, seems to be written in such a way that it would apply to all 100BASE-X PCSs with MDIO or equivalent. This would be a retrospective requirement on existing non-EFM 100BASE-X PCSs which presumably is not our intention.

SuggestedRemedy

Make it clear that this function is optional.

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

See response to comment #1065 - the counter is removed and only a Clause 30 attribute remains

P802.3ah Draft 2.1 Comments

Cl 66 SC 36.2.4.19 P77 L 6 # 99027

Dawe, Piers Agilent

Comment Type TR Comment Status A D2.0 #71

This new function, PCS Management Counter, seems to be written in such a way that it would apply to all 1000BASE-X PCSs with MDIO or equivalent. This would be a retrospective requirement on existing non-EFM 1000BASE-X PCSs which presumably is not our intention.

SuggestedRemedy

Make it clear that this function is optional.

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

See response to comment #1075 - the counter is removed and only a Clause 30 attribute remains

Cl 66 SC 36.2.4.19 P77 L 6 # 99028

Grow, Robert Intel

Comment Type TR Comment Status A D2.0 #334

Counter should be defined in receive state diagram, not in isolation here. As defined, interoperability problems are likely. For example, it isn't clear how this counter relates to invalid code-groups defined in 36.2.4.6. Are the seven reserved valid code points of Table 36-2 excluded from the count, or only the five used in Table 36-3? Is comma alignment required? The term "normal mode" is used in multiple ways in Clause 36 (e.g., for the TBI, not loopback), its use here is too imprecise.

SuggestedRemedy

Change counter definition to a variable in 36.2.5.1 and add to receive state diagram. I would recommend defining a constant of invalid, variable of coding_violation, and in the Figure 36-7 add the variable. The clause 45 counter then defines the counter size and behaviour in terms of the state diagram. It also should be clear this is an optional capability (independent of previously mandatory functions (probably needs its own major option in the PICS).

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See response to comment #1075

Cl 66 SC 36.2.5.1.3 P77 L 23 # 99029

Thaler, Pat Agilent

Comment Type TR Comment Status A D2.0 #1226

This is being inserted without any context. Reference the location of the description of unidirectional OAM capability and explanation of when it is appropriate. Also, the first usage of OAM in the clause should be expanded to.

The consequences of setting the variable TRUE are not made apparent to the reader. For example, it should state explicitly that setting the variable TRUE disables auto-negotiation.

The choice between full duplex and half duplex also needs to be covered when autonegotiation is disabled.

There may be additional places where unidirectional operation requires some alteration of behavior.

SuggestedRemedy

Provide a suitable reference. Provide information here on when this variable should not be set TRUE. In many cases such as operation with standard bridges, we rely on knowing that the link is either bidirectional or not there at all. It is only in environments designed to tolerate unidirectional operation that this variable should be set TRUE.

Since you disable Auto-Negotiation in this mode, you should also say how the duplex mode is set. For subscriber access networks, it should be full-duplex as the distance requirements of half-duplex are not likely to be met. Also, unidirectional operation only makes sense for full duplex. If you were half duplex and your receive link was down, you could be transmitting when your partner is transmitting and your transmission would be discarded as a collision. Therefore, the unidirectional variable should also force full-duplex operation.

Also, this should be reflected in the Auto-Negotiation chapter. Note that you could force xmit to equal data in the Auto-Negotiation chapter by disabling AutoNegotiation (mr_an_enable = FALSE) and using a unidirectional variable to override all the terms except power_on=TRUE in the global transition to AN_ENABLE. I think this is tidier than saying that xmit sometimes gets its value from Clause 37 and sometimes doesn't.

This also works for the issue of full/half duplex. Clause 37 is where the determination of duplex mode is made.

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

Make the following as part of the introductory text for the "changes to Clause 36" portion of the new Clause 66 as well as part of the text for the P2MP support of unidirectional enable in Clause 65. Separate the functions (OAM and P2MP) as appropriate for the 2 clauses.

"The 1000BASE-X PCS is capable of unidirectional operation in order to support Operations, Administration and Management (OAM) or Point to Multi-Point (P2MP) for a subscriber access network. However, this mode should only be enabled under very limited circumstances. Before enabling this mode, the MAC

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should be operating in full-duplex mode and Auto-Negotiation should be disabled. In addition, the OAM sublayer above the MAC (see Clause 57) must be enabled on both ends of the link or this PCS must reside within an Optical Line Terminal (OLT) in a 1000BASE-PX network (see Clause 64). Failure to follow these restrictions results in an incompatibility with the assumptions of the bridge protocol."

Leave the changes to the XMIT variable only as part of the new Clause 66 - no "changes to Clause 37" required.

Cl 66 SC 4.2.3.2.2 P16 L9 # 99013
Thompson, Geoff Nortel

Comment Type TR **Comment Status** A *CarrierGrade D2.0 #956*
The further proposed expansion of this text makes it increasingly difficult to predict the behavior of a MAC in terms of its ability to sink data.

SuggestedRemedy

Move 4.2.3.2.2 out of the "legacy" Ethernet standard and into a new parallel 802.3 family standard for "Carrier Grade" applications.

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

Clause 04 changes removed in response to comment #337

Cl 66 SC 4.2.7.2 P16 L15 # 99014
Thompson, Geoff Nortel

Comment Type TR **Comment Status** A *CarrierGrade D2.0 #957*
Proposed Carrier Grade parameters mixed into "Legacy" text

SuggestedRemedy

Move appropriate proposed parameters out of the "legacy" Ethernet standard and into a new parallel 802.3 family standard for "Carrier Grade" applications. A small number of existing parameters may also need to be put into "Carrier Grade".

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

Clause 04 changes removed in response to comment #337

Cl 66 SC 4.2.8 P17 L1 # 99015
Thompson, Geoff Nortel

Comment Type TR **Comment Status** A *CarrierGrade D2.0 #958*
Text not compatible with "Legacy Ethernet" and will make it increasingly difficult to understand the simple nature of the legacy MAC for those who wish to implement legacy applications.

SuggestedRemedy

Move to parallel "Carrier Grade" standard

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

Clause 04 changes removed in response to comment #337

Cl 66 SC 4.4.2 P18 L43 # 99017
Thompson, Geoff Nortel

Comment Type TR **Comment Status** A *CarrierGrade D2.0 #959*
Text not compatible with "Legacy Ethernet". Bad idea for reasons previously given.

SuggestedRemedy

Move to parallel "Carrier Grade" standard

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

Clause 04 changes removed in response to comment #337

Cl 66 SC 4.4.2 P18 L43 # 99016
Thompson, Geoff Nortel

Comment Type TR **Comment Status** A *CarrierGrade D2.0 #960*
Delete "ifstretch" as option in Legacy.

SuggestedRemedy

Insert into Carrier Grade
Make additional changes to make this change complete including moving the WIS over too.

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

Clause 04 changes removed in response to comment #337

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Cl 66 SC 46 P124 L10 # 99030

Thaler, Pat Agilent

Comment Type TR Comment Status A D2.0 #1229

This is being inserted without any context. Reference the location of the description of unidirectional OAM capability and explanation of when it is appropriate. Also, the first usage of OAM in the clause should be expanded to.

The consequences of setting the variable TRUE are not made apparent to the reader. For example, it should state explicitly that setting the variable TRUE disables auto-negotiation.

SuggestedRemedy

Provide a suitable reference. Provide information here on when this variable should not be set TRUE. In many cases such as operation with standard bridges, we rely on knowing that the link is either bidirectional or not there at all. It is only in environments designed to tolerate unidirectional operation that this variable should be set TRUE.

Proposed Response Response Status U

ACCEPT IN PRINCIPLE.

Make the following as part of the introductory text for the "changes to Clause 46" portion of the new Clause 66.

The 10Gb/s RS is capable of unidirectional operation in order to support Operations, Administration and Management (OAM) for a subscriber access network. However, this mode should only be enabled when the OAM sublayer above the MAC (see Clause 57) is enabled on both ends of the link. Failure to follow this restriction results in an incompatibility with the assumptions of the bridge protocol.

Cl 66 SC 46 P124 L10 # 99031

Thaler, Pat Agilent

Comment Type TR Comment Status R D2.0 #1230

There is nothing to be gained by transmitting when receiving Remote Fault. Your link partner can't receive the transmission.

SuggestedRemedy

Remove transmission when receiving Remote Fault or explain its use.

Proposed Response Response Status U

REJECT.

To have uniform OAM Link Fault signaling, the OAM sublayer will interpret the Clause 46 link fault status=Remote Fault as the value FAIL. Under this condition, the OAM sublayer will transmit link fault OAMPDUs. These need to be transmitted.

Cl 66 SC 46.3.4.2 P124 L # 99032

Thaler, Pat Agilent

Comment Type TR Comment Status R D2.0 #1228

This change effectively disables detection of remote fault when unidirectional_oam_enable is true because it doesn't take into account the behavior of the Link Fault Signalling state machine. The existing Link Fault Signalling state machine cancels a sequence ordered set if it doesn't see one for 127 columns. Also, to prevent false detection due to noise, it requires 3 sequence ordered sets before it will detect. If there are packets, it detect the sets intermittently or not at all.

SuggestedRemedy

Take out unidirectional operation for 10 Gig or propose an alternate Link Fault Signalling state machine that will when unidirection operation is enabled so that Remote Fault may be detected when interspersed with packts.

Proposed Response Response Status C

REJECT.

With the response to comment 57001 that limits the frequency of OAMPDUs reporting Remote Fault to once per second, the following description is valid.

If the RS is receiving Remote Fault, the only frames that it will be interrupted with are those that also report the Link Fault. These packets are currently only 64 octets and not long enough to force the Link fault signaling state diagram to receive 127 columns without an Sequence ordered set. This includes when both ends of the link have a XAUI extension of the XGMII. With the response to comment 57001 the frequency of these packets is limited to once per second.

In the interest of supporting a common mechanism across all physical layers to support the announcement of Link Fault, this should be retained.

Cl 66 SC 66 P534 L1 # 394

Dawe, Piers Agilent

Comment Type E Comment Status A

Are we allowed to capitalise Ethernet?

SuggestedRemedy

Capitalise Ethernet.

Proposed Response Response Status C

ACCEPT.

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Cl 66 SC 66 P534 L1 # 393
 Dawe, Piers Agilent
 Comment Type E Comment Status R
 express?
 SuggestedRemedy
 Delete 'express'.
 Proposed Response Response Status C
 REJECT.
 Will incorporate this change as an editorial correction to the sponsor ballot draft.

Cl 66 SC 66 P534 L12 # 396
 Dawe, Piers Agilent
 Comment Type E Comment Status R
 Which mode? OAM or P2MP?
 SuggestedRemedy
 'the unidirectional-capable mode'? Better name?
 Proposed Response Response Status C
 REJECT.
 The term "mode" refers to unidirectional operation. In preparation for sponsor ballot, an editorial change will be made to replace "this mode" with "unidirectional operation".

Cl 66 SC 66 P534 L12 # 397
 Dawe, Piers Agilent
 Comment Type E Comment Status R
 Not sure about bridge protocol, but ONU must not do this if there are any other ONUs on the same PON.
 SuggestedRemedy
 Explain that ONU should not transmit unless given permission, therefore cannot work in unidirectional-capable mode.
 Proposed Response Response Status C
 REJECT.
 This text may be a bit general but gets more specific later in the paragraph. It makes it clear that this is for an OLT device, only.

Cl 66 SC 66 P534 L7 # 395
 Dawe, Piers Agilent
 Comment Type T Comment Status A
 100BASE-PX10 requires clause 65 PCS and PMA, not clause 36.
 SuggestedRemedy
 Revise last sentence of first paragraph.
 Proposed Response Response Status C
 ACCEPT IN PRINCIPLE.
 Change this text to read:
 "specified in 66.2 and modified by Clause 65."
 Also, fix cross reference for 100BASE-X by referencing the PCS in 66.1.

Cl 66 SC 66.1.2 P534 L32 # 402
 Dawe, Piers Agilent
 Comment Type T Comment Status R
 'shall integrate': We are now trying to avoid over-using 'integrate'.
 SuggestedRemedy
 just 'are': 'The 100BASE-X PCS and PMA for subscriber access networks are the 100BASE-X PCS ... with ...'. Modify PICS to match.
 Proposed Response Response Status C
 REJECT.
 As an editorial correction to the sponsor ballot draft, the following change will be made:
 Replace "integrate" with "conform to the requirements of"

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Cl 66 SC 66.1.2.2 P535 L 8 # 398

Dawe, Piers Agilent

Comment Type E Comment Status R

"figure 24-8 shall be changed". The reader can't do that! so "shall" is not the right word.

SuggestedRemedy

Need to find a new form of referring to differences; maybe "figure 24-8 is applies in place of Figure 66-1."?

Proposed Response Response Status C

REJECT.

As an editorial correction to the sponsor ballot draft, an editorial change will be made to state:

"Additionally, the functionality of figure 24-8"

Make this change for all modified figures.

Cl 66 SC 66.1.2.3 P536 L 8 # 399

Dawe, Piers Agilent

Comment Type E Comment Status R

p535 has "mr_unidirectional_enable = FALSE,", p536 has "mr_unidirectional_enable=FALSE".

SuggestedRemedy

Spaces would allow better looking text. = could be replaced by 'is'.

Proposed Response Response Status C

REJECT.

Will incorporate this change as an editorial correction to the sponsor ballot draft.

Cl 66 SC 66.2.2 P537 L 3 # 403

Dawe, Piers Agilent

Comment Type T Comment Status R

'shall integrate': We are now trying to avoid over-using 'integrate'.

SuggestedRemedy

just 'is': The 1000BASE-X PCS for subscriber access networks is the 1000BASE-X PCS ... with ...'. Modify PICS to match.

Proposed Response Response Status C

REJECT.

As an editorial correction to the sponsor ballot draft, the following change will be made:

Replace "integrate" with "conform to the requirements of"

Make this same change in 66.3.2

Cl 66 SC 66.3.1 P538 L 6 # 401

Dawe, Piers Agilent

Comment Type E Comment Status R

10Gbps

SuggestedRemedy

10 Gb/s (several times).

Proposed Response Response Status C

REJECT.

Will incorporate this change as an editorial correction to the sponsor ballot draft.

Cl 66 SC 66.3.2.1 P538 L 28 # 400

Dawe, Piers Agilent

Comment Type TR Comment Status R

So you want to allow a 10G DTE to transmit when it can't receive anything (RS receives LF). But if the RS receives RF, I think this means that the far DTE is saying it can't receive. So what's the point of transmitting then? We need a clear consensus and a reason before messing with rather expensive legacy silicon, so I've made this a TR to provoke a discussion.

SuggestedRemedy

Don't allow transmission of frames when receiving RF.

Proposed Response Response Status U

REJECT.

This comment is a reiteration of comment 1230 submitted by Pat Thaler against D2.0 and is rejected for the same reasons.

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Cl 66 SC All P L # 99025

Brand, Richard Nortel Networks

Comment Type TR Comment Status A CarrierGrade D2.0 #838

These new additions do not align with the objectives listed in 24.1.2 and no reference is made to cl 58 requirements

SuggestedRemedy

Separate the documents per comment 6.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl 66 SC All P31 L1 # 99026

Thompson, Geoff Nortel

Comment Type TR Comment Status A CarrierGrade D2.0 #968

There is no justification for the inclusion of this material in clause 24 as it is unnecessary to satisfy the scope and objectives of 24.1 nor has any text been proposed to the introductory material of cl 24 to provide for the inclusion of a new 4B/5B PMD such as that being proposed in cl 58.

SuggestedRemedy

Move to parallel Carrier Grade standard

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See resolution to comment #952

Cl 67 SC 67.2 P544 L54 # 407

Dawe, Piers Agilent

Comment Type T Comment Status R

Need to state the obvious.

SuggestedRemedy

Add text:
P2MP is a shared medium so the nominal 1 Gb/s is divided by the number of ONUs.
However, dynamic allocation can deliver a substantial statistical gain depending on traffic patterns.

Proposed Response Response Status C

REJECT.

P2MP is sufficiently described in clause 67 and other parts of the document

Cl 67 SC 67.2.1 P545 L5 # 405

Dawe, Piers Agilent

Comment Type T Comment Status A

This sentence is misleading: 'other link spans and split ratios can be implemented provided that the maximum and minimum channel insertion losses described in Table 60-1 are met.' because some links are dispersion limited.

SuggestedRemedy

'other link spans and split ratios can be implemented provided that the maximum and minimum channel insertion losses and <spans|reaches|distances> described in Table 60-1 are met.'

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Change the text to say: "provided that the requirements of Table-60-1 are met". Remove "the maximum and minimum channel insertion losses described"

Cl 67 SC 67.4 P546 L36 # 406

Dawe, Piers Agilent

Comment Type T Comment Status D

This sentence 'The physical size of full duplex EFM networks is not limited by the round-trip collision propagation delay.' is not interesting now that EPON is classed as half duplex (at the MAC).

SuggestedRemedy

The physical size of a Ethernet passive optical network as well as full duplex Ethernet networks is not limited by the round-trip collision propagation delay.'

Proposed Response Response Status Z

WITHDRAWN.

There is a pending comment on the duplex of P2MP, Pending that comment, this section will be updated appropriately

Cl 67 SC 67.5 P546 L46 # 470

Tom Mathey Independent

Comment Type E Comment Status R

POTS

SuggestedRemedy

Add text that 2BASE precludes the use of POTS.

Proposed Response Response Status C

REJECT.

The text does the complement by identifying where POTS may be used

P802.3ah Draft 2.1 Comments

Cl 67 SC 67.6 P 546 L 54 # 131

Beck, Michael Alcatel Bell nv

Comment Type T Comment Status A

The words "with the exception of 2BASE-TL and 10PASS-TS" were added in resolution of Comment #318/D2.0. The sentence now seems to imply that the optional OAM sublayer is not supported at all by 2BASE-TL and 10PASS-TS. However, the intent of Comment #318/D2.0 was just to inform the reader that 2BASE-TL and 10PASS-TS do not support unidirectional links.

SuggestedRemedy

Remove text "with the exception of 2BASE-TL and 10PASS-TS" from the sentence in 67.6. Add sentence: "2BASE-TL and 10PASS-TS PHYs do not support unidirectional links as defined in 57.2.9 (see 61.1)."

Proposed Response Response Status C

ACCEPT.

Cl 67A SC 67A P L # 410

Dawe, Piers Agilent

Comment Type E Comment Status A

Typos

SuggestedRemedy

Assurance
Part 1-4

Proposed Response Response Status C

ACCEPT.

Cl 67A SC 67A.1.1 P 596 L 40 # 317

Beili, Edward Actelis Networks

Comment Type T Comment Status R attn

2BASE-TL/10PASS-TS are defined for both Head-End and Customer Premises. Clause 61 defines -O and -R subtypes. Note that it is possible that a Phy chip is manufactured, hard wired to a specific subtype. e.g. -R.

SuggestedRemedy

Specify 2BASE-TL-O/10PASS-TS-O for the Head-End, 2BASE-TL-R/10PASS-TS-R for the Customer Premise.

Proposed Response Response Status C

REJECT. The comment is made against material that was previously approved and is unchanged in this draft.

Cl 99 SC 00 P 1 L # 42

David, James JGG

Comment Type E Comment Status R

Excess capitalization.

SuggestedRemedy

Only capitalize first word of sentence/heading or proper nouns. Applicable throughout.

Proposed Response Response Status C

REJECT.

Some of these editorial changes will be done before the IEEE-SA ballot on draft 3.0

Cl 99 SC 00 P 2 L 1 # 43

David, James JGG

Comment Type E Comment Status R

Excess capitalization.
Irrelevant page.

SuggestedRemedy

Either:
1) Eliminate the page.
2) Remove excessive capitalization and fill-out the page

Proposed Response Response Status C

REJECT.

Some of these editorial changes will be done before the IEEE-SA ballot on draft 3.0