### IEEE P802.11Wireless LANs

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| 11ax D1.0 MAC Comment Resolution for 9.2.5.2 and 9.2.5.7 |
| Date: 2017-01-16 |
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Abstract

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

5448, 5449, 7724, 7905, 8251, 8340, 9813

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Revise the document by removing “variant” when referring to different types of Trigger frame. Add sentence that HE sounding always uses multiple protection.

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** |
| 5448 | Graham Smith | 31.11 | 9.2.5.2 | "In an MU-RTS frame, the Duration/ID field is set to the estimated time, in microseconds, required for the pending frame,...". Should be "...required to transmit the pending frame..." | Change "required for the pending frame" to "required to transmit the pending frame" | Revised –Accept the change and revise the sentence accordingly.TGax editor to make the changes shown in 11-16/0085r1 under all headings that include CID 5448. |
| 9813 | Young Hoon Kwon | 31.10 | 9.2.5.2 | Single protection settings for MU-RTS frame transmission can be used for two different cases: 1) DL MU transmission, and 2) UL MU transmission. Current text in subbullet 1a) only describes the case for UL MU transmission. Therefore, the description needs to include these two cases. | Modify the bullet 1a) to "In an MU-RTS frame, the Duration/ID field is set to the estimated time, in microseconds, required for the pending frame, plus one CTS frame, plus the time for the solicited HE triggerbased PPDU if required, plus the time for an acknowledgement if required, plus applicable IFSs.". | Revised –We note that the DL MU procedure is already included in the description. Specifically, the pending frame includes the time for transmitting DL HE MU PPDU, and the time to transmit the solicited HE trigger-based PPDU includes the time for transmitting the acknowledgement for the DL HE MU PPDU.However, we agree that the statement “an acknowledgement frame” may be confusing. Hence, we simply rewrite with “the acknowledgement for the solicited HE trigger-based PPDU.”TGax editor to make the changes shown in 11-16/0085r1 under all headings that include CID 9813.  |
| 5449 | Graham Smith | 31.20 | 9.2.5.2 | "In a MU-BAR frame, the Duration/ID field is set to the time required for the solicited HE trigger-based PPDU plus one SIFS." Should be "time required to transmit the solicited" | Change " required for the solicited" to "required to transmit the solicited" | Accepted -TGax editor to make the changes shown in 11-16/0085r1 under all headings that include CID 5449. |
| 8251 | Pascal VIGER | 31.01 | 9.2.5.2 | How to specify the Duration/ID for BQR Trigger Frame ?Only Basic, MU-RTS and MU-BAR TF are considered in this section. | Clarify the estimated duration for BQR, and especially when it is followed by multiple frames. | Revised – Similar to the single protection setting for MU-BAR, add the single protection setting for other variants of Trigger frame.TGax editor to make the changes shown in 11-16/0085r1 under all headings that include CID 8251. |
| 7724 | Mark Hamilton | 31.33 | 9.2.5.2 | Requirement is too vague. How many "multiple BlockAck frames, Ack frames" should be accounted for? | Specify the requirement in sufficient detail to be implementable/testable. | Revised –The intention of the paragraph is not to specify the number of BlockAck frame or Ack frames sent from the AP because the number of BlockAck frame or Ack frames sent from the AP depending on the number of STAs that is solicited for HE trigger-based PPDU response from the AP.It is also meaningless to specify all possible comibnaitons for the acknowledgement of UL MU transmission because this should be specified in 10.3.2.10.3 Acknowledgement procedure for an UL MU transmission. This description in this section is not supposed to overwrite the procedure in 10.3.2.10.3.To keep the description in this section general, we simply rewrite with “the acknowledgement for the solicited HE trigger-based PPDU.”TGax editor to make the changes shown in 11-16/0085r1 under all headings that include CID 7724. |
| 7905 | Mark RISON | 31.52 | 9.2.5.2 | Need to account for HE beamforming too | After "VHT NDP," add "HE NDP," | Accepted -TGax editor to make the changes shown in 11-16/0085r1 under all headings that include CID 7905. |
| 8340 | Peter Loc | 32.26 | 9.2.5.7 | The paragraph implies that the STAs receiving the MU-RTS measure the time in microseconds between the end of the MU-RTS and the end of the PPDU carrying the CTS frame. The measured times may differ from STA to STA due to the accuracy of the measurements. For legacy devices, the accuracy is not a factor, but for HE devices due to the stringent requirement on packet alignment at the AP, minor differences in the timing may adversely affect the alignment of the packets arriving at the AP. | Modify the paragraph starting from line 26 to the following: "In a CTS frame that is transmitted in response to an MU-RTS frame, the Duration/ID field is set to the value obtained from the Duration/ID field of the MU-RTS frame that elicited the CTS frame adjusted by subtraction of aSIFSTime and the number of microseconds required to transmit the CTS frame at a data rate determined by the rules in 9.7." | Rejected –We note that for each STA that measures the time in microseconds between the end of the MU-RTS and the end of the PPDU carrying the CTS frame, the measured time is already equal to SIFS plus the time to transmit the CTS frame. Hence, the proposed text has no techincal difference with the original text, and we reject the comment due to this reason. |

**Discussion:** *None.*

**Propose:**

Revised for CID 5448, CID 9813 per discussion and editing instructions in 11-17/0085r1.

***TGax editor: Modify the sentence on page 31 line 11 in 9.2.5.2 as the following green color text:***

1a) In an MU-RTS Trigger(#5448) frame, the Duration/ID field is set to the estimated time, in microseconds,
required ~~for~~to transmit(#5448) the pending frame, plus one CTS frame, plus the time ~~for~~to transmit(#5448) the solicited HE trigger-based PPDU if required, plus the time to transmit ~~an acknowledgement frame for the solicited
HE trigger-based PPDU~~the acknowledgement for the solicited HE trigger-based PPDU(#9813) if required, plus applicable IFSs.

**Propose:**

Revised for CID 5449, 8251 per discussion and editing instructions in 11-17/0085r1.

***TGax editor: Modify the sentence on page 31 line 19 in 9.2.5.2 as the following green color text:***

3 In a BlockAckReq frame, the Duration/ID field is set to the estimated time required to transmit
one Ack or BlockAck frame, as applicable, plus one SIFS.

3a In a MU-BAR Trigger frame, BSRP Trigger frame, GCR MU-BAR Trigger frame, and BQRP Trigger frame,(#8251) the Duration/ID field is set to the time required ~~for~~to transmit(#5449) the solicited HE trigger-based PPDU plus one SIFS.

***TGax editor: Add the revision at the beginning of 9.2.5.2 as the following:***

A STA always uses multiple protection in a TXOP that includes:
— Frames that have the RDG/More PPDU subfield equal to 1
— PSMP frames
— VHT NDP Announcement frames or Beamforming Report Poll frames

— HE NDP Announcement frames or Beamforming Report Poll Trigger frame(#8251)

**Propose:**

Revised for CID 7724 per discussion and editing instructions in 11-17/0085r1.

***TGax editor: Modify the sentence on page 31 line 31 in 9.2.5.2 as the following green color text:***

7) In a Basic Trigger frame, the Duration/ID field is set to the estimated time required to transmit
the solicited HE trigger-based PPDU, plus the estimated time required to transmit ~~multiple
BlockAck frames, Ack frames or a Multi-STA BlockAck frame~~the acknowledgement for the solicited HE trigger-based PPDU, plus applicable SIFSs.

**Propose:**

Revised for CID 7905 per discussion and editing instructions in 11-17/0085r1.

***TGax editor: Modify the sentence on page 31 line 53 in 9.2.5.2 as the following underlined text:***

—Any HT NDP, VHT NDP, HE NDP or Beamforming Report Poll frame
 transmissions and explicit feedback response frames