Cl **00** *SC* *P* *L* # **99300**

Thompson, Geoffrey Nortel

Comment Type **TR** *Comment Status* **A** *D3.0 #795*

The entirely new concept to 802.3 of doing shared access via an entirely new access protocol is hidden through lack of use of the proper terminology to describe what is going on. The P2MP portion of the proposal is, in fact, a new shared access protocol of the TDMA variety yet none of the following standard terms appears appear anywhere in the description thereof:

multiple access
access method
time division
TDMA
access domain
MAC protocol

In fact the only mentions of a "shared LAN" is the claim that P2MP is emulating a shared LAN rather than admitting it is one!

SuggestedRemedy

Come clean. P2MP is at its most basic level a master-slave TDMA LAN. Revise text to describe P2MP fully as such using established 802 terminology for multiple access shared LANs.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Master-slave relationship is described in 64.3.1. item h.

Modify item d in 64.3.1 as follows:
Multiple MACs operate on a shared medium by allowing only a single MAC to transmit upstream at any given time across the network using a time-division multiple access (TDMA) method.

Cl **00** *SC* *P* *L* # **99350**

Thompson, Geoffrey Nortel

Comment Type **TR** *Comment Status* **R** *D3.1 #374*

I continue to believe that many of the technically sound concepts included in this proposal, while suitable for the access market, are fundamentally at odds with the underlying principals of Ethernet embodied in IEEE Std 802.3 to date. While we have made changes in the past they have been all realativley minor and most of them have worked out. Some, in retrospect, while they seemed like a good idea at the time have set bad precedents for later work. Across it all Std 802.3 has remained conceptually pretty consistent. P802.3ah has several significant departures from that conceptual consistency. I believe that the precedents they set will cause significant confusion over the long term and destroy the conceptual consistency of Ethernet as it is known.
The specific areas that concern me most are:

Loss of the peer relationship to a provider - customer asymmetry
Unidirectional transport
Loopback
New non CSMA/CD mechanisms for shared media access arbitration.
OAM mechanism that are not consistent with the earlier Management
Low speed operation not consistent with prevalent perception of Ethernet.
The requirement for and complexity of ranging & discovery protocols
Requirement for additional levels of station addressing

SuggestedRemedy

Revise the PAR and the draft so that what is currently designated as P802.3ah can be approved as a separate full/new standard that is approved as and will remain a separate standard from IEEE Std 802.3. This will allow this project and its provider oriented successors/amendments to more freely meet the requirements of this significantly different marketplace and set of customers.
Pursue further steps to approval, both editorially and procedurely as a separate standard.

Proposed Response *Response Status* **U**

REJECT.

This issue has been discussed several times in the past.The scope and content of the draft is properly aligned with the approved PAR. The content of the draft as it currently stands has been approved by the balloting group. The commenter's suggested remedy is therefore clearly at odds with the concensus opinion of the task force that wrote the draft, the working group that approved the PAR and reviewed the draft, and the ballot group that approved the draft.

Cl **00** *SC* *P* *L* # **137**

Thompson, Geoff Nortel Networks

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

Regarding your response to my TR comment #374.
Your response and the data behind it just goes to show that the balloting group is not always right, something well known by your TF Chair's as a result of his experience on REVCOM. I am confident that history will prove me correct in this matter. Therefore my comment stands.

SuggestedRemedy

Revise the PAR and the draft so that what is currently designated as P802.3ah can be approved as a separate full/new standard that is approved as and will remain a separate standard from IEEE Std 802.3. This will allow this project and its provider oriented successors/amendments to more freely meet the requirements of this significantly different marketplace and set of customers.
Pursue further steps to approval, both editorially and procedurely as a separate standard.

Proposed Response *Response Status* **U**

REJECT. Previously considered. No further action is required

Cl **00** *SC* *P* *L* # **99349**

Thompson, Geoffrey Nortel

Comment Type **TR** *Comment Status* **R** *D3.1 #372*

There is no provision in the draft to assure that the required disclaimer text (Ref: SB Ops Manual 5.9.3) will be included in the published standard.

SuggestedRemedy

Make provision in the next version of the draft to include the appropriately placed following text:
"At lectures, symposia, seminars, or educational courses, an individual presenting information on IEEE standards shall make it clear that his or her views should be considered the personal views of that individual rather than the formal position, explanation, or interpretation of the IEEE."

Proposed Response *Response Status* **U**

REJECT.

Appropriate text may be added by IEEE-SA staff editor prior to publication

---

Cl **00** *SC* *P* **iii** *L* **18** # **138**

Thompson, Geoff Nortel Networks

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

Regarding your response to my TR comment #372.
Your response was non-responsive. No rationale for rejection was provided. Further, while "Appropriate text may be added by IEEE-SA staff editor prior to publication" there is the strong possibility based on experience that the text will not be added by staff. Since staff has not met the long standing requirement for the "addition" of this text, the appropriate remedy is to add draft front matter (in much the same manner as routinely done by 802.1) to assure that mandated material will appear in the published standard. Given that introductory matter has already been developed for this draft, this does not seem like a significant imposition.

SuggestedRemedy

Add draft front matter that includes the following text:
"At lectures, symposia, seminars, or educational courses, an individual presenting information on IEEE standards shall make it clear that his or her views should be considered the personal views of that individual rather than the formal position, explanation, or interpretation of the IEEE."thus assuring that the requirements of the Op Manual 5.9.3 will be met.

Proposed Response *Response Status* **U**

REJECT. Previously considered. No further action is required

Cl **00** *SC* **0** *P* **1** *L* **35** # **99304**

James, David JGG

Comment Type **TR** *Comment Status* **A** *D3.0 #726*

Excessive capitalization.
This is just one example. Instruct your editors to eliminate capitalization on everything except proper nouns and the first word of headings and sentences.

The profuse use of capitalization, for emphasis, field name delineation, acronyms, etc. is unnecessary and distracting. With so many capitals, its hard to tell when one sentence or field name begins and another one ends.

Start at the front, work through the end, and have a policy in mind. Simply repeating the 802.3 mistakes is not sufficient.

SuggestedRemedy

for network Operations, Administration and Maintenance (OAM) is included
==>
for network operations, administration and maintenance (OAM) is included

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will try to improve on capitalization

Cl **00** *SC* **0** *P* **10** *L* **1** # **99305**

James, David JGG

Comment Type **TR** *Comment Status* **R** *D3.0 #730*

Unnecessary page, not part of the specification.
This is normally provided (or so says Tom Alexander) for the convenience of editors when the document is in FrameMaker source. Its not needed in pdf, and (in fact) could lead to some interesting translation ambiguities.

SuggestedRemedy

Remove this and following page.

Proposed Response *Response Status* **U**

REJECT.

This has usually been added to 802.3 docs.

Cl **00** *SC* **0** *P* **2** *L* **1** # **99306**

James, David JGG

Comment Type **TR** *Comment Status* **A** *D3.0 #727*

This trademark usage page is blank, with no notice of any desire to change or method of change.

This comments was not addressed when marked as editorial, in previous working group ballots. I hope action is taken this time.

SuggestedRemedy

Either:
1) Eliminate the page
2) Put some text describing what and when will happen to this page.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

This page is a reminder that text will be added on publication. An editors note can be added to this effect

Cl **01** *SC* **1.4** *P* **13** *L* **44** # **591**

James, David JGG

Comment Type **TR** *Comment Status* **R** *unchanged text*

Excessive capitalization:

1.4.xxx Aggregation group: ...

SuggestedRemedy

==>
1.4.xxx aggregation group: ...

As per:
1) IEEE style guidelines (only the first word of a heading is capitalized).
2) IEEE IEEE Draft P802.3ahTM/D3.2, page 68, line 13.
2) IEEE Std 802.3(tm)-2002, page 15, 1.4.62

Proposed Response *Response Status* **U**

REJECT.

This comment is on unchanged text.

Cl **01** *SC* **1.4** *P* **13** *L* **47** # **593**

James, David JGG

Comment Type **TR** *Comment Status* **R** *unchanged text*

Excessive capitalization:

1.4.xxx Bandplan: ...

SuggestedRemedy

==>
1.4.xxx bandplan: ...

As per:
1) IEEE style guidelines (only the first word of a heading is capitalized).
2) IEEE IEEE Draft P802.3ahTM/D3.2, page 648, line 31.
2) IEEE Std 802.3(tm)-2002, page 15, 1.4.62

Proposed Response *Response Status* **U**

REJECT.

This comment is on unchanged text.

Cl **01** *SC* **1.4** *P* **13** *L* **50** # **594**

James, David JGG

Comment Type **TR** *Comment Status* **R** *unchanged text*

Excessive capitalization:

1.4.xxx Coupled Power Ratio (CPR): ...

SuggestedRemedy

==>
1.4.xxx coupled power ratio (CPR): ...

As per:
1) IEEE style guidelines (only the first word of a heading is capitalized).
2) IEEE IEEE Draft P802.3ahTM/D3.2, page 15, line 11.
2) IEEE Std 802.3(tm)-2002, page 15, 1.4.62

Proposed Response *Response Status* **U**

REJECT.

This comment is on unchanged text.

Cl **01** *SC* **1.4** *P* **13** *L* **53** # **595**

James, David JGG

Comment Type **TR** *Comment Status* **R** *unchanged text*

Excessive capitalization:

1.4.xxx Downstream: ...

SuggestedRemedy

==>
1.4.xxx Downstream: ...

As per:
1) IEEE style guidelines (only the first word of a heading is capitalized).
2) IEEE IEEE Draft P802.3ahTM/D3.2, page 98, line 21.
2) IEEE Std 802.3(tm)-2002, page 15, 1.4.62

Proposed Response *Response Status* **U**

REJECT.

This comment is on unchanged text.

Cl **01** *SC* **1.4** *P* **14** *L* **1** # **596**

James, David JGG

Comment Type **TR** *Comment Status* **R** *unchanged text*

Excessive capitalization:

1.4.xxx Grant: ...

SuggestedRemedy

==>
1.4.xxx Downstream: ...

As per:
1) IEEE style guidelines (only the first word of a heading is capitalized).
2) IEEE IEEE Draft P802.3ahTM/D3.2, page 48, line 40.
2) IEEE Std 802.3(tm)-2002, page 15, 1.4.62

Proposed Response *Response Status* **U**

REJECT.

This comment is on unchanged text.

Cl **01** *SC* **1.4** *P* **14** *L* **28** # **603**

James, David JGG

Comment Type **TR** *Comment Status* **R** *unchanged text*

Excessive terminology:

1.4.xxx P2MP Discovery: ...

My text editor could find no instance of ""P2MP discovery""
nor ""P2MP discovery"".

SuggestedRemedy

Delete the definition.

Proposed Response *Response Status* **U**

REJECT.

This comment is on unchanged text.

Cl **01** *SC* **1.4** *P* **14** *L* **33** # **604**

James, David JGG

Comment Type **TR** *Comment Status* **R** *unchanged text*

Excessive terminology:

1.4.xxx P2MP Discovery window: ...

My text editor could find no instance of ""P2MP Discovery"" nor ""P2MP discovery"".

SuggestedRemedy

Delete the definition.

Proposed Response *Response Status* **U**

REJECT.

This comment is on unchanged text.

Cl **01** *SC* **1.4** *P* **14** *L* **36** # **605**

James, David JGG

Comment Type **TR** *Comment Status* **R** *unchanged text*

Excessive terminology:

1.4.xxx P2MP Timestamp: ...

My text editor could find no instance of ""P2MP Timestamp"" nor ""P2MP timestamp"".

SuggestedRemedy

Delete the definition.

Proposed Response *Response Status* **U**

REJECT.

This comment is on unchanged text.

Cl **01** *SC* **1.4** *P* **15** *L* **38** # **99344**

James, David JGG

Comment Type **TR** *Comment Status* **A** *D3.0 #732*

Excessive capitalization. There is no point in capitalizing every defined word (or many of them, with no apparent pattern). This confuses the parsing of sentences, since defined words, registers, fields, etc. are all capitalized.

SuggestedRemedy

1.4.xxx Aggregation group: ...
==>
1.4.xxx aggregation group: ...

1.4.xxx Bandplan: ...
==>
1.4.xxx bandplan: ...

1.4.xxx Coupled Power Ratio (CPR): ...
==>
1.4.xxx coupled power ratio (CPR): ...

1.4.xxx Downstream: ...
==>
1.4.xxx downstream: ...

1.4.xxx Grant: Within P2MP protocols, ...
==>
1.4.xxx grant: Within P2MP protocols, ...

1.4.xxx Logical Link Identifier (LLID): ...
==>
1.4.xxx logical link identifier (LLID): ...

1.4.xxx MPCP Registration: ...
==>
1.4.xxx MPCP registration: ...

1.4.xxx OAM Discovery: ...
==>
1.4.xxx OAM discovery: ...

1.4.xxx Operations, Administration and Maintenance (OAM): ...
==>
1.4.xxx operations, administration and maintenance (OAM): ...

1.4.xxx Optical Line Terminal (OLT): ...
==>
1.4.xxx optical line terminal (OLT): ...

1.4.xxx Optical Network Unit (ONU): ...
==>
1.4.xxx optical network unit (ONU): ...

1.4.xxx P2MP Discovery: ...
==>
1.4.xxx P2MP discovery: ...

1.4.xxx P2MP Discovery window: ...
==>
1.4.xxx P2MP discovery window: ...

1.4.xxx P2MP Timestamp: ...
==>
1.4.xxx P2MP timestamp: ...

1.4.xxx Point to Multi-Point Network (P2MP): ...
==>
1.4.xxx point to multi-point network (P2MP): ...

1.4.xxx Point-to-point emulation (P2PE): ...
==>
1.4.xxx point-to-point emulation (P2PE): ...

1.4.xxx Ranging: ...
==>
1.4.xxx ranging: ...

1.4.xxx Reflectance: ...
==>
1.4.xxx reflectance: ...

1.4.xxx Upstream: ...
==>
1.4.xxx upstream: ...

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will capitalize abbreviations in a definition to be consistant with 802.3ae (part of base document), Otherwise they will not be.

For definitons they will not be capitalized

Cl **01** *SC* **1.4** *P* **16** *L* **8** # **99355**

Dr. David V. James

Comment Type **TR** *Comment Status* **R** *D3.1 #591*

has excess capitalization, as can be seen by looking at Definitions are ****>>>>NOT<<<<**** capitalized just because they are defined. Even the most recent 802.3 "bible" has finally done this (mostly) right.

SuggestedRemedy

I view the responses to submitted comments arrogant and ill informed. Your should read the IEEE Style manual, which is available on line.
After that, establishing editorial guidelines (which a chief editor should do) or distributing pointers to useful references would be useful, such as http://dvjames.com/templates/StdBook.pdf.
A response of 802.3 precedence is irrelevent: your job is to write based on IEEE style guidelines. Besides, the precedence (most recent 802.3) also shows definitions not capitalized unless proper nouns.

Proposed Response *Response Status* **U**

REJECT.

The editor-in-chief has worked closely with the IEEE staff editor to ensure that the draft adequately conforms with the IEEE style guide.

Cl **01** *SC* **1.4** *P* **17** *L* **5** # **99345**

James, David JGG

Comment Type **TR** *Comment Status* **A** *D3.0 #733*

Excessive capitalization. There is no point in capitalizing every acronym (or many of them, with no apparent pattern). This confuses the parsing of sentences, since defined words, registers, fields, etc. are all capitalized.
Also, IEEE Style manual clearly shown acronyms not capitalized unless proper nouns.

Due to the large number of these, and failures in the past when attempting to resolve these earlier, they have been elevated to a TR.

After fixing the unnecessary capitalization, provide a check list to the other clause editors. Its easier for them to search, then for me and/or others to do so on their behalf.

SuggestedRemedy

CO Central Office
==>
CO central office

CPE Customer Premises Equipment
==>
CPE customer premises equipment

CPR Coupled Power Ratio
==>
CPR coupled power ratio

DMT Discrete Multi-Tone
==>
DMT discrete multi-tone

DA Destination Address
==>
DA destination address

EFM Ethernet in the First Mile
==>
EFM Ethernet in the first mile

EFM Cu Ethernet in the First Mile ...
==>
EFM Cu Ethernet in the first mile ...

FEC Forward Error Correction
==>
FEC forward error correction

FSW Frame Synchronization Word
==>
FSW frame synchronization word<cr
LLID Logical Link identifier
==>
LLID logical link identifier

MPCP Multi-Point Control Protocol
==>
MPCP multi-point control protoco

OAM Operations, Administration, and Maintenance
==>
OAM operations, administration, and maintenance

OAMPDU Operations, Administration, and Maintenance Protocol Data Unit
==>
OAMPDU operations, administration, and maintenance protocol data unit

ODN Optical Distribution Network
==>
ODN optical distribution network

OH Overhead
==>
OH overhead

OLT Optical Line Terminal
==>
OLT optical line terminal

ONU Optical Network Unit
==>
ONU optical network unit

ORLT Optical return loss tolerance
==>
ORLT optical return loss tolerance

P2P Point to Point
==>
P2P point to point

P2PE Point to Point Emulation
==>
P2PE point to point emulation

P2MP Point to Multi-Point
==>
P2MP point to multi-point

PAF PMI Aggregation Function
==>
PAF PMI aggregation function

PAFH PMI Aggregation Function Header

==>
PAFH PMI aggregation function header

PAM Pulse Amplitude Modulation
==>
PAM pulse amplitude modulation

PMS-TC Physical Media Specific - Transmission Convergence
==>
PMS-TC physical media specific - transmission convergence

PSD Power Spectral Density
==>
PSD power spectral density

SA Source Address
==>
SA source address

SHDSL Single-pair High-speed Digital Subscriber Line
==>
SHDSL single-pair high-speed digital subscriber line

STU-O SHDSL Transceiver Unit - Central Office
==>
STU-O SHDSL transceiver unit - central office

STU-R SHDSL Transceiver Unit - Remote
==>
STU-R SHDSL transceiver unit - remote

TCM Trellis Coded Modulation
==>
TCM Trellis coded modulation

UPBO Upstream power back-off
==>
UPBO upstream power back-off

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will capitalize abbreviations in a definition to be consistant with 802.3ae (part of base document), Otherwise they will not be.

For definitons they will not be capitalized

Cl **22** *SC* **1.4** *P* **21** *L* **1** # **99309**

James, David JGG

Comment Type **TR** *Comment Status* **R** *D3.0 #734*

Excessive capitalization. There is no point in capitalizing every acronym (or many of them, with no apparent pattern). This confuses the parsing of sentences, since defined words, registers, fields, etc. are all capitalized.
Also, IEEE Style manual clearly shown acronyms not capitalized unless proper nouns.

Due to the large number of these, and failures in the past when attempting to resolve these earlier, they have been elevated to a TR.

After fixing the unnecessary capitalization, provide a check list to the other clause editors. Its easier for them to search, then for me and/or others to do so on their behalf.

SuggestedRemedy

22. Reconciliation Sublayer (RS) and Media Independent Interface (MII)
==>
22. Reconciliation sublayer (RS) and media independent interface (MII)

Proposed Response *Response Status* **U**

REJECT.

Changing the title of an existing clause is outside the scope of P802.3ah.

Cl **22** *SC* **22.2.4.1.12** *P* **23** *L* **20** # **99310**

Booth, Brad Intel

Comment Type **TR** *Comment Status* **A** *D3.0 #747*

Subclause is unclear and contains data that is either duplicated or belongs in another clause.

SuggestedRemedy

Move the last sentence of the last paragraph to be the last sentence of the first paragraph.

Move the second paragraph to proceed the first paragraph. Move MF42 & MF43 in PICS to proceed MF38 & MF39.

Delete the third paragraph and delete MF40 & MF41. This information should be in those respective clauses and repetition here just requires editing if another standards development wishes to use this bit.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

I agree with all the moves.

The third paragraph was added to resolve a TR in WG ballot that expressed concern about enabling this capability without consideration of the ramifications.

Cl **22** *SC* **22.2.4.2.8** *P* **25** *L* **9** # **99311**

Thompson, Geoffrey Nortel

Comment Type **TR** *Comment Status* **A** *D3.0 #793*

Proposed text goes well beyond the allowed scope of the project. As worded it would appear to allow "unidirectional ability" on legacy PHY types. This change could cause great confusion and interoperability problems with conformat legacy networks.

SuggestedRemedy

Limit the scope of this change to the PHY types being added by this clause that support unidirectional ability. Require that the value of bit 1.7 will be zero for all other current PHY types.
Any WG action to add unidirectional ability to legacy PHY types should be done through maintenance or a new project with the appropriate scope.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

"Bit 1.7 shall be set to 0 for all PHYs except the following: 100BASE-X using the PCS specified in 66.1 and 1000BASE-X using the PCS specified in 66.2."

Use the major capability from comment #748 in the PICS entry.

Cl **56** *SC* **56.1** *P* **158** *L* **17** # **99346**

Booth, Brad Intel

Comment Type **TR** *Comment Status* **A** *D3.0 #760*

Figures 56-1 and 56-2 should be showing the relationship of the EFM layers to the LAN model and the OSI reference model.

SuggestedRemedy

2BASE-TL and 10PASS-TS can be merged in 56-1.

In 56-2, remove one stack and remove brackets showing OLT and ONU(s). That information belongs in the P2MP clause. The name of the medium should just be "MEDIUM". The MEDIUM should be shown as a shared medium, jagged edge on both ends. Port types should be listed under the MEDIUM.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

For the Cu stacks, we will merge the two into one stack.

The commenter is correct that the P2MP diagram appears in subsequent clauses. However,since this is a new means of operating on a shared medium it warrants its own topology in the introduction (as it is different from the point-to-point).

The jagged edges are correct as is since there are no additional OLTs to the left of the shown stack. The jagged edge to the right indicates that the medium could go on with additional ONUs (and OLT is mentioned as singular in contrast to ONUs).

Indication that the ONUs communicate with the OLT but not with each other will be indicated by way of arrows or curvature.

The stub on the left will be removed. The connecterization on the GMII will be removed.

Cl **57** *SC* **57.4.3.1** *P* **192** *L* **01** # **99318**

James, David JGG

Comment Type **TR** *Comment Status* **A** *D3.0 #736*

In many cases (often 802 related), the ordering of bits in the OUI is rather ambiguous. As such, the IEEE/RAC requires that standards clearly define the mappings of an example hex field, as is done in the online tutorials.

SuggestedRemedy

Show a clear example of how the OUI is mapped, using an hex example.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Add a bullet to 57.4.1 to read:

"The bit/octet ordering of any OUI field within an OAMPDU is identical to the bit/octet ordering of the OUI portion of the DA/SA. Additional detail defining the format of OUIs can be found in IEEE Std 802-2001 Clause 9."

Modify Figure 57-14 by removing the bit ordering example.

Modify Table 57-10 by removing the second sentence.

Modify other references as appropriate.

Remove other references to 802-2001 Clause 9.

Cl **57** *SC* **57.4.3.1** *P* **192** *L* **01** # **99319**

James, David JGG

Comment Type **TR** *Comment Status* **R** *D3.0 #735*

The need for uniqueness of an OUI based identifier is best met by utilizing the EUI-48 or EUI-64 definitions, so that each organization doesn't have to understand the context when assigning such numbers to the requesting division.

SuggestedRemedy

Revise the OUI and Vendor Specific Information field to be either 48-bit or 64-bit fields, defined to be an EUI-48 or EUI-64.

Proposed Response *Response Status* **U**

REJECT.

During the November meeting of the RAC (see notes below) the following decisions were established.

- - -
INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
REGISTRATION AUTHORITY COMMITTEE (RAC)

INTERIM MEETING MINUTES
From: 13 November 2003
Location: Hyatt Regency Albuquerque
Boardroom North
330 Tijeras
Albuquerque, New Mexico

Decision 111303 RAC-04: EUI-48 and 64-bit identifiers are appropriate for instance identification.

Decision 111303 RAC-05: Protocol identifiers in addition to 48 and 64 bits are acceptable to use an OUI followed by N Octet, subject to the constraint for the expected consumption rate, the number space can never be consumed.

- - -

The combination of the OUI and Vendor Specific Information fields does not constitute a unique 56-bit identifier.

The purpose of the Vendor Specific Information field is not instance identification, but rather class identification.

The meaning of the bits in the Vendor Specific Information field is out of scope.

The Vendor Specific Information field _may_ be used to differentiate amongst a vendor's product models and versions. It is not a serial number or anything like unto a serial number.

See also response to comment #737.

Cl **57** *SC* **57.4.3.1** *P* **196** *L* **16** # **99320**

James, David JGG

Comment Type **TR** *Comment Status* **R** *D3.0 #737*

The need for uniqueness of an OUI based identifier is best met by utilizing the EUI-48 or EUI-64 definitions, so that each organization doesn't have to understand the context when assigning such numbers to the requesting division.

SuggestedRemedy

Revise the OUI and following data, so that this starts with an EUI-48 or EUI-64 value. Otherwise, multi-division organizations will have to define their own subparsing conventions, which is prone to error (some have already happened with Japanese vendors and parts of 1394/AVC that do this type of thing).

Proposed Response *Response Status* **U**

REJECT.

Governance of the internal behavior of multi-division organizations is entirely out of scope of the IEEE standards activities.

See also response to comment #735.

Cl **57** *SC* **57.4.3.1** *P* **196** *L* **24** # **99321**

James, David JGG

Comment Type **TR** *Comment Status* **A** *D3.0 #738*

The IEEE/RAC defines OUIs as HEX values. Given the confusion between leftmost being first, or the first transmitted bit being first, any descriptions in terms of bits and/or bit ordering should be removed.

SuggestedRemedy

Eliminate the binary text: the hex values are sufficient.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See comment #736, which removes the bit ordering example.

Cl **57** *SC* **57.4.3.1** *P* **197** *L* **40** # **99322**

James, David JGG

Comment Type **TR** *Comment Status* **R** *D3.0 #739*

Given the inconsistencies/ambiguities of the OUI definitions within 802.3, any definition should be self-contained, not cross referencing something else.

SuggestedRemedy

Eliminate the OUI cross reference to:

found in IEEE Std 802-2001 Clause 9.

Proposed Response *Response Status* **U**

REJECT.

See comment #736, which moves the reference to 802-2001 Clause 9 to 57.4.1.

Cl **57** *SC* **57.4.3.1** *P* **199** *L* **23** # **99323**

James, David JGG

Comment Type **TR** *Comment Status* **A** *D3.0 #740*

In many cases (often 802 related), the ordering of bits in the OUI is rather ambiguous. As such, the IEEE/RAC requires that standards clearly define the mappings of an example hex field, as is done in the online tutorials.

SuggestedRemedy

Show a figure with the classical HEX-value example.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Remove second sentence. Also, see #736.

Cl **57** *SC* **57.4.3.1** *P* **200** *L* **09** # **99324**

James, David JGG

Comment Type **TR** *Comment Status* **A** *D3.0 #741*

In many cases (often 802 related), the ordering of bits in the OUI is rather ambiguous. As such, the IEEE/RAC requires that standards clearly define the mappings of an example hex field, as is done in the online tutorials.

SuggestedRemedy

Show a figure with the classical HEX-value example.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See comment #736, which removes bit ordering examples of OUIs.

Cl **58** *SC* **58.1** *P* **218** *L* **9** # **99331**

Booth, Brad Intel

Comment Type **TR** *Comment Status* **A** *BB D3.0 #780*

Sentence is very disjointed and needs better clarification.

SuggestedRemedy

Change second sentence of paragraph to read:
A 100BASE-LX10 and 100BASE-BX10 PHY (physical layer) device is a combination of a 100BASE-X PCS and PMA with the respective PMD. If the optional OAM is being used, the 100BASE-X PCS and PMA in Clause 66 shall be integrated; otherwise, the Clause 24 100BASE-X PCS and PMA shall be integrated. The management functions may be accessible through the optional Management Interface.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
As this is a PMD clause, a shall is not appropriate in this context.
The second sentence will be changed to:
A PMD is connected to the 100BASE-X PMA of Clause 24 or the 100BASE-X PMA of 66.1, and to the medium through the MDI. A PMD is optionally combined with the management functions that may be accessible through the management interface defined in Clause 22 or by other means.

Cl **58** *SC* **58.1** *P* **252** *L* **8** # **99354**

Booth, Brad Intel

Comment Type **TR** *Comment Status* **A** *D3.1 #558 Three clauses*

The response for D3.0 comments #780, 786 and 787 cause me some concern. The response states that "As this is a PMD clause, a shall is not appropriate in this context." Considering all other 100BASE-X and 1000BASE-X PMDs use shalls in this context, the response is very misleading. In looking through D3.1, I have found no compliance statement related to the port types associated with the PMD. There is nothing within this draft that mandates which PCS/PMA shall be used by the Clause 58, 59 and 60 PMDs to create a compliant port type.

SuggestedRemedy

Reconsider the responses to comments #780, 786 and 787 in D3.0.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
Each one of the clauses 58, 59, and 60, defines only the PMD not a complete port and cannot make requirements outside the PMD.
Will refer to PMA in 66, where option to be identical to clause 24, and connection to PCS, will be found.
Clauses 56 and 66 make it very clear what is needed to build a port.
Change "A PMD is connected to the 100BASE-X PMA of Clause 24 or the 100BASE-X PMA of 66.1," to "A PMD is connected to the 100BASE-X PMA of 66.1,".
Similarly in 59 and 60. Remove 59.10.3 and 60.10.3 PICS "PCS". In 60.1, change "appropriate 1000BASE-X PMA of Clause 66" to "appropriate 1000BASE-X PMA of Clause 65".

Cl **58** *SC* **58.1** *P* **252** *L* **8** # **815**

Grow, Robert Intel

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

I agree with unsatisfied D3.1 comment #558.

SuggestedRemedy

Implement a complete specification of the components of a port, if not in the location recommend by #558, in some other clause.

Proposed Response *Response Status* **U**

REJECT.

This comment supports an unresolved negative comment from a previous ballot. The concensus of the ballot group is to leave the text unchanged. No further action is required.

Cl **59** *SC* **59.1** *P* **256** *L* **7** # **99335**

Booth, Brad Intel

Comment Type **TR** *Comment Status* **A** *BB D3.0 #786*

Second sentence of second paragraph is very disjointed.

SuggestedRemedy

Change second sentence of paragraph to read:
A 1000BASE-LX10 and 1000BASE-BX10 PHY (physical layer) device is a combination of a 1000BASE-X PCS and PMA with the respective PMD. If the optional OAM is being used, the 1000BASE-X PCS and PMA in Clause 66 shall be integrated; otherwise, the Clause 36 1000BASE-X PCS and PMA shall be integrated. The management functions may be accessible through the optional Management Interface.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

As this is a PMD clause, a shall is not appropriate in this context.
The second sentence will be changed to:
A PMD is connected to the 1000BASE-X PMA of Clause 36, and to the medium through the MDI. A PMD is optionally combined with the management functions that may be accessible through the management interface defined in Clause 22 or by other means.

Cl **60** *SC* **60.1** *P* **286** *L* **9** # **99339**

Booth, Brad Intel

Comment Type **TR** *Comment Status* **A** *BB D3.0 #787*

Last sentence of first paragraph seems disjointed.

SuggestedRemedy

Change second sentence of paragraph to read:
A 1000BASE-PX10-D and 1000BASE-PX10-U PHY (physical layer) device is a combination of a 1000BASE-X PCS and PMA with the respective PMD. If the optional OAM is being used, the 1000BASE-X PCS and PMA in Clause 66 shall be integrated; otherwise, the Clause 36 1000BASE-X PCS and PMA as modified by 65.3 shall be integrated. The management functions may be accessible through the optional Management Interface.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

As this is a PMD clause, a shall is not appropriate in this context.
The second sentence will be changed to:
A 1000BASE-PX-U PMD or a 1000BASE-PX-D PMD is connected to the appropriate 1000BASE-X PMA of Clause 66, and to the medium through the MDI. A PMD is optionally combined with the management functions that may be accessible through the management interface defined in Clause 22 or by other means.

Cl **64** *SC* **64.3.2.3** *P* **469** *L* **15** # **99348**

Choi, Su-il ETRI

Comment Type **TR** *Comment Status* **R** *Not Member Of Ballot Group*

This caluse describes OLT may support multicast by using additional multicast MACs. Additional multicast MACs require additional LLIDs and filtering rules. However, multicast channel configuration as well as filtering and marking of frames for multicast isn't defined in Clause 65.1.3.3.2

SuggestedRemedy

Suggest a solution for multicast channel configuration as well as filtering and marking of frames for multicast. Attached file "choi_p2mp_1_0304.pdf" suggests a new variable "LGID(logical group identifier)" for grouping of some logical ports (LLIDs). Attached file "choi_p2mp_2_0304.pdf" shows the changes of the draft based on the suggested multicast solution.

Proposed Response *Response Status* **U**

REJECT.

Editor suggests this comment to be rejected as it constitutes a new feature.

Y: 5
N: 1
A: 2

Remove words "(multicast MACs)".
Remove the words "Multicast and" from the section header

Y:1
N:1
A:5

==========

Accept solution proposed in the comment
Y:1
N:2
A:5

Motion to accept STF resolution (reject the comment)
IEEE 802.3ah:

Y:17
N:1
A:4

Cl **65** *SC* **65.1** *P* **506** *L* **12** # **99307**

Thompson, Geoffrey — Nortel

Comment Type **TR** *Comment Status* **R** *D3.0 #794*

The entire concept of this extension to emulate point-to-point operation seems to be a violation of the following text extracted from the Overview and Architecture, IEEE Std 802 clause 6.2.1 Service access points (SAPs)
"The MAC sublayer provides a single MAC service access point (MSAP) as an interface port to the LLC sublayer in an end station."
AND
"The Physical layer provides an interface port to a single MAC station,..."
This also seems to be a violation of the 5 Criteria commitment in Compatibility paragraph 1.

SuggestedRemedy

Alter draft to remain within original commitment.

Proposed Response *Response Status* **U**

REJECT.

The statements "The MAC sublayer provides a single MAC service access point (MSAP) as an interface port to the LLC sublayer in an end station." AND "The Physical layer provides an interface port to a single MAC station,. . . " do not have a 'shall' and therefore are not a requirement for 802 networks.

P2P emulation concept is required for interworking with 802 Networks, and is consistant with compatibility requirements undertaken by the 802.3ah project.

Cl **65** *SC* **65.1.3.3.2** *P* **514** *L* **11** # **99347**

Choi, Su-il — ETRI

Comment Type **TR** *Comment Status* **R** *Not Member Of Ballot Group*

In subclause 64.3.2.3, additional multicast MACs are described roughly. This means that multicast MACs require multicast_llid individually. However, each ONU checks only the match of SCB_LLID(0x7FFF).

SuggestedRemedy

Add additional comparison as "..., or the received logical_link_id matches 0x7FFF or one of the multicast_llids, then ..."

Proposed Response *Response Status* **U**

REJECT.
Proposed new feature is past deadline for new feature addition.

See comment #125 for clause 64.

Cl **65** *SC* **65.2.3** *P* **538** *L* **48** # **112**

Kramer, Glen — Teknovus

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

The specification for FEC is incomplete. It lacks precise specification about how parity bits are generated and in which block and bit order parity bits are transmitted.
In addition, no specification is given to parity buffer. Variable parity_buffer_empty is used without ever being initialized and set. No procedure for removing parity data from the buffer is shown.
Also missing is the state digram for Selector state machine which will forward received code-groups to either packet buffer or parity buffer (refer to Figure 65-10). No synchronization mechanisms are shown which would prevent data to leave the receive buffer before the entire frame is received and corrected.
It seems that there is an assumption that every implementation in some magical way will implement FEC in the same fashion and will become interoperable.

SuggestedRemedy

In its current form, FEC specification is absolutely incomplete. To fix the situation, several new state machines should be developed, at the price of delaying the standard.
Therefore, the commenter suggests to completely remove FEC section from the current draft with the understanding that a new project can be initiated to specify FEC. The new specification can be made generic to benefit different configurations, not only P2MP.

Proposed Response *Response Status* **U**

REJECT.
> It lacks precise specification about how parity bits are enerated
> and in which block and bit order parity bits are transmitted.
> Section 65.2.3.1 (especially p.540 line 5-13) and 65.2.3.2.1 define
> the parity bytes generation method and the block and bit order
> of the data. In addition, no specification is given to parity buffer.

Generally speaking the state machine only describe the data streaming process - transmit (and receive and sync) path. Not the encoding and decoding of the data.
The encoding process is not described in the transmit state diagram, instead the RS_Encode function is described in p.547 l17-21 "
RS_Encode(Data)
This function is used to encode the Reed Solomon (255,239,8) code. The encoder encodes the 239 octets data frame and generates 16 parity octets for each data frame. Before being passed to the Reed Solomon encoder, this function passes the data through DECODE([/x/]). "

The parity data from this function is defined in: P.545 line 29 " parity<D7:D0> An 8-bit array that contains the current parity
bits to be encoded in the FEC Transmit Process. The elements within the array are updated with the next 8-bits to be encoded upon each entry into the XMIT_PARITY state.) "

> Variable parity_buffer_empty is used without ever being
> initialized and set.
The variable usage is defined in figure 65-11 transmit state diagram. In the state:"XMIT_PARITY" In this state the initial setting of the variable is FALSE. And when the transmission of the parity is ended then the setting is set to TRUE. This definition is complete.

> No procedure for removing parity data from the buffer is shown.
The RS_Decode function is specified, this is not in the states diagram. The encoder is filling and emptying the buffer.

> Also missing is the state diagram for Selector state machine which
> will forward received code-groups to either packet buffer or parity
> buffer (refer to Figure 65-10). No synchronization mechanisms are
> shown which would prevent data to leave the receive buffer before the
> entire frame is received and corrected.

The behavior of the data streaming is described in the state machines - figure 65-13 and figure 65-14. The behavior of the state machine in this scenario is fully described in all cases. The state machine is waiting for S_FEC. If it is not found the buffer is filled with the incoming code groups, and the code group is forwarded to the PCS. The buffer emptying defines the replacement of the parity bytes. The alignment of the data is defined by the buffer in the sense that is keeps the streaming of the data whether it is FEC_decoded or not. In that sense the FEC decoding process is done in parallel to the buffer filling and emptying and its delay should be matched.

Cl **65** *SC* **65.2.3.5.3** *P* **551** *L* **11** # **117**

Kramer, Glen Teknovus

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

FEC receive process is broken.
The FEC syncronization state machine generates sync_status variable synchronously with data arriving to the receive buffer. This variable is used to reset 2 state machines (Fig 65-13 and Fig 65-14). But these two state machines operate with at least 12 us (max packet size) delay and cannot use the same sync_status variable.
Otherwise, a lost sync may affect a previously received good frame which is still partially in FEC receive buffer.

SuggestedRemedy

In its current form, FEC specification is absolutely incomplete. To fix the situation, several new state machines should be developed, at the price of delaying the standard.
Therefore, the commenter suggests to completely remove FEC section from the current draft with the understanding that a new project can be initiated to specify FEC. The new specification can be made generic to benefit different configurations, not only P2MP.

Proposed Response *Response Status* **U**

REJECT.
> The FEC synchronization state machine generates sync_status
> variable synchronously with data arriving to the receive buffer.
> This variable is used to reset 2 state machines (Fig 65-13 and
> Fig 65-14). But these two state machines operate with at least 12
> us (max packet size) delay and cannot use the same
> sync_status variable. Otherwise, a lost sync may affect a
> previously received good frame which is still partially in FEC
> receive buffer.

A lose if sync state may cause the FEC decoder to lose a frame.
Synchronizing will occur in the next comma detect which is before the start of the next frame. Fig 65-13 and Fig 65-14 defines the buffer fill and buffer empty state diagrams. In that sense they are
dealing in a frame bounded case. The sync_status defines a reset to the operation of the 2 state machines. If the state machine is not
synchronized then the buffer is not filling and returning to its initial
state, and an emptying case (in the middle of any parity replacement in idles) should also return to its initial state.

It is understood that the specifications in Clause 65 will permit
implementations to discard multiple frames in the event
the FEC receive process loses synchronization.

Cl **65** *SC* **65.2.3.5.3** *P* **551** *L* **28** # **115**

Kramer, Glen — Teknovus

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

Figure 65-13 generates incorrect idles. If disparity is positive, /I1/ should be generated, otherwise /I2/.

SuggestedRemedy

Fix states FILL_TFEC_E_4 and FILL_TFEC_O_5:
tx_disparity=POSITIVE should be tx_disparity=NEGATIVE

Proposed Response *Response Status* **U**

REJECT.
The comment and suggested remedy are incorrect, and no change is necessary.

Cl **66** *SC* *P* *L* # **99351**

Thompson, Geoffrey — Nortel

Comment Type **TR** *Comment Status* **A** *D3.1 #375*

Changes have been made for 100 Mb/s that violate the compatibility promises commited to in the 5 Criteria presentation that added 100 M to the project:

Compatibility
100BASE-X PCS & PMA assumed, and the 802.3 MAC
- No changes whatsoever to the MAC
- PHY identical to current 100Mbps Std except for a new PMD
- No change to Clause 24
- Retain all state machines, 4B/5B coding etc. of 100BASE-X
  o Only need to extend Clause 26, 100BASE-FX PMD, to include SMF
  o Physical medium compatibility through SMF
- Compatible with existing 1000BASE-LX
- Provides upgrade paths to higher speeds and multiple wavelengths, with fiber plant untouched

SuggestedRemedy

Remove all changes to 100BASE-X other than PMD optical changes to bring the proposal back into line with the 5 Criteria Compatibility promises made when 100 M was added to the project.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See the presentation dawe_2_0304 that serves to make unidirectional operation dependent upon the ability of the PHY and the existence of the OAM Remote Fault option.

Promises made by a presenter back in St. Louis are in no way binding on the group. The text referenced is from a presentation by Ulf Jonsson, made at a Call For Interest, archived in the file:

http://www.ieee802.org/3/smfx_study/public/jonsson_1_0302.pdf

It was never adopted by the task force, and is not binding on the task force.

The baseline presentation on the subject is archived in the file:

http://www.ieee802.org/3/efm/baseline/jonsson_1_0502.pdf

This presentation also assumes that the 100BASE-X PCS is retained unchanged, but decisions to modify the PCS have been made since the baseline was adopted, and these are reflected in the approved text of the draft.

The PAR and 5 Criteria for EFM never claimed that the 100BASE-X PCS would be retained unchanged. The changes that we have made to the 100BASE-X PCS for the sake of unidirectional OAM PDU transmission were approved by the WG in the course of the WG ballot. This change was approved in Italy in September of 2003 in the following

presentation:

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

Cl **66** *SC* **66** *P* **540** *L* **1** # **99353**

Booth, Brad Intel

Comment Type **TR** *Comment Status* **A** *D3.1 #557*

Paragraph makes use of "should" and "must". IEEE 802.3 tries to avoid the use of such words.

SuggestedRemedy

Change "should" in 2nd sentence to "may". In the 3rd sentence, change second and third "should" to be "shall". In the 4th sentence, change both "must" to be "shall". Change "should" in 5th sentence to be a "shall".

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

In addition - need to drop "on both ends of the link" from the part where OAM is enabled.

I'm okay with accepting these changes but these 5 new shall statements require a new PICS entry.

Replace the existing text with the following:

"This clause describes additions and modifications to the 100BASE-X, 1000BASE-X and 10GBASE physical layers, making them capable of unidirectional operation, which is required to initialize a 1000BASE-PX network, and allows the transmission of Operations, Administration and Management (OAM) frames regardless of whether the PHY has determined that a valid link has been established.

However, unidirectional operation may only be enabled under very limited circumstances. Before enabling this mode, the MAC shall be operating in full duplex mode and Auto-Negotiation, if applicable, shall be disabled. In addition, the OAM sublayer above the MAC (see Clause 57) shall be enabled or (for 1000BASE-X), the PCS shall be part of a 1000BASE-PX-D PHY (see Clause 60 and Clause 64). Unidirectional operation shall not be invoked for a PCS that is part of a 1000BASE-PX-U PHY (except for out-of-service test purposes or where the PON contains just one ONU). Failure to follow these restrictions results in an incompatibility with the assumptions of 802.1 protocols, a PON that cannot initialize, or collisions, which are unacceptable in the P2MP protocol."

Add a new subclause before 66.4.4.1 with title: "Maintaining compatibility with 802.1 protocols"

Add a PICS table identical to the others in this section with the following entry:
MC1 - Unidirectional mode enabled - 66 - Full duplex and disable AutoNeg and (enable OAM or 1000BASE-PX-D) and not 1000BASE-PX-U - M - Yes[ ], No[ ]

Cl **66** *SC* **66.3.2.2** *P* **540** *L* **41** # **99313**

Grow, Robert Intel

Comment Type **TR** *Comment Status* **R** *D3.0 #552*

The true value needs to be better tied to the register bits that define unidirectional being enabled.

SuggestedRemedy

TRUE; Unidirectional capability enabled (register bits 0.1 = 1 and 1.7 = 1, see Clause 22)

Proposed Response *Response Status* **U**

REJECT.

This is the RS. Clause 22 registers have never been used to represent variables or anything else in an RS. While the RS is part of the physical layer, it is not part of the PHY.