DISPOSITION OF BALLOT COMMENTS ON

IEEE *Draft* P802.1AS/D7.5

DRAFT IEEE Standard for Local and Metropolitan Area Networks—Timing and Synchronization for Time-Sensitive Applications in Bridged Local Area Networks

Sponsor

LAN MAN Standards Committee of the IEEE Computer Society

Prepared by: **Geoffrey M. Garner, Project Editor**

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Commentary:

This Disposition of Ballot Comments has been prepared to document the ballot comments received in the Sponsor ballot on P802.1AS/D7.5, and to record the resolutions of those ballot comments, agreed during the **meeting of 802.1 held in November, 2010**. The document contains:

1) A table of responses received.
2) A listing of comments received, each accompanied by a disposition.

This document constitutes a record of the Instructions to the Editor for the preparation of the next draft of IEEE P802.1AS.

1. Ballot summary

The following table indicates the status of each ballot response received. Where comments have been received without an accompanying ballot, this is indicated in the *Comments* column. The Status column indicates the voting status of the responder. *V(oting)* indicates 802.1 voting member at the start of the ballot period. *N(on-voting)* indicates a comment only response. *L(iaison)* indicates a voting liaison response. The *Vote* column indicates the vote cast; Y=Approve, N=Disapprove, T=Abstain due to lack of time, E=Abstain due to lack of expertise, O=Abstain for other reasons, C=Comments only.

The results of the ballot can be seen in the second table.

Table 1—Ballot responses

STATUS	VOTE	FIRST NAME	SURNAME	COMMENTS?
V	y	Thomas	Alexander	
V	y	Butch	Anton	
V	y	Danilo	Antonelli	
V	y	Galina	Antonova	
V	y	Lee	Armstrong	
V	y	Hugh	Barrass	
V		Robert	Boatright	
V	y	William	Byrd	
V	y	Juan	Carreon	
V	y	Keith	Chow	
V	y	Charles	Cook	
V	y	Wael	Diab	
V	y	Russell	Dietz	
V	y	Thomas	Dineen	
V	y	Frank	Effenberger	
V	y	C	Fitzgerald	
V	y	Prince	Francis	
V	y	Yukihiro	Fujimoto	
V	y	Geoffrey	Garner	yes
V	y	Devon	Gayle	
V	y	Mariana	Goldhamer	
V		Sergiu	Goma	
V	n	David	Goodal	yes

Table 1—Ballot responses

STATUS	VOTE	FIRST NAME	SURNAME	COMMENTS?
V	y	Randall	Groves	
V	y	Craig	Gunther	
V	y	C	Guy	
V	y	Joseph	Gwinn	yes
V	y	Stephen	Haddock	
V	n	Marek	Hajduczenia	
V	y	Christopher	Hall,	
V	y	Karl	Heubaum	
V	y	David	Hunter	
V	t	C	Huntley	
V	y	Akio	Iso	
V	y	Atsushi	Ito	
V	y	Raj	Jain	
V	y	Anthony	Jeffree	
V		Thomas	Joergensen	
V	y	Girault	Jones	
V	y	Shinkyo	Kaku	
V	y	Piotr	Karocki	
V	y	Stuart	Kerry	
V	y	Max	Kicherer	
V	y	Yongbum	Kim	
V	y	Gerald	Kolbe	
V	y	Seiji	Kozaki	
V	y	Bruce	Kraemer	
V		Glen	Kramer	
V	y	Paul	Lambert	
V	y	Jeremy	Landt	
V	y	Li	Li	
V	y	G	Luri	
V	y	Eric	Lynskey	
V	y	Elvis	Maculuba	
V		Faramarz	Maghsoodlou	

Table 1—Ballot responses

STATUS	VOTE	FIRST NAME	SURNAME	COMMENTS?
V		Jeffrey	Mandin	
V	y	Arthur	Marris	
V	y	Peter	Martini	
V	y	Jeffery	Masters	
V	y	Jonathon	Mclendon	
V	y	Gary	Michel	
V	y	Jose	Morales	
V	y	Bruce	Muschlitz	
V	y	Michael	Newman	
V	y	Nick	Nikjoo	
V	t	Paul	Nikolich	
V	y	Satoshi	Obara	
V	y	David	Olsen	
V	n	Stephen	Palm	
V	y	Glenn	Parsons	yes
V	y	Subburajan	Ponnuswamy	
V		Hayim	Porat	
V	y	Maximilian	Riegel	
V	y	Robert	Robinson	
V	y	Jessy	Rouyer	
V	y	Randall	Safier	
V	y	John	Santhoff	
V	y	Peter	Saunderson	
V	y	Bartien	Sayogo	
V		Benson	Schliesser	
V		Suman	Sharma	
V	y	Shusaku	Shimada	
V	y	Gil	Shultz	
V		Kapil	Sood	
V		Amjad	Soomro	
V	y	Matthew	Squire	
V	t	Manikantan	Srinivasan	

Table 1—Ballot responses

STATUS	VOTE	FIRST NAME	SURNAME	COMMENTS?
V	y	Kevin B	Stanton	
V	y	Thomas	Starai,	
V	y	Walter	Struppler	
V	y	Joseph	Tardo	
V	y	William	Taylor	
V	y	Michael Johas	Teener	
V	y	Patricia	Thaler	
V	y	David	Thompson	
V	n	Geoffrey	Thompson	
V	y	Solomon	Trainin	
V	y	Mark-Rene	Uchida	
V	y	Dmitri	Varsanofiev	
V	y	Prabodh	Varshney	
V	y	Ludwig	Winkel	
V	y	Kunpeng	WU	
V	y	Oren	Yuen	
V	y	Zhen	Zhou	

Table 2—

Category	Total	Percentage
Yes	86	95.56%
No	4	4.44%
Abstain	3	2.88%
No. of Voters	104	100.00%
Voters responding	93	89.42%

2. Ballot Comments

2.1 Comments sorted by clause/page/line

Cl **07** *SC* **7.3.4** *P* **35** *L* **6** # 1

Gwinn, Joseph Individual

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

In "determined by RSTP can be sub, or even inadequate", what does "sub" mean? Something is missing.

SuggestedRemedy

Expand "sub", using standard English.

Response *Response Status* **C**

ACCEPT. This was a typo; the response to comment #4 of the D7.2 recirculation ballot indicated that this word should be "suboptimal". "sub" will be changed to "suboptimal".

Cl **10** *SC* **10.2.11.3** *P* **77** *L* **21** # 12

Garner, Geoffrey Individual

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

The submitter of this comments acknowledges Giray Curgunlun for having pointed out this item.
In Figure 10-8 (the PortSyncSyncSend state machine), the variable syncReceiptTimeoutTime is not updated in the case where the sync interval for the upstream, sending port is less than one half the sync interval for the current port, because in this case the expression (currentTime - lastSyncSentTime >= 0.5*(syncInterval) evaluates to FALSE, which makes the entire expression on the transition from SEND_MD_SYNC back to itself FALSE. The transition will only occur once enough time has elapsed that the condition is TRUE, and only then will syncReceiptTimeoutTime be updated. However, this may result in premature (and incorrect) occurrence of sync receipt timout. As an example, suppose the upstream sync interval is 125ms, and the sync interval for the Bridge whose sending port is invoking this state machine is 1s. On receipt of the first sync message, syncReceiptTimeoutTime is set to currentTime+3*(125ms) = currentTime+375ms. Assuming Sync messages are received every 125ms, the next 3 Sync messages will be ignored because one half sync interval for the current port (i.e., 0.5 s) has not yet elapsed. However, syncReceiptTimeoutTime will not be updated and, as a result, the condition currentTime >= syncReceiptTimeoutTime will evaluate to TRUE after 375 ms has elapsed, i.e., just at or after the receipt of the 3rd Sync message. This will cause sync receipt timeout to occur, which is not the desired behavior.

SuggestedRemedy

Add logic to the PortSyncSyncSend state machine that will cause syncReceiptTimeoutTime to be updated each time a PortSyncSync structure is received, i.e., on receipt of each Sync message, regardless of whether 0.5 sync interval for the current port has elapsed.

Response *Response Status* **C**

ACCEPT. The logic will be added. This will most likely be done by adding a new block below the SEND_MD_SYNC block, in which syncReceiptTimeoutTime is set. There will be an unconditional transition to this block from the SEND_MD_SYNC block, and a transition to this new block from itself on the condition that a sync message is received but less than 0.5 sync interval has elapsed (and rcvdPSSyncPtr->localPortNumber != thisPort and portEnabled and pttPortEnabled and asCapable and selectedRole[thisPort] == MasterPort). There will also be transitions to SEND_MD_SYNC and SYNC_RECEIPT_TIMEOUT on the same 2 conditions, respectively, as for the current transitions to these blocks from SEND_MD_SYNC. The current transitions from the SEND_MD_SYNC block to itself and to the SYNC_RECEIPT_TIMEOUT block will be removed.

Cl **10** *SC* **10.2.11.3** *P* **77** *L* **27** # 11

Garner, Geoffrey Individual

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

The submitter of this comments acknowledges Giray Curgunlun for having pointed out this item.
In Figure 10-8 (the PortSyncSyncSend state machine), the condition
((rcvdPSSync &&
(currentTime - lastSyncSentTime >= 0.5*syncInterval) &&
rcvdPSSyncPtr->localPortNumber != thisPort))
|| ((currentTime - lastSyncSentTime >= syncInterval) &&
(lastRcvdPortNum != thisPort)))
&& portEnabled && pttPortEnabled && asCapable && selectedRole[thisPort] == MasterPort
is missing an open parenthesis. The open parenthesis should be added at the beginning, i.e., before the first open parenthesis. The condition then will read:
(((rcvdPSSync &&
(currentTime - lastSyncSentTime >= 0.5*syncInterval) &&
rcvdPSSyncPtr->localPortNumber != thisPort))
|| ((currentTime - lastSyncSentTime >= syncInterval) &&
(lastRcvdPortNum != thisPort)))
&& portEnabled && pttPortEnabled && asCapable && selectedRole[thisPort] == MasterPort

SuggestedRemedy

Add the open parenthesis as indicated.

Response *Response Status* **C**

ACCEPT.

Cl **11** *SC* **11.1.3** *P* **115** *L* **43** # 2

Gwinn, Joseph Individual

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

Is the statement "The corresponding difference for link delay asymmetry is also usually negligible" really correct, given that Ethernet systems can be connected via SONET and/or SDH WANs, which are universally rings, and thus have significant asymmetry. The "usually" really isn't a good escape, as people should be informed when to be cautious.

SuggestedRemedy

Verify statement; correct as needed.
Note that the "Must be satisfied" checkbox is not presented, for unknown reasons.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. The statement was intended to apply to links where the first part of the paragraph, which talks about the error in mean propagation delay due to the difference in the local and GM timebases, applies. The same reasoning as in the first part of the paragraph applies because the link delay asymmetry is usually of the same order of magnitude as the link delay, or less. The example given in the first part of the paragraph is that of a link for which the mean propagation delay is 100 ns, and the same reasoning would apply for link delay asymmetry of the order of 100 ns or less.

The above will be made more clear. The sentence will be changed to:

"The corresponding difference for link delay asymmetry in this example is also negligible because the magnitude of the link delay asymmetry is of the same order of magnitude as the mean propagation time, or less."

Cl **11** *SC* **11.2.13.3** *P* **123** *L* **22** # 13

Garner, Geoffrey Individual

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

The submitter of this comments acknowledges Giray Curgunlun for having pointed out this item.
In the MDSyncReceiveSM, the followUpReceiptTimeoutTime is computed as currentTime+syncInterval. The syncInterval must be the sync interval for the upstream port that sent the Sync message; it is computed using the logMessageInterval field value of the received Sync message. This needs to be made clear (the syncInterval in the WAITING_FOR_FOLLOW_UP block is described in 10.2.4.5, which is a more generic definition of sync interval without regard to which port the sync interval is associated with).

SuggestedRemedy

Make it clear that syncInterval is that for the upstream port that sent the Sync message, and indicate how it is computed.

Response *Response Status* **C**

ACCEPT. The reference to the global variable syncInterval will be changed to a new local variable (which will be added to 11.2.13.1) upstreamSyncInterval. This will be computed in the WAITING_FOR_FOLLOW_UP block as:

upstreamSyncInterval = 2^(rcvdSyncPtr->logMessageInterval)

(with the exponent written at superscript level, rather than using the '^' notation)

Cl **11** *SC* **11.2.17.2** *P* **134** *L* **33** # 10

Garner, Geoffrey Individual

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

The response to comment #142 of D7.0 has not been fully implemented. In particular, the following 3 instances of "requestor" were not changed to "requester" (these were the first 3 instances identified in the response to #142 of D7.0):
1) p. 134, line 33 (Figure 11-10)
2) p. 147, line 35 (Figure 12-1)
3) p. 148, line 11 (this was p.146, line 3 in D7.0)

SuggestedRemedy

Change "requestor" to "requester" in these places

Response *Response Status* **C**

ACCEPT.

Cl **12** *SC* **12.3** *P* **149** *L* **49** # 14

Goodall, David Individual

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

The 802.11v timing measurement feature may be used for purposes other than 802.1as. Therefore the setting of the timing measurement bit in the capabilities is not sufficient to determine asCapable for 802.1as in an 802.11 context.

SuggestedRemedy

I think there needs to be some automatic method to allow an 802.11 STA to discover the 802.1as capabilities of another 802.11 STA that it may associate to.

Response *Response Status* **U**

REJECT. The comment is against material that has not changed since the previous draft, and is therefore out of scope. In addition, the commenter has not proposed a solution.

Cl **12** *SC* **12.4.1.6.2** *P* **154** *L* **53** # 15

Goodall, David Individual

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

The ordering of fields for the MLME-TIMINGMSMT.confirm is not the same as in 802.11v (10.3.60.2).

SuggestedRemedy

Make 802.1as consistent with 802.11v or plan to raise a maintenance comment in 802.11 later.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. The names and order of parameters will be changed to match those in 802.11v. This will be done for all the primitives.

Cl **12** *SC* **12.4.2.6** *P* **157** *L* **26** # 16

Goodall, David Individual

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

The ordering of fields for the MLME-TIMINGMSMT.indication is not the same as in 802.11v (10.3.60.3).

SuggestedRemedy

Make 802.1as consistent with 802.11v or plan to raise a maintenance comment in 802.11 later.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. See comment 15. The names and order of parameters will be changed to match those in 802.11v. This will be done for all the primitives.

Cl **14** *SC* **14.2.8** *P* **176** *L* **16** # 5

Garner, Geoffrey Individual

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

The intended behavior of the gmCapable managed object when prioirity1 is changed is not clear. 14.2.8 indicates that gmCapable is TRUE if a time-aware system is capable of being grandmaster, and FALSE if it is not. 8.6.2.1 indicates that priority1 shall be 255 for a system that is not grandmaster-capable, and gives default values in Table 8-2 for different types of systems that are grandmaster capable (these defaults are all less than 255). However, the gmCapble managed object is read-only, while the priority1 managed object is read-write. It is not clear what should happen to gmCapable, if anything, if priority1 is changed from 255 to a value less than 255, or vice-versa. In addition, 8.6.2.2 indicates that clockClass is set to 255 if gmCapable is FALSE, and implies that it is set to a value less than 255 if gmCapable is TRUE. Presumably, clockClass should not change if priority1 changes, as these are different attributes considered by BMCA, though this is not stated explicitly. The following are 3 possibilities on how gmCapable might behave when priority1 changes, and there may be more:
1) The user is free to change priority1 from 255 to a value less than 255, and vice-versa. If the user does this, gmCapable is automatically updated to reflect this. It would need to be stated whether clockClass should change if gmCapable changes.
2) The user is free to change priority1 from 255 to a value less than 255, and vice-versa. However, if the user does this, gmCapable and clockClass do not change; they are both inherent attributes of the clock. The value of priority1 that the user sets will be used in BMCA, and will be considered before clockClass and may not be consistent with gmCapable; however, the intended use of priority1 is to override the other attributes. Therefore, if the user does change priority1 from a value less than 255 to 255 or vice-versa, this is done at the user's risk.
3) While priority1 is read-write, its value is not completely unconstrained. If gmCapable is TRUE, priority1 cannot be set to 255 (but can be set to any value in the range [1,254]), and if gmCapable is FALSE, priority1 is fixed at 255 and the user cannnot change its value. With this possibility, priority1, gmCapable, and clockClass are always consistent.
As indicated above, there may be other possibilities as well.

SuggestedRemedy

Clarify what the intended behavior of gmCapable and clockClass is when priority1 is changed from 255 to a value less than 255 or vice-versa (and clarify whether or not such changes are allowable).

Response *Response Status* **C**

REJECT. Page 45, line 23 indicates that priority1 shall be 255 for systems that are not gmCapable (this is repeated in the corresponding place in the MIB in clause 15). This means that if a system is not gmCapable, priority1 cannot be changed to a number other than 255.

Cl **14** *SC* **14.2.8** *P* **176** *L* **16** # 4

Garner, Geoffrey Individual

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

This comment is submitted on behalf of Santosh Doke.
It is not clear whether GmCapable flag should be changed based on the Priority1 value being 255 or not. For example, consider a time-aware system that is GM capable, but its priority1 is now changed to 255. Should the GmCapable be set to FALSE, or should it be TRUE as the system does have GM capabilities.

SuggestedRemedy

Make it clear that gmCapable should automatically be changed if priority1 changes from 255 to something else or vice-versa.

Response *Response Status* **C**

REJECT. Group 4 and 5. See response to 5.

Cl **15** *SC* **15..5** *P* **235** *L* **25** # 19

Parsons, Glenn Individual

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

Why are you using counter32 instead of counter64? The latter is used in 802.1Q because of the desire to not have them rollover in under an hour on fast links...

SuggestedRemedy

Change to counter64 unless you have a good reason :-)

Response *Response Status* **C**

REJECT. Counter32 is sufficient, as the various 802.1AS messages are sent at rates that are indepentent of link speed and are relatively infrequent.

Cl **15** *SC* **15.2** *P* **193** *L* **23** # 18

Parsons, Glenn Individual

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

I count 7 in the list :-)

SuggestedRemedy

Change to "..seven subtrees."

Response *Response Status* **C**

ACCEPT. "five subtrees" will be changed to "seven subtrees".

Cl **15** *SC* **15.3** *P* **194** *L* **17** # 17

Parsons, Glenn Individual

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

"The following tables and objects..." is ambiguous as none are listed.

SuggestedRemedy

Do you mean all of them (and remove "following") or do you mean the 4 listed in the next paragraph? If the latter, then this paragraph needs to be merged wiotht he follwoing two.

Response *Response Status* **C**

ACCEPT. The reference to "the following tables and objects" should be to "the following objects". Therefore, "tables and" will be removed.

The sentence on p.194, lines 30 and 31 will be reworded as:

Improper manipulation of the following writable objects could result in a segmented time-aware
network, could compromise the expected accuracy, and could interrupt paths of the PTP domain.

The sentences on p.194, lines 23 - 25 will be reworded as:

Improper manipulation of the following writable objects could result in an unintended grandmaster to be
elected, when a system is grandmaster capable in a gPTP domain. It could also be used maliciously to cause
frequent grandmaster changes, thereby affecting network stability.

The extraneous space on p.194, line 19, after "instability" will be removed.

Cl **15** *SC* **15.4** *P* **194** *L* **51** # 8

Garner, Geoffrey Individual

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

Items (b) and (d) reference IEEE 1588. Item (c) references the respective subclause of 802.1AS. It seems that each item should reference both the respectivel sublcause of 802.1AS and the respective subclause of 1588, with the former first.

SuggestedRemedy

For (b), change ". . . as defined in IEEE Std 1588-2008 7.6.2.4" to ". . . as defined in 8.6.2.2 and IEEE Std 1588-2008 7.6.2.4"
For (c), change "Clock accuracy value from 8.6.2.3" to "Clock accuracy value from 8.6.2.3 and IEEE Std 1588 7.6.2.5"
For (d), change ". . . as defined in IEEE Std 1588-2008 7.6.2.6" to ". . . as defined in 8.6.2.7 and IEEE Std 1588-2008 7.6.2.6"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The references in b, c, and d will be changed to:

In (b): Clock class value (see 8.6.2.2)
In (c): Clock accuracy value (see 8.6.2.3)
In (d): Source of time used by grandmaster (see 8.6.2.7)

Cl **A** *SC* **A.12** *P* **260** *L* **4** # 9

Garner, Geoffrey Individual

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

In the headings for A.12, A.13, A.14, A.15, A.16, and A.17, "Media Dependent" should be "Media-dependent", i.e., "dependent" should not be capitalized and "Media-dependent" should be hyphenated because it is used as an adjective. The following similar changes are needed in the headings of these subclauses: (a) "Full Duplex, Point to Point Link" should be "full-duplex, point-to-point link" in the A.12 heading, and (b) "Link" should be "link" in the A.13, A.14, A.15, and A.16 headings.

SuggestedRemedy

Make the indicated changes.

Response *Response Status* **C**

ACCEPT.

Cl **A** *SC* **A.9** *P* **256** *L* **43** # 6

Garner, Geoffrey Individual

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

Some of the PICS entries require that values be provided in the support column. In the following cases, either it is not clear what value should be supplied or the supplying of a value is inconsistent with the read-write status of the respective quantity:
1) A.9, p.256, line 43. priority1 is read-write, and therefore can be changed by the user. What value should be supplied in the support column (e.g., the default value, or something else)?
2) A.9, p.256, line 53. priority2 is read-write, and therefore can be changed by the user. What value should be supplied in the support column (e.g., the default value, or something else)?
3) A.9, p.257, line 30. announce receipt timeout is read-write, and therefore can be changed by the user. It is also a per-port variable/managed object. What value should be supplied in the support column (e.g., the default value, or something else)?
4) A.9, p.257, line 42. sync receipt timeout is read-write, and therefore can be changed by the user. It is also a per-port variable/managed object. What value should be supplied in the support column (e.g., the default value, or something else)?
5) A.12, p. 261, line 52 and p.262, line 6. values are to be filled in for Pdelay eman request transmission interval and Sync mean transmission interval. However, the correponding requirements for the Announce interval (MIMSTR-10, p. 259, line 41), time sync interval for 802.11 (MDDOT11-4, p. 262, line 50), and time sync interval for EPON (MDEPON-4, p.263, line 20) are not asking for values in the support column. This seems inconsistent. In any case, it is not clear what values should be filled in, as the respective current values can change. Should it be the initial values that are filled in, or something else?

SuggestedRemedy

Clarify what is to be filled in for the values asked for in the Support column, for all PICS entries where a value is asked for. If it is decided that it is not appropriate to ask for values in some of the cases, removed the respective text that asks for the value from the Support column.

Response *Response Status* **C**

ACCEPT. It is not appropriate to ask for values in the listed cases. The respective text that asks for the value from the Support column will be removed. In addition, the other places in the PICS where values are asked for in the support are yes/no questions, and it is not appropriate to ask for values there; the text that asks for values will be removed there as well.

Cl **C** *SC* **C.2** *P* **273** *L* **48** # 3

Gwinn, Joseph Individual

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

In "for the definitions of TAIand UTC", there is a missing space.

SuggestedRemedy

Change to read "TAI and", the intervening space being new.

Response *Response Status* **C**

ACCEPT.

Cl **F** *SC* **F.2** *P* **291** *L* **41** # 7

Garner, Geoffrey Individual

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

Item (e) indicates that the default announceReceiptTimeout is 2. This needs to be changed to 3, consistent with the analogous change made to 10.6.3.2. as a result of comment 50 of D7.2

SuggestedRemedy

Change the value 2 to 3.

Response *Response Status* **C**

ACCEPT.

2.2 Comments sorted by comment number

Cl **07** *SC* **7.3.4** *P* **35** *L* **6** # 1

Gwinn, Joseph Individual

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

In "determined by RSTP can be sub, or even inadequate", what does "sub" mean? Something is missing.

SuggestedRemedy

Expand "sub", using standard English.

Response *Response Status* **C**

ACCEPT. This was a typo; the response to comment #4 of the D7.2 recirculation ballot indicated that this word should be "suboptimal". "sub" will be changed to "suboptimal".

Cl **11** *SC* **11.1.3** *P* **115** *L* **43** # 2

Gwinn, Joseph Individual

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

Is the statement "The corresponding difference for link delay asymmetry is also usually negligible" really correct, given that Ethernet systems can be connected via SONET and/or SDH WANs, which are universally rings, and thus have significant asymmetry. The "usually" really isn't a good escape, as people should be informed when to be cautious.

SuggestedRemedy

Verify statement; correct as needed.
Note that the "Must be satisfied" checkbox is not presented, for unknown reasons.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. The statement was intended to apply to links where the first part of the paragraph, which talks about the error in mean propagation delay due to the difference in the local and GM timebases, applies. The same reasoning as in the first part of the paragraph applies because the link delay asymmetry is usually of the same order of magnitude as the link delay, or less. The example given in the first part of the paragraph is that of a link for which the mean propagation delay is 100 ns, and the same reasoning would apply for link delay asymmetry of the order of 100 ns or less.

The above will be made more clear. The sentence will be changed to:

"The corresponding difference for link delay asymmetry in this example is also negligible because the magnitude of the link delay asymmetry is of the same order of magnitude as the mean propagation time, or less."

Cl **C** *SC* **C.2** *P* **273** *L* **48** # 3

Gwinn, Joseph Individual

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

In "for the definitions of TAIand UTC", there is a missing space.

SuggestedRemedy

Change to read "TAI and", the intervening space being new.

Response *Response Status* **C**

ACCEPT.

Cl **14** *SC* **14.2.8** *P* **176** *L* **16** # 4

Garner, Geoffrey Individual

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

This comment is submitted on behalf of Santosh Doke.
It is not clear whether GmCapable flag should be changed based on the Priority1 value being 255 or not. For example, consider a time-aware system that is GM capable, but its priority1 is now changed to 255. Should the GmCapable be set to FALSE, or should it be TRUE as the system does have GM capabilities.

SuggestedRemedy

Make it clear that gmCapable should automatically be changed if priority1 changes from 255 to something else or vice-versa.

Response *Response Status* **C**

REJECT. Group 4 and 5. See response to 5.

Cl **14** *SC* **14.2.8** *P* **176** *L* **16** # 5

Garner, Geoffrey Individual

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

The intended behavior of the gmCapable managed object when prioirity1 is changed is not clear. 14.2.8 indicates that gmCapable is TRUE if a time-aware system is capable of being grandmaster, and FALSE if it is not. 8.6.2.1 indicates that priority1 shall be 255 for a system that is not grandmaster-capable, and gives default values in Table 8-2 for different types of systems that are grandmaster capable (these defaults are all less than 255). However, the gmCapble managed object is read-only, while the priority1 managed object is read-write. It is not clear what should happen to gmCapable, if anything, if priority1 is changed from 255 to a value less than 255, or vice-versa. In addition, 8.6.2.2 indicates that clockClass is set to 255 if gmCapable is FALSE, and implies that it is set to a value less than 255 if gmCapable is TRUE. Presumably, clockClass should not change if priority1 changes, as these are different attributes considered by BMCA, though this is not stated explicitly. The following are 3 possibilities on how gmCapable might behave when priority1 changes, and there may be more:
1) The user is free to change priority1 from 255 to a value less than 255, and vice-versa. If the user does this, gmCapable is automatically updated to reflect this. It would need to be stated whether clockClass should change if gmCapable changes.
2) The user is free to change priority1 from 255 to a value less than 255, and vice-versa. However, if the user does this, gmCapable and clockClass do not change; they are both inherent attributes of the clock. The value of priority1 that the user sets will be used in BMCA, and will be considered before clockClass and may not be consistent with gmCapable; however, the intended use of priority1 is to override the other attributes. Therefore, if the user does change priority1 from a value less than 255 to 255 or vice-versa, this is done at the user's risk.
3) While priority1 is read-write, its value is not completely unconstrained. If gmCapable is TRUE, priority1 cannot be set to 255 (but can be set to any value in the range [1,254]), and if gmCapable is FALSE, priority1 is fixed at 255 and the user cannnot change its value. With this possibility, priority1, gmCapable, and clockClass are always consistent.
As indicated above, there may be other possibilities as well.

SuggestedRemedy

Clarify what the intended behavior of gmCapable and clockClass is when priority1 is changed from 255 to a value less than 255 or vice-versa (and clarify whether or not such changes are allowable).

Response *Response Status* **C**

REJECT. Page 45, line 23 indicates that priority1 shall be 255 for systems that are not gmCapable (this is repeated in the corresponding place in the MIB in clause 15). This means that if a system is not gmCapable, priority1 cannot be changed to a number other than 255.

Cl **A** *SC* **A.9** *P* **256** *L* **43** # 6

Garner, Geoffrey Individual

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

Some of the PICS entries require that values be provided in the support column. In the following cases, either it is not clear what value should be supplied or the supplying of a value is inconsistent with the read-write status of the respective quantity:
1) A.9, p.256, line 43. priority1 is read-write, and therefore can be changed by the user. What value should be supplied in the support column (e.g., the default value, or something else)?
2) A.9, p.256, line 53. priority2 is read-write, and therefore can be changed by the user. What value should be supplied in the support column (e.g., the default value, or something else)?
3) A.9, p.257, line 30. announce receipt timeout is read-write, and therefore can be changed by the user. It is also a per-port variable/managed object. What value should be supplied in the support column (e.g., the default value, or something else)?
4) A.9, p.257, line 42. sync receipt timeout is read-write, and therefore can be changed by the user. It is also a per-port variable/managed object. What value should be supplied in the support column (e.g., the default value, or something else)?
5) A.12, p. 261, line 52 and p.262, line 6. values are to be filled in for Pdelay eman request transmission interval and Sync mean transmission interval. However, the correponding requirements for the Announce interval (MIMSTR-10, p. 259, line 41), time sync interval for 802.11 (MDDOT11-4, p. 262, line 50), and time sync interval for EPON (MDEPON-4, p.263, line 20) are not asking for values in the support column. This seems inconsistent. In any case, it is not clear what values should be filled in, as the respective current values can change. Should it be the initial values that are filled in, or something else?

SuggestedRemedy

Clarify what is to be filled in for the values asked for in the Support column, for all PICS entries where a value is asked for. If it is decided that it is not appropriate to ask for values in some of the cases, removed the respective text that asks for the value from the Support column.

Response *Response Status* **C**

ACCEPT. It is not appropriate to ask for values in the listed cases. The respective text that asks for the value from the Support column will be removed. In addition, the other places in the PICS where values are asked for in the support are yes/no questions, and it is not appropriate to ask for values there; the text that asks for values will be removed there as well.

Cl **F** *SC* **F.2** *P* **291** *L* **41** # 7

Garner, Geoffrey Individual

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

Item (e) indicates that the default announceReceiptTimeout is 2. This needs to be changed to 3, consistent with the analogous change made to 10.6.3.2. as a result of comment 50 of D7.2

SuggestedRemedy

Change the value 2 to 3.

Response *Response Status* **C**

ACCEPT.

Cl **15** *SC* **15.4** *P* **194** *L* **51** # 8

Garner, Geoffrey Individual

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

Items (b) and (d) reference IEEE 1588. Item (c) references the respective subclause of 802.1AS. It seems that each item should reference both the respectivel sublcause of 802.1AS and the respective subclause of 1588, with the former first.

SuggestedRemedy

For (b), change ". . . as defined in IEEE Std 1588-2008 7.6.2.4" to ". . . as defined in 8.6.2.2 and IEEE Std 1588-2008 7.6.2.4"
For (c), change "Clock accuracy value from 8.6.2.3" to "Clock accuracy value from 8.6.2.3 and IEEE Std 1588 7.6.2.5"
For (d), change ". . . as defined in IEEE Std 1588-2008 7.6.2.6" to ". . . as defined in 8.6.2.7 and IEEE Std 1588-2008 7.6.2.6"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
The references in b, c, and d will be changed to:

In (b): Clock class value (see 8.6.2.2)
In (c): Clock accuracy value (see 8.6.2.3)
In (d): Source of time used by grandmaster (see 8.6.2.7)

Cl **A** *SC* **A.12** *P* **260** *L* **4** # 9

Garner, Geoffrey Individual

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

In the headings for A.12, A.13, A.14, A.15, A.16, and A.17, "Media Dependent" should be "Media-dependent", i.e., "dependent" should not be capitalized and "Media-dependent" should be hyphenated because it is used as an adjective. The following similar changes are needed in the headings of these subclauses: (a) "Full Duplex, Point to Point Link" should be "full-duplex, point-to-point link" in the A.12 heading, and (b) "Link" should be "link" in the A.13, A.14, A.15, and A.16 headings.

SuggestedRemedy

Make the indicated changes.

Response *Response Status* **C**

ACCEPT.

Cl **11** *SC* **11.2.17.2** *P* **134** *L* **33** # 10

Garner, Geoffrey Individual

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

The response to comment #142 of D7.0 has not been fully implemented. In particular, the following 3 instances of "requestor" were not changed to "requester" (these were the first 3 instances identified in the response to #142 of D7.0):
1) p. 134, line 33 (Figure 11-10)
2) p. 147, line 35 (Figure 12-1)
3) p. 148, line 11 (this was p.146, line 3 in D7.0)

SuggestedRemedy

Change "requestor" to "requester" in these places

Response *Response Status* **C**

ACCEPT.

Cl **10** *SC* **10.2.11.3** *P* **77** *L* **27** # 11

Garner, Geoffrey Individual

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

The submitter of this comments acknowledges Giray Curgunlun for having pointed out this item.
In Figure 10-8 (the PortSyncSyncSend state machine), the condition
((rcvdPSSync &&
(currentTime - lastSyncSentTime >= 0.5*syncInterval) &&
rcvdPSSyncPtr->localPortNumber != thisPort))
|| ((currentTime - lastSyncSentTime >= syncInterval) &&
(lastRcvdPortNum != thisPort)))
&& portEnabled && pttPortEnabled && asCapable && selectedRole[thisPort] == MasterPort
is missing an open parenthesis. The open parenthesis should be added at the beginning, i.e., before the first open parenthesis. The condition then will read:
(((rcvdPSSync &&
(currentTime - lastSyncSentTime >= 0.5*syncInterval) &&
rcvdPSSyncPtr->localPortNumber != thisPort))
|| ((currentTime - lastSyncSentTime >= syncInterval) &&
(lastRcvdPortNum != thisPort)))
&& portEnabled && pttPortEnabled && asCapable && selectedRole[thisPort] == MasterPort

SuggestedRemedy

Add the open parenthesis as indicated.

Response *Response Status* **C**

ACCEPT.

Cl **10** *SC* **10.2.11.3** *P* **77** *L* **21** # 12

Garner, Geoffrey Individual

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

The submitter of this comments acknowledges Giray Curgunlun for having pointed out this item.
In Figure 10-8 (the PortSyncSyncSend state machine), the variable syncReceiptTimeoutTime is not updated in the case where the sync interval for the upstream, sending port is less than one half the sync interval for the current port, because in this case the expression (currentTime - lastSyncSentTime >= 0.5*(syncInterval) evaluates to FALSE, which makes the entire expression on the transition from SEND_MD_SYNC back to itself FALSE. The transition will only occur once enough time has elapsed that the condition is TRUE, and only then will syncReceiptTimeoutTime be updated. However, this may result in premature (and incorrect) occurrence of sync receipt timout. As an example, suppose the upstream sync interval is 125ms, and the sync interval for the Bridge whose sending port is invoking this state machine is 1s. On receipt of the first sync message, syncReceiptTimeoutTime is set to currentTime+3*(125ms) = currentTime+375ms. Assuming Sync messages are received every 125ms, the next 3 Sync messages will be ignored because one half sync interval for the current port (i.e., 0.5 s) has not yet elapsed. However, syncReceiptTimeoutTime will not be updated and, as a result, the condition currentTime >= syncReceiptTimeoutTime will evaluate to TRUE after 375 ms has elapsed, i.e., just at or after the receipt of the 3rd Sync message. This will cause sync receipt timeout to occur, which is not the desired behavior.

SuggestedRemedy

Add logic to the PortSyncSyncSend state machine that will cause syncReceiptTimeoutTime to be updated each time a PortSyncSync structure is received, i.e., on receipt of each Sync message, regardless of whether 0.5 sync interval for the current port has elapsed.

Response *Response Status* **C**

ACCEPT. The logic will be added. This will most likely be done by adding a new block below the SEND_MD_SYNC block, in which syncReceiptTimeoutTime is set. There will be an unconditional transition to this block from the SEND_MD_SYNC block, and a transition to this new block from itself on the condition that a sync message is received but less than 0.5 sync interval has elapsed (and rcvdPSSyncPtr->localPortNumber != thisPort and portEnabled and pttPortEnabled and asCapable and selectedRole[thisPort] == MasterPort). There will also be transitions to SEND_MD_SYNC and SYNC_RECEIPT_TIMEOUT on the same 2 conditions, respectively, as for the current transitions to these blocks from SEND_MD_SYNC. The current transitions from the SEND_MD_SYNC block to itself and to the SYNC_RECEIPT_TIMEOUT block will be removed.

Cl **11** *SC* **11.2.13.3** *P* **123** *L* **22** # 13

Garner, Geoffrey Individual

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

The submitter of this comments acknowledges Giray Curgunlun for having pointed out this item.
In the MDSyncReceiveSM, the followUpReceiptTimeoutTime is computed as currentTime+syncInterval. The syncInterval must be the sync interval for the upstream port that sent the Sync message; it is computed using the logMessageInterval field value of the received Sync message. This needs to be made clear (the syncInterval in the WAITING_FOR_FOLLOW_UP block is described in 10.2.4.5, which is a more generic definition of sync interval without regard to which port the sync interval is associated with).

SuggestedRemedy

Make it clear that syncInterval is that for the upstream port that sent the Sync message, and indicate how it is computed.

Response *Response Status* **C**

ACCEPT. The reference to the global variable syncInterval will be changed to a new local variable (which will be added to 11.2.13.1) upstreamSyncInterval. This will be computed in the WAITING_FOR_FOLLOW_UP block as:

upstreamSyncInterval = 2^(rcvdSyncPtr->logMessageInterval)

(with the exponent written at superscript level, rather than using the '^' notation)

Cl **12** *SC* **12.3** *P* **149** *L* **49** # 14

Goodall, David Individual

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

The 802.11v timing measurement feature may be used for purposes other than 802.1as. Therefore the setting of the timing measurement bit in the capabilities is not sufficient to determine asCapable for 802.1as in an 802.11 context.

SuggestedRemedy

I think there needs to be some automatic method to allow an 802.11 STA to discover the 802.1as capabilities of another 802.11 STA that it may associate to.

Response *Response Status* **U**

REJECT. The comment is against material that has not changed since the previous draft, and is therefore out of scope. In addition, the commenter has not proposed a solution.

Cl **12** *SC* **12.4.1.6.2** *P* **154** *L* **53** # 15

Goodall, David Individual

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

The ordering of fields for the MLME-TIMINGMSMT.confirm is not the same as in 802.11v (10.3.60.2).

SuggestedRemedy

Make 802.1as consistent with 802.11v or plan to raise a maintenance comment in 802.11 later.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. The names and order of parameters will be changed to match those in 802.11v. This will be done for all the primitives.

Cl **12** *SC* **12.4.2.6** *P* **157** *L* **26** # 16

Goodall, David Individual

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

The ordering of fields for the MLME-TIMINGMSMT.indication is not the same as in 802.11v (10.3.60.3).

SuggestedRemedy

Make 802.1as consistent with 802.11v or plan to raise a maintenance comment in 802.11 later.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. See comment 15. The names and order of parameters will be changed to match those in 802.11v. This will be done for all the primitives.

Cl **15** *SC* **15.3** *P* **194** *L* **17** # 17

Parsons, Glenn Individual

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

"The following tables and objects..." is ambiguous as none are listed.

SuggestedRemedy

Do you mean all of them (and remove "following") or do you mean the 4 listed in the next paragraph? If the latter, then this paragraph needs to be merged wiotht he follwoing two.

Response *Response Status* **C**

ACCEPT. The reference to "the following tables and objects" should be to "the following objects". Therefore, "tables and" will be removed.

The sentence on p.194, lines 30 and 31 will be reworded as:

Improper manipulation of the following writable objects could result in a segmented time-aware
network, could compromise the expected accuracy, and could interrupt paths of the PTP domain.

The sentences on p.194, lines 23 - 25 will be reworded as:

Improper manipulation of the following writable objects could result in an unintended grandmaster to be
elected, when a system is grandmaster capable in a gPTP domain. It could also be used maliciously to cause
frequent grandmaster changes, thereby affecting network stability.

The extraneous space on p.194, line 19, after "instability" will be removed.

Cl **15** *SC* **15.2** *P* **193** *L* **23** # 18

Parsons, Glenn Individual

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

I count 7 in the list :-)

SuggestedRemedy

Change to "..seven subtrees."

Response *Response Status* **C**

ACCEPT. "five subtrees" will be changed to "seven subtrees".

Cl **15** *SC* **15..5** *P* **235** *L* **25** # 19

Parsons, Glenn Individual

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

Why are you using counter32 instead of counter64? The latter is used in 802.1Q because of the desire to not have them rollover in under an hour on fast links...

SuggestedRemedy

Change to counter64 unless you have a good reason :-)

Response *Response Status* **C**

REJECT. Counter32 is sufficient, as the various 802.1AS messages are sent at rates that are indepentent of link speed and are relatively infrequent.