Cl **00** *SC* *P* *L* # 56

floor

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

check for prempt

SuggestedRemedy

replace with preempt (two "e"s)

Response *Response Status* **C**

ACCEPT.

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

Thompson, Geoff GraCaSI S.A.

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

This project has failed to live up to the level of participation that was advertised in the PAR: "5.1 Approximate number of people expected to be actively involved in the development of this project: 30"
and it would appear that its market projections as put forth in the BMP criterium were overly optimistic on a grand scale. This is show by the poor participation. It would appear that most of the current interest comes from a particular industrial sector which failed to follow 802.3 recommendations about 20 years ago and did not install 4-pair cabling. Participation by other sectors has been very poor. IF there ever will be a true market need for this standard, it should be developed with broad participation from the bodies who need it when their own need is sufficiently close that the affected parties will send participants who are in the midst of development. It is a bad idea to develop a standard before the market is read for it.

SuggestedRemedy

Withdraw the project at this time or hibernate it until more people who are willing to participate in its development show up in 802.3. Requalify it for Broad Market Potential at that time and modify the PAR if needed and it is still active.

Response *Response Status* **U**

REJECT. The market projections in the Broad Market Potential based on the automotive and industrial environments continue to be accurate. In fact, there is interest in additional markets such as carrier backhaul and professional audio video.

We have active participation in joint meetings from IEEE 802.1 TSN (a group of more than 30) which has a companion project (IEEE P802.1Qbu Frame Preemption) dependent on this project. Also, about 30 people have participated by commenting on ballots.

The interest in operating on fewer pairs and at lower speeds in the automotive and industrial market is driven by the need to reduce weight and power consumption.

Cl **00** *SC* **0** *P* *L* # 48

Dawe, Piers Mellanox

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

I don't approve of the way this project has been run, and how it has been reported to 802.3.

SuggestedRemedy

Terminate the project.

Response *Response Status* **U**

REJECT. This project has been run consistently with the rules of IEEE 802. We gave tutorials at the July 2013 and March 2015 plenaries to keep 802 informed of our progress as well as an informal tutorial at the September 2013 interim.

The comment is incomplete since it doesn't state any specific deficiency.

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

Anslow, Pete Ciena

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

The draft is not consistent on the version of IEEE Std 802.3 that it is amending.
Page 1 says "Amendment of IEEE Std 802.3™-2015"
Page 13 onwards say "Draft Amendment to IEEE Std 802.3-2012"
Now that IEEE Std 802.3-2015 has been approved, change all references to the base standard to this.

SuggestedRemedy

Change all references to the base standard to "IEEE Std 802.3-2015"

Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **0** *P* *L* # 13

Trowbridge, Steve Alcatel-Lucent

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

The terminology in the amendment does not match the agreed objectives for the project. The Call for Interest held in the March 2012 plenary for Frame Preemption was withdrawn after too much controversy over the characterization of the problem and solution. After a subsequent CFI, the first attempt to approve a PAR and objectives at the July 2013 plenary in Geneva failed due to inconsistency of the terminology with 802.3 (distinguished minimum latency traffic and "M-frames", "M-frames in the wild" were rejected. After rework in the York interim, a characterization as "interspersing express traffic" was developed, leading to the currently accepted objectives accepted in November 2013. The only place the accepted terminology appears in the draft is in the title and the name of the task force. The entire draft uses the terminology of the withdrawn CFI from March 2012

SuggestedRemedy

Update the terminology globally in the draft per the agreed objectives. In particular:
1.4.3 - change "preemptable Media Access Control" to "non-express Media Access Control" with an appropriate acronym
1.4.4 - change "preemptable traffic" to "non-express traffic"
Add IET to the acronyms defined in clause 1.
Occurrences of "preemptable" in clause 30 change to "non-express", objects such as "PreemptSupported", "PreemptEnabled", "PreemptActive" change to "IETSupported", "IETEnabled", "IETActive", etc.
Change "preemption capability" to "IET capability" globally in clause 79.
pMAC and PMAC not consistent in clause 79, but should change globally to neMAC (or whatever acronym is chosen for the non-express MAC).
Clause 99: preemptable MAC should be non-express MAC globally.
"MAC client supporting preemption" becomes "MAC client supporting IET" globally.
pMAC becomes neMAC (or chosen acronym) globally
"preemption is active" becomes "IET is active" globally
"enable preemption" becomes "enable IET" globally
"link partner supports preemption" becomes "link partner supports IET"

Response *Response Status* **W**

REJECT.
The main complaint about the intiial CFI was that it presumed a solution and that should be decided after the project is created.

After the project was created, preemption was chosen as part of the solution for interspersing express traffic. The suggested name changes would not aid the reader in understanding the material. There is no reason to obfuscate the selected mechanism.

The project meets the agreed objectives.

Cl **00** *SC* **0** *P* **13** *L* **0** # 15

Remein, Duane Huawei

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

This amendment is against 2015 not 2012 edition & other header errors

SuggestedRemedy

Change heading in all clauses from:
"Draft Amendment to IEEE Std 802.3-2012 ..."
"IEEE P802.3br Task Force name Task Force ..."
to
"Draft Amendment to IEEE Std 802.3-2015 ..."
"IEEE P802.3br Interspersing Express Traffic Task Force ..."

Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **0** *P* **18** *L* **54** # 7

Tretter, Albert Siemens AG

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

Page number at page 18 changes again to page 1

SuggestedRemedy

Correct the numbering.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. The numbering error only occurs in the compare draft which is not the draft for comment.
This was because the table of contents generated for that draft reset the numbering.
P8023br_D2_2.pdf is numbered correctly and was generated from the frame files that will be used for the next draft.

Cl **1** *SC* **1.4** *P* *L* # 3

Lusted, Kent Intel

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

the abbreviation "MM" for merged MAC is used extensively within draft. 44 times to be exact.

The abbreviation is not listed in Clause 1.5.

SuggestedRemedy

Add abbreviation for Merged MAC in Clause 1.5.

Response *Response Status* **C**

REJECT. MM is not used as an acronym or abbreviation. It only appears as part of the acronym MMSI which is in the acronym list and as part of variable names, primitive names, PICS item names and the name of a parameter similar to the way MA is used in the parameter name MA_DATA.indication.

Adding it to the abbreviation list would open it to being used in place of the term MAC Merge which would not aid in understanding.

Cl **1** *SC* **1.4.339a** *P* **17** *L* **24** # 24

Thompson, Geoff GraCaSI S.A.

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

Missing space

SuggestedRemedy

Change text to read: "layer (IEEE Std 802.3..."

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4.340** *P* **22** *L* **39** # 6

Tretter, Albert Siemens AG

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

Empty reference 1.4.340

SuggestedRemedy

Remove Reference or add approbriate text

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. It is removed in the draft. It appears in the compare version which is not the subject of the ballot only because the old prior had an extra paragraph.

Cl **1** *SC* **1.5** *P* **17** *L* **35** # 50

Dawe, Piers Mellanox

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

Don't add abbreviations that only one clause uses.

SuggestedRemedy

Delete HRT, probably more.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Delete HRT which is used in only one subclause. Keep MMSI because it defines a service interface which makes it global versus local.

Cl **79** *SC* **79.3.7** *P* **28** *L* **32** # 51

Dawe, Piers Mellanox

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

The "additional Ethernet capabilities" field is n octets long. n isn't specified. The first two octets of the field are defined, additional octets are reserved. Reserved octets shall not be transmitted. If fewer octet(s) are received than defined, the implementation shall act as if the additional octet(s) were received as zero.

So, whatever TLV information string length 4+n is transmitted, the receiver has to act as if it were 4+2, or 4+1, or 4+0. Is the idea that n allows for future expansion? If one TLV can follow another, how does the receiver know where to look for the next one if the TLV information string length is misleading? All the TLVs in the base Clause 79 that I saw seemed to be fixed length.

SuggestedRemedy

It would be simpler to commit to a fixed additional Ethernet capabilities length, 2 or 3 bytes.

Response *Response Status* **C**

REJECT. The change wouldn't make the TLV much simpler. It would remove at most 2 sentences. The field was created this way so that new Ethernet capabilities can be added to the TLV instead of continuing to create a new TLV for each new capability that is added. The space for TLVs is limited because only one LLDP PDU of TLVs can be sent and this provides a more efficient way for advertising new capabilites.

Cl **79** *SC* **79.4.2** *P* **29** *L* **34** # 32

Dawe, Piers Mellanox

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

Tidying up.

SuggestedRemedy

Make the middle column wider to fit its contents. Also Table 79-10, Table 99-1.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. These are columns being added to existing tables and the existing tables set the column widths. Carriage returns will be added to keep words from being split in the middle column.

Cl **90** *SC* **90.4.3.1.1** *P* **32** *L* **19** # 1

Anslow, Pete Ciena

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

90.5.1 is part of this amendment, so "90.5.1" should be a cross-reference (not forest green).

Same issue for "90.5.2" on line 40

SuggestedRemedy

Change "90.5.1" and "90.5.2" to be cross-references.

Response *Response Status* **C**

ACCEPT.

Cl **90** *SC* **90.4.3.1.1** *P* **32** *L* **21** # 29

Thompson, Geoff GraCaSI S.A.

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

This addition of another variable seems unnecessarily complex. The bridge (or end station) is supposed to have port configuration information that knows this is a pMAC and therefore unsuitable for use in timed applications. Second, the indication should only take place upon the passage of a legacy SFD. The new SFD codings will not exert it.

SuggestedRemedy

Removed the new text.

Response *Response Status* **U**

REJECT. We asked IEEE 802.1 TSN at our joint meeting in July whether they needed this on the preemptable path or whether they could work with it only on the express path. The experts there affirmed that they need the time stamp on both paths.

Cl **90** *SC* **90.4.3.2.1** *P* **32** *L* **43** # 30

Thompson, Geoff GraCaSI S.A.

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

New text is unnecessary

SuggestedRemedy

Remove new text.

Response *Response Status* **U**

REJECT. See #29

Cl **99** *SC* **1** *P* **35** *L* **9** # 22

Szczepanek, Andre Inphi

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

RE "operating at 100 Mb/s or higher"

The byte orientated service interfaces detailed in this draft are incompatible with the 100MBps RS layer defined in Clause 22 which is nibble orientated.

SuggestedRemedy

Change "operating at 100 Mb/s or higher" to "operating at 1000 Mb/s or higher"

Response *Response Status* **W**

REJECT. We do not have byte oriented service interfaces. The shim service interfaces are the PLS service interface which is bit oriented.

Cl **99** *SC* **3.2** *P* **40** *L* **31** # 21

Szczepanek, Andre Inphi

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

Wrong Figure Index - should be 99-4(a)/(b)

SuggestedRemedy

Change "99-3(a)" to "99-4(a)"
Change "99-3(b)" to "99-4(b)"

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **4.7.7** *P* **50** *L* **5** # 4

Lewis, Jon Dell

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

In the state diagram shown in figure 99-5 many of the text elements in the flow diagram boxes are touching or almost touching the line above it making it much more difficult to read when zoomed out. This includes the following States:
INIT_TX_PROC
EXPRESS_TX
E_TX_COMPLETE
P_TX_COMPLETE

SuggestedRemedy

Modify the diagram to allow more room between the text and the state frame box.

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **4.7.7** *P* **51** *L* **8** # 5

Lewis, Jon Dell

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

Several text entries in the state diagram 99-6 are difficult to read when zoomed out as the text seems to be too close to the state box line just above it. These include the following states
IDLE_RX_PROC
CHECK_FOR_START
REPLACE_SMD
BAD_FRAG
P_RECEIVE_DATA
CHECK_FRAG_CNT
INCREMENT_FRAG_CNT

SuggestedRemedy

Modify the state diagram to add more space between the text and the state box.

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **90.4.3.1.1** *P* **32** *L* **22** # 14

Remein, Duane Huawei

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

"The MM parameter is mandatory when the MAC Merge sublayer (see Clause 99) is instantiated." seems to be a requirement statement but does not use proper wording (no "shall"). Same issue in 90.4.3.2.1. However the shall statement comes later in the draft (90.5.1).

SuggestedRemedy

Make this statement a factual statement. "When the MAC Merge sublayer (see Clause 99) is instantiated the MM parameter is included in the TX_TX.indication."

Response *Response Status* **C**

REJECT. "Mandatory" is an acceptable wording for stating that a capability is required and is often used in IEEE 802.3 for that purpose. For example:
78.1.3.1.1 Fast wake support is mandatory for …
80.2.3 It [FEC]is optional for ... and mandatory for …
82.6 … support for the
Auto-Negotiation process ... is mandatory.
The shall statement in 90.5.1 is about the value of the parameter, not the presence of it.

Cl **99** *SC* **99.1** *P* **35** *L* **10** # 52

Dawe, Piers Mellanox

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

The 5C "Broad Market Potential" response talks about automotive and industrial. According to other recent projects, that's 100 Mb/s and 1 Gb/s. Yet this says "at 100 Mb/s or higher". Changing the Ethernet MAC, as this project does, would be less unpalatable to the industry if it were restricted to the speeds (and preferably the PHY types) where it makes sense; for higher speeds, the time saving from preemption becomes smaller but the delay through cables doesn't, so it is less attractive. Judging by the very poor level of attendance and positive voting for this project, the industry isn't attracted anyway.

SuggestedRemedy

Change "at 100 Mb/s or higher" to "at 100 Mb/s or 1 Gb/s". Make this normative (yes I know people could mis-apply it anyway). Preferably, give an explicit list of applicable PHY types.
As a later project, 2.5 and 5GBASE-T should decide if this makes sense at either of their speeds and include it or not.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE. We discussed whether to put this limitation on during the early drafts of the project. We decided not to put an artififcial upper bound on the operating speed. This is an optional capability that can be implemented where it is needed.

We will add text to the 99.1 Introduction (just above the paragraph starting Figure 99-1) to explain that MAC Merge is most useful at lower speeds:
This capability is most useful at lower operating speeds. The duration of a maximum size frame (2000 octets) on a 100 Mb/s link is 160 us and on a 1 Gb/s link is 16 us. This is an upper bound on the additional delay before a MAC Client can send an Express frame when MAC Merge is not used. At higher operating speeds the additional delay gets smaller in proportion to the speed.

Editor has editorial license to polish this text.

Cl **99** *SC* **99.1** *P* **35** *L* **22** # 33

Dawe, Piers Mellanox

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

"the MAC Merge sublayer may prevent the pMAC from starting transmission of preemptable traffic." So this proposed thing is clearly a new MAC, because it controls access to the medium. A new MAC client with roughly twice as many queues, management registers, everything, is needed to use it. This isn't "Conformance with the IEEE Std 802.3 MAC", "conformance with the MAC client interface" or "conform to the full-duplex operating mode of the IEEE 802.3 MAC" as alleged in the 5C "Compatibility" response. It forces anyone with a MAC design to redesign it.

SuggestedRemedy

Revise the 5C responses to reflect that this is a new or modified MAC, get a vote from 802.3 as to whether they want that;
or revise the draft so that it conforms to the 5C "Compatibility" response;
or terminate the project, like P802.3ar Congestion Management.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE. Replace with "the MAC Merge sublayer may prevent the start of transmission of frames from the pMAC"

It isn't changing the MAC. It is holding off acceptance of the primitive from the MAC. There is no change to the MAC. We are consistent with the Compatibility response since we do not make any changes to the MAC. Other projects such as PAUSE, PFC and point-to-multipoint changed the control of access to the medium without changing the MAC.

IEEE 802.1Qbu is defining protocols for MAC Clients that expect this behavior. It doesn't require twice as many queues. IEEE 802.1Q already defines use of up to 8 traffic classes (e.g. queues) and such implementations are common.

This is an optional capability and doesn't force anyone to support it. Devices supporting the optional capability are fully interoperable with devices that don't support it.

Cl **99** *SC* **99.1** *P* **35** *L* **24** # 18

Marris, Arthur Cadence Design Syst

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

The meaning of the word "holds" is ambiguous.

SuggestedRemedy

Change to "stops" which is what the signal is actually doing, also insert the word "either" so the text reads:

"This clause also specifies a MAC Merge Service Interface (MMSI) providing a primitive that either stops or resumes transmission of preemptable traffic"

Response *Response Status* **C**

ACCEPT. Also change to "stop" on page 39 lines 9 and 19 where "hold" is used similarly.

Cl **99** *SC* **99.1** *P* **35** *L* **30** # 19

Marris, Arthur Cadence Design Syst

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

It is not entirely clear what effect the MMSI service primitive has.

SuggestedRemedy

Change text to:
"When preemption capability is active, the MAC Merge sublayer allows the MMSI service primitive to prevent transmission of frames over the preemptable MAC service interface and frames provided over the express MAC service interface (express traffic) to interrupt transmission of frames provided over the preemptable MAC service interface (preemptable traffic)."

Response *Response Status* **C**

REJECT. The effect of the MMSI service is correctly described in the current text.

When preemption is active, it has the same effect as a frame provided over the express MAC service interface. If a preemptable frame is being transmitted and can be preempted (i.e. enough octets have been transmitted and enough remain), the frame will be preempted.

Cl **99** *SC* **99.1** *P* **35** *L* **39** # 20

Marris, Arthur Cadence Design Syst

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

Figure 99-1 does not mention the MMSI at all.

Also Figure 99-1 does not mention the eMAC and the pMAC.

SuggestedRemedy

Consider deleting the text "and the MMSI" on line 39 page 35.

In Figure 99-1 on page 36 line 9 change the two references to "MAC — MEDIA ACCESS CONTROL" to just "eMAC" and "pMAC".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Delete "and the MMSI" as this figure is focused on the relationship between the sublayers and we added Figure 99-2 to show the interfaces.

In the last ballot, the input we received was that this figure should carry the names of the sublayers (MAC - MEDIA ACCESS CONTROL) rather than the names for purpose of each instantiation (eMAC and pMAC). The text goes on to explain that the two MACs are the eMAC and pMAC.

Cl **99** *SC* **99.1** *P* **35** *L* **44** # 36

Dawe, Piers Mellanox

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

Reconciliation sublayers: how many? I can see only one in the figure. If singular, it's a proper noun.

SuggestedRemedy

Per 1.4.354, Reconciliation Sublayer (capital S).

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **99.1** *P* **35** *L* **46** # 26

Thompson, Geoff GraCaSI S.A.

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

The definition of "conjunction" [noun: the action or an instance of two or more events or things occurring at the same point in time or space.] doesn't really work here. Please redo the text.

SuggestedRemedy

I suggest the following: "A MAC Control Sublayer associated with an eMAC or a pMAC shall not generate PAUSE when the associated MAC Merge sublayer is active."

Response *Response Status* **W**

ACCEPT IN PRINCIPLE. There is no concept of the MAC Merge sublayer being active. It is instantiated or not.
"A MAC Control Sublayer that is the client of an eMAC or a pMAC shall not generate PAUSE."

Cl **99** *SC* **99.1** *P* **35** *L* **48** # 37

Dawe, Piers Mellanox

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

"Preemption capability is only enabled after". So, not what? disabled? enhanced? verified?

SuggestedRemedy

Change to "Preemption capability is enabled only after".
Check the other "only"s in the draft: change
The frag_count field is only present in mPackets with SMD-C. to
The frag_count field is present only in mPackets with SMD-C.
Change
preemption only occurs if at least 60 octets
to
preemption occurs only if at least 60 octets
(this one might be better expressed in the negative).
Change
The PLS_CARRIER.indication primitive is only produced during
to
The PLS_CARRIER.indication primitive is produced only during
(this one would be better re-ordered; see another comment).

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **99.1** *P* **35** *L* **48** # 44

Dawe, Piers Mellanox

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

This says "Preemption capability is only enabled after it has been determined that the link partner supports it (see 99.4.2)" and 99.4.2 says "The preemption capability is enabled in the transmit direction only if it is determined that the link partner supports the preemption capability", but 99.4.3 says "Verification may be disabled", which it seems breaks the promises made in 99.1 and 99.4.2.

SuggestedRemedy

Either do what you said you would do, or don't claim you are doing it and explain how to safely use this thing without verification.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE. Add to 99.4.3 after: “Verification may be disabled.”
Verification disable is intended for engineered closed networks where it is ensured by design that the components are known and initialization time is constrained. An in-vehicle network is an example of an engineered network.

There is a difference between determining that the link partner supports the preemption capability and verification. These are two separate steps.

The receipt of an Additional Ethernet Capabilities TLV with contents indicating that the link partner supports preemption fulfills the statement in 99.4.2.

Verification is an additional check to determine if anything in the link interferes with preemption. It isn't needed in some fixed configurations such as links manufactured into a car.

Cl **99** *SC* **99.1** *P* **35** *L* **49** # 39

Dawe, Piers Mellanox

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

I expected to find something about compatibility; what happens if one connects this new thing, which is a new MAC apart from the name, to a link partner with a regular 802.3 MAC? Will it work? Will it bring a network down? 99.4 talks about "device that does not support preemption or that has preemption disabled" but that could contain a MAC Merge sublayer and 2 MACs; what about one that doesn't?

SuggestedRemedy

Assure us of compatibility and interoperability (or terminate the project).

Response *Response Status* **W**

ACCEPT IN PRINCIPLE. Yes, it will work. This is already covered in the text.

"A device that doesn't support preemption" is a device without MAC Merge because a device with MAC Merge is defined to always support preemption. Preemption might be disabled but it is always supported.

To make this more clear change to "A device that does not implement MAC Merge sublayer"

In that case, the Additional Ethernet Capabilities TLV won't be sent or won't indicate support for preemption so preemption will not be enabled and packets will be sent with the SFD as usual.

Cl **99** *SC* **99.1** *P* **36** *L* **1** # 34

Dawe, Piers Mellanox

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

Tidying up.

SuggestedRemedy

ETHERNET LAYERS can go on one line.
This and OSI REFERENCE MODEL LAYERS are headings at the same level so should be opposite each other.

Response *Response Status* **C**

REJECT. This is consistent with the way the reference model is drawn in IEEE 802.3.
See for example:
Figures 83-1, 84-1

Cl **99** *SC* **99.1** *P* **36** *L* **22** # 35

Dawe, Piers Mellanox

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

What does "Media Independent Interfaces for implementations" mean?

SuggestedRemedy

Change "for the Media Independent Interfaces for implementations of 100 Mb/s..." to "for media independent interfaces at 100 Mb/s..."?

Response *Response Status* **C**

REJECT. This explanation of xMII has the same wording as that in Figure 1-1 and other figures in IEEE 802.3. Media Independent Interface is a defined term that is capitalized (see 1.4.267).

Cl **99** *SC* **99.1.1** *P* **36** *L* **33** # 38

Dawe, Piers Mellanox

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

Section 6 uses "relationship to" 18 times and "relationship with" once (in Time Sync). Here we have "99.1.1 Relationship with other IEEE standards".

SuggestedRemedy

To match the base spec, a sentence on the previous page, and the figure title just above, change "with" to "to".

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **99.2.2** *P* **39** *L* **5** # 27

Thompson, Geoff GraCaSI S.A.

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

I see no need for this primitive. If the merge function is enabled and a frame is presented to the eMAC for transmission then it should be transmitted ASAP and any necessary preemption should take place without any further control needed.
Any hold-off function needed on the pMAC side can take place at the transmit buffer in the bridge.

SuggestedRemedy

Remove sub-clause 99.22

Response *Response Status* **W**

REJECT. This primitive is required in the project objectives.
"Provide a primitive at the MAC client service interface to inhibit the transmission of non-express frames."
This primitive allows the MAC client to preempt before scheduled traffic is due to arrive so that the scheduled traffic can be sent immediately. That cannot be done efficiently in buffer above the MAC because that would require stopping transmission a before the frame starts on the pMAC wasting up to a max frame time on the media. See the July 2013 Geneva Tutorial on IET, slide 39 for an illustration on this.

Cl **99** *SC* **99.2.2.1.3** *P* **39** *L* **34** # 55

Ran, Adee Intel

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

Comment #40 against D2.1 was only partly implemented. "MAC Merge" here should be "the MAC Merge sublayer".

Also in 99.3, line 93, "MAC Merge sublayer" should be "the MAC Merge sublayer".

The latter appears in several places.

SuggestedRemedy

Please go over the draft and verify that "MAC Merge" includes "sublayer" where necessary, and has the proper articles - it is difficult to make this kind of change in a PDF reader.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Will add sublayer here. The other cases where MAC Merge appears without sublayer, it is modifying another noun such as MAC Merge package (in managed objects) MAC Merge packet and MAC Merge Service interface or in the terse PICS item descriptions.

We had prior comments that requested removal of "the" before MAC Merge sublayer so that will not be added.

Cl **99** *SC* **99.3.3** *P* **40** *L* **37** # 23

Thompson, Geoff GraCaSI S.A.

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

Changing delimiters means that all media side test equipment for this (small market) technology will have to have a hardware change from legacy equipment. If a scheme were used that kept the legacy delimiter, then legacy and current main market test equipment could be used in IET applications with only a software change

SuggestedRemedy

Use a scheme that doesn't require a new frame delimiter or delimiters. Using the established delimiter will at least provide hardware compatibility with broad market test equipment both in manufacturing and in the user field.

Response *Response Status* **W**

REJECT. All mechanisms that don't introduce new delimiters require additional overhead for added headers. This mechansim was chosen because it adds no additional overhead to unpreempted frames and minimizes the overhead for preempted frames to the extent possible while meeting other objectives.

In addition, this does not require a change to all test equipment. Some test equipment captures the full packet including preamble, has progammable SFD capture or other mechansims that don't require hardware change.

Cl **99** *SC* **99.3.3** *P* **40** *L* **37** # 28

Thompson, Geoff GraCaSI S.A.

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

I am pretty unhappy with the entire approach of having multiple new values of the start frame/packet delimiter. To my knowledge there has been no investigation of the error robustness of such a scheme, especially one with multiple values. At the time of the initial approval there was significant discourse and investigation of the error robustness of the SFD. One of the results of that discussion was to require additional error checking on a per packet basis by the addition of a length field.

SuggestedRemedy

Use a scheme that doesn't require a new frame delimiter or delimiters. Using the established delimiter will at least provide equivalent performance to current implementations.

Response *Response Status* **W**

REJECT. The existing delimiter has zero Hamming distance (a 1 bit change during preamble can cause a false SFD). The new delimiters all have at least a Hamming distance of 3 from preamble (and a Hamming distance of 4 from SFD). They are therefore all stronger than the original SFD and have the same Hamming distance from SFD that we have used in developing PHY encodings such as 64b/66b.

While IEEE 802.3 initially added a length field to strengthen the SFD, most frames today use an Ethertype and IEEE 802.3 was updated to allow that.

Cl **99** *SC* **99.3.3** *P* **41** *L* **18** # 25

Thompson, Geoff GraCaSI S.A.

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

Through line 22
I don't understand why these values are shown, or at least shown this way in the table. As I understand it, these situations should never occur.

SuggestedRemedy

If that is the case, the values should be marked as "error" or "reserved".

Response *Response Status* **C**

REJECT. These values all occur. They indicate the frame count (not the fragment count) which must match between the frame start and all fragments of the frame. This count enables checking that the fragments belong to the same frame. This ensures that fragments of two frames are not received as one frame if the last fragment of a frame and the first fragment of the next frame are lost.

Cl **99** *SC* **99.3.6** *P* **42** *L* **27** # 40

Dawe, Piers Mellanox

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

This says "XORing the calculated 32 bits with 0x0000 FFFF". In the terminology of 3.2.9, is the left-most or first bit from an 0 or from an F?

SuggestedRemedy

Please specify explicitly.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. It isn't clear that anything is needed here since the CRC is transmitted most significant octet first and it is only the bit order within the octet that is ambiguous. The mask is the same for all bits within an octet.

Will add the following note:
"Note - 0x0000 is XORed with the two most significant octets of the CRC and 0xFFFF is XORed with the two least significant octets of the CRC."

Cl **99** *SC* **99.4** *P* **42** *L* **30** # 41

Dawe, Piers Mellanox

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

MAC Merge Sublayer Operation

SuggestedRemedy

MAC Merge sublayer operation

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **99.4.1** *P* **42** *L* **40** # 42

Dawe, Piers Mellanox

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

MAC Merge sublayer passes through the packets presented by the pMAC and eMAC without alteration

SuggestedRemedy

the packets presented by the pMAC and eMAC pass through the MAC Merge sublayer without alteration
or
the MAC Merge sublayer passes the packets presented by the pMAC and eMAC through without alteration

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Use the first suggested remedy

Cl **99** *SC* **99.4.1** *P* **42** *L* **41** # 16

Remein, Duane Huawei

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

"If both the eMAC and pMAC have a packet ready to transmit and no packet is being transmitted, the eMAC packet is transmitted." Presumable this is the behavior when the remote MAC does not support preemption yet this behavior is different from the most common MAC where there is a one to one relationship between the MAC and PHY and could result is problems when the remote does not support preemption. The statement implies the MAC Merge layer acts as a strict priority scheduler when disabled (eMAC frames always preferred over pMAC frames). If the remote MAC only has one MAC (and thus only on DA) and not two, frames from either the pMAC or the eMAC will be dropped at the remote station. Even if the remote MAC does support 2 MAC addresses frames could arrive the remote MAC out of order.

SuggestedRemedy

Recommend when link partner does not support preemption that either the pMAC or eMAC be disabled instead.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

There are two MAC instantiations but it is considered one port and has one MAC address. Even if it did have two addresses, that would only affect the source address.

The destination address would be the destination address of the remote MAC in any case (assuming that MAC has only one address).

By the way, it is fairly common for existing MACs to transmit with muliple source address, e.g. bridges, ports on systems with virtual machines.

IEEE 802.1Q specifies priority and allows reordering of packets from different prioirites and enforces ordering within priorities with the same source and destination. The IEEE 802.1Qbu usage of 802.3br keeps all traffic from a priority on one client. Therefore, there will be no change to existing behavior.

Cl **99** *SC* **99.4.2** *P* **43** *L* **1** # 57

Gardner, Andy Linear Technology

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

Requirements for inter-operability should be mandated by 'shall' instead of 'should'

SuggestedRemedy

Consider using shall instead of should

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. We will add the shall to 79.3.7.2 where the TLV usage rules should be specified and change this "shall" to is.

Add a PICS entry to Clause 79 PICS for this.

Cl **99** *SC* **99.4.3** *P* **43** *L* **12** # 43

Dawe, Piers Mellanox

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

Blank line.

SuggestedRemedy

Remove.

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **99.4.4** *P* **43** *L* **53** # 53

Dawe, Piers Mellanox

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

Shouldn't there be some text mentioning the frame count feature here, as there is for Receive Processing?

SuggestedRemedy

Add some text mentioning the frame count feature.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Add: "When preemption capability is active, a 2-bit rolling frame count is encoded in the SMD-S value. "
At line 44 add: "The SMD-C encodes the same frame count value as the SMD-S of the initial fragment."

Cl **99** *SC* **99.4.4** *P* **44** *L* **10** # 46

Dawe, Piers Mellanox

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

Link Interruption - what?

SuggestedRemedy

Please provide a cross-reference. I could not find a statement of which PHYs use this.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Add cross reference to 46.3.4. Also cross reference Clause 78 for EEE.

Cl **99** *SC* **99.4.4** *P* **44** *L* **10** # 45

Dawe, Piers Mellanox

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

The PLS_CARRIER.indication primitive is only produced during full duplex operation when EEE or Link Interruption is supported.

SuggestedRemedy

In full duplex operation, the PLS_CARRIER.indication primitive is not produced unless EEE or Link Interruption is supported.

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **99.4.7.1** *P* **45** *L* **37** # 54

Dawe, Piers Mellanox

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

This says "PLS service interface between MAC Merge sublayer and PLS" but 6, Physical Signaling (PLS) service specifications, says "This clause specifies the services provided by the PLS sublayer to the MAC sublayer for 1 Mb/s and 10 Mb/s implementations of this standard" which are invalid speeds for MAC Merge.

SuggestedRemedy

PLS service interface between MAC Merge sublayer and RS?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. The sentence in Clause 6 is inaccurate. All the xMII Clauses indicate that they use Clause 6 primatives.
E.g. this text from 35.2.1:
"The Reconciliation sublayer maps the signals provided at the GMII to the PLS service primitives defined in Clause 6. The PLS service primitives provided by the Reconciliation sublayer, and described here, behave in exactly the same manner as defined in Clause 6."
and this text from 46.1.7:
"The Reconciliation Sublayer (RS) shall map the signals provided at the XGMII to the PLS service primitives defined in Clause 6. The PLS service primitives provided by the RS and described here behave in exactly the same manner as defined in Clause 6."

The commenter can submit a maintenance request or, if the commenter wishes, the editor will submit a maintenance request to correct this statement in Clause 6.

Cl **99** *SC* **99.5** *P* **54** *L* **1** # 17

Remein, Duane Huawei

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

A quick scan of Cl 99 revels 18 "shall" statement but there are only 15 PICS statements. These should be aligned

SuggestedRemedy

Either reduce the "shall" statements or add PICS statements so every requirement is listed in the PICS.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Add PICS items for

Not generating PAUSE (page 35 line 46)
Split MM-7 into two, one for verify and one for response shalls
Ensuring CRC error (page 44 line 22)

Cl **999** *SC* **999** *P* **2** *L* **3** # 47

Dawe, Piers Mellanox

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

The abstract isn't a suitable place for advertising material.

SuggestedRemedy

Delete "Adoption of Ethernet into new market areas such as automotive, industrial automation, transportation (aircraft, railway and heavy trucks) has generated a need to converge low latency and best effort traffic streams." As they appear nowhere else in the draft, delete "automotive" and "industrial" from the list of keywords.

Response *Response Status* **C**

ACCEPT.

Cl **999** *SC* **999** *P* **12** *L* **7** # 49

Dawe, Piers Mellanox

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

and associated annexes includes

SuggestedRemedy

and associated annexes include

Response *Response Status* **C**

REJECT. Talk to the chief editor. This is the front matter that comes from IEEE 802.3 and is the same as the text in P8023_D3p1_SECTION1.pdf.