### IEEE P802.11Wireless LANs

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| 11ax D1.0 MAC Comment Resolution for 17.2.2.1 and 17.3.9.10 |
| Date: 2017-02-19 |
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Abstract

This submission proposes resolutions for comments of TGax Draft 1.0 with the following CIDs:

6569, 7790, 7791, 8690, 8691, 10192, 9683

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Ediotrial revision based on the feedback from Alfred
* Rev 2: Revision based on the latest agreement in 11-17-0261

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGax D1.0 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGax D1.0 Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGax Editor: Editing instructions preceded by “TGax Editor” are instructions to the TGax editor to modify existing material in the TGax draft. As a result of adopting the changes, the TGax editor will execute the instructions rather than copy them to the TGax Draft.***

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| **CID** | **Commenter** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 9683 | Yongho Seok | 118.34 | 10.3.2.8a.3 | Current TGax D1.0 is not indicating when TXVECTOR parameter TRIGGER\_RESPONDING is present. Add the following sentence at the end of subclause 10.3.2.8a.3. "The TXVECTOR parameter TRIGGER\_RESPONDING shall be present in a non-HT or non-HT duplicate PPDU transmitted by an HE STA. It is set to true if the non-HT or non-HT duplicate PPDU carries a CTS frame sent in response to an MU-RTS frame. Otherwise, it is set to false." | As per comment. | Revised –Agree in principle with the commenter. After discussing with the editor, it is better to move the new paramters of TXVECTOR for HE STA to Table 28-1—TXVECTOR and RXVECTOR parameters.We revise correspondingly and add description in Table 28-1.TGax editor to make the changes shown in 11-17/0271r2 under all headings that include CID 9683. |
| 8690 | Sigurd Schelstraete | 145.24 | 17.2.2.1 | In Table 17-1, it says that a value of "false" for "TRIGGER\_RESPONDING" means that "the MAC entity requests that the PHY entity does not have to do synchronization". In 17.2.2.6 it says that "false" means that "the MAC sublayer is requesting that the PHY entity does not do synchronization". In other words: in one case, the MAC does not require (but presumably permits) timing correction, in the other case, the MAC does not allow synchronization. It's not clear why the MAC would forbid synchronization, even if it doesn't explicitly request it. | Change definition of "TRIGGER\_RESPONDING" such that it indicates that the MAC does not require synchronization, but does not forbid it either. | Revised –Agree in principle with the commenter. The referred sentence has been revised and moved to the description in Table 28-1 (TXVECTOR and RXVECTOR parameters).TGax editor to make the changes shown in 11-17/0271r2 under all headings that include CID 9683. |
| 10192 | Yusuke Asai | 145.22 | 17.2.2.1 | In Clause 17, a TXVECTOR parameter "TRIGGER\_RESPONDING" and the corresponding requirement of pre-correction accuracy are defined. It is seemed that this TXVECTOR parameter is true when an STA respond to a trigger frame; however, there is no definition about it. | Clarify it and add some normative text. | Revised –Agree in principle with the commenter. The referred sentence has been revised and moved to the description in Table 28-1 (TXVECTOR and RXVECTOR parameters).TGax editor to make the changes shown in 11-17/0271r2 under all headings that include CID 9683. |
| 7791 | Mark Hamilton | 145.64 | 17.3.9.10 | This sentence should be a NOTE, as it is not adding normative requirements | Change the sentence starting "This requirement is the same ..." to be a NOTE. | Revised – Agree in principle with the commenter. We change the sentence to the note. We also follow the revision in 11-17-0261 to use the same style of describing the requirement.TGax editor to make the changes shown in 11-17/0271r2 under all headings that include CID 7791. |
| 8691 | Sigurd Schelstraete | 145.53 | 17.2.2.1 | "pre-compensate for carrier frequency offset (CFO) error and symbol clock error". Relative to what? | Indicate that correction is done relative to the reference provided by the trigger frame. | Revised –Agree in principle with the commenter. We add description to clarify that the compenstation is done relative to the PPDU carrying the soliciting MU-RTS Trigger frame.TGax editor to make the changes shown in 11-17/0271r2 under all headings that include CID 8691. |
| 7790 | Mark Hamilton | 145.63 | 17.3.9.10 | Confusing sentence. Doesn't seem necessary. | Delete the sentence "This requirement does not include round trip delay." | Rejected –We note that the description follows the same description in 28.3.14.3 Pre-correction accuracy requirements for HE trigger-based PPDU as shown below because the timing requirement for responding MU-RTS follows the same timing requirement for responding to a basic variant Trigger frame. *A STA that transmits an HE trigger-based PPDU shall have timing accuracy of ±0.4 µs relative to the actual ending time of the PPDU carrying the Trigger frame. This requirement does not include round trip delay.*Further, this sentence is very important and provides guidance for testing. If two STAs are located at very different distances from the AP then the trigger frame and the immediately following HE Trigger-based PPDU are off in timing due to round trip delay. |
| 6569 | John Coffey | 145.57 | 17.3.9.10 | Incorrect statement of mandatory requirement: "The residual CFO error measurement shall be made on the". This is a mandatory statement about how a measurement is to be made on a device to verify whether that device is compliant or not; it's not a requirement on the device itself. The device itself doesn't have to make any measurements at all. Apparently what is intended is to clarify the meaning of the requirement on the device from the previous sentence. It would be better to say so explicitly. | Reword to clarify that this text acts as part of the definition of the residual CFO error, and not as a requirement that any measurement has to be performed. | Rejected –We note that the description follows similar description in 28.3.14.3 Pre-correction accuracy requirements for HE trigger-based PPDU as shown below.*The residual CFO error measurement shall be made on the HE trigger-based PPDU following the HE-SIG-A field.*Further, without measurement, there is no way to know if the device follows the pre-correction requirement. Hence, the referred sentence is required. |

**Discussion:** *None.*

**Propose:**

Revised for CID 9683 per discussion and editing instructions in 11-17/0271r2.

***TGax editor: Modify 17.2.2.1 and 17.2.2.6 as the following:***

**~~17.2.2.1 General~~*~~Insert a new last row into Table 17-1 (TXVECTOR parameters) as follows:~~***

**~~Table 17-1—TXVECTOR parameters~~**

|  |  |  |
| --- | --- | --- |
| **~~Parameter~~**  | **~~Associated primitive~~**  | **~~Value~~** |
| ~~TRIGGER\_RESPONDING~~  | ~~PHY-TXSTART.request(TXVECTOR)~~ | ~~If present, false or true.~~  |

***~~Insert a new subclause at the end of 17.2.2 as follows:~~*~~17.2.2.6 TRIGGER\_RESPONDING~~**~~If present, the allowed values are false or true. A parameter value of true indicates that the MAC sublayer is
requesting that the PHY entity does synchronization as defined in 17.3.9.10 (Pre-correction accuracy
requirements). A parameter value of false indicates that the MAC sublayer is requesting that the PHY entity
does not do synchronization as defined in 17.3.9.10 (Pre-correction accuracy requirements).~~ (#9683)

***Insert a new last row into Table 28-1 (TXVECTOR and RXVECTOR parameters) as follows:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TRIGGER\_RESPONDING | FORMAT is NON\_HT | Boolean value:When True it indicates that the MAC entity requests that the PHY entity does synchronization as defined in 17.3.9.10(Pre-correction accuracy requirements). When False it indicates that the MAC entity requests that the PHY entity does not have to do synchronization as defined in 17.3.9.10 (Pre-correction accuracy requirements).Set to true if the non-HT or non-HT duplicate PPDU is sent in response to an MU-RTS Trigger frame.Set to false otherwise. | Y  | N |
| Otherwise  | Not present  | N  | N |

(#9683)

Revised for CID 7791, CID 8691 per discussion and editing instructions in 11-17/0271r2.

***TGax editor: Modify 17.3.9.10 as the following:***

**17.3.9.10 Pre-correction accuracy requirements**A STA that transmits a non-HT or non-HT duplicate(#8691) PPDU where the TXVECTOR parameter TRIGGER\_RESPONDING is true shall pre-compensate for carrier frequency offset (CFO) error and symbol clock error with respect to the non-HT or non-HT duplicate PPDU that carries the soliciting MU-RTS Trigger frame.(#8691) After compensation, the absolute value of residual CFO error with respect to the PPDU carrying the soliciting MU-RTS Trigger(#8691) frame shall not exceed 2 kHz when measured as the 10% point of complementary cumulative distribution function (CCDF)(#7791) of CFO errors in AWGN at a received power of −60 dBm in the primary 20 MHz. The residual CFO error measurement shall be made on the non-HT PPDU or non-HT duplicate PPDU following the L-STF field. The symbol clock error shall be pre-compensated by the same ppm amount as CFO error.

A STA that transmits an non-HT or non-HT duplicate PPDU where the TXVECTOR parameter
TRIGGER\_RESPONDING is true shall have timing accuracy of ±0.4 µs relative to the actual ending time of the PPDU carrying the MU-RTS Trigger frame(#8691) as observed by the STA. The STA is not expected to compensate for round trip delay.~~This requirement does not include round trip delay.~~ ~~This requirement is the same as the timing requirement for HE trigger based PPDU.~~(#7791)

NOTE – The timing requirement for transmitting an non-HT or non-HT duplicate PPDU when the TXVECTOR parameter TRIGGER\_RESPONDING is true is the same as the timing requirement for transmitting an HE trigger-based PPDU.(#7791)