IEEE P802.11
Wireless LANs

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| 11ax D2.0 Comment Resolution 27.5.3.2.2 |
| Date: 2018-01-09 |
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Abstract

This submission proposes resolutions for multiple comments related to TGax D2.0 with the following CIDs:

* 11030, 11100, 11312, 11313, 11697, 12591, 13194, 13195, 13828, 13971.

Revisions:

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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 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGax 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** | **PP** | **LL** | **Comment** | **Proposed Change** | **Resolution** |
| 11030 | 246 | 27 | Usage of MinTrigProcTime doesn't align with its definition in HE Cap. | Remove reference to MinTrigProcTime | RevisedTGax editor to make changes in 11-18/0075r0 under CID 11030 |
| 11100 | 247 | 32 | This para is lousy with magic numbers. Magic numbers are inherently evil because:1. They obscure the meaning of the value2. They are occasionally wrong - and reviewers will find it hard to spot such mistakes. | De-louse | RevisedTGax editor to make changes in 11-18/0075r0 under CID 11100 |
| 11312 | 246 | 2335 | The wording of these two paragraphs has to be inline with that of the first paragraph. For it to be so the MinTrigProcTIme should refer to the duration of the PPDU that follows BSYM. And when referrign to the last User Info field it should really refer to the SCH. | Use the same terminology that is used in the first paragraph in these two paragraphs as well. | RevisedTGax editor to make changes in 11-18/0075r0 under CID 11312 |
| 11313 | 247 |  | A user info field is addressed to one STA. Replace STAs with STA. Also it is obvious the UMRS Control is carried in HE variant etc. So remove "in an HE variant HT Control field" | as in comment. | RevisedDiscussion: “STAs” is in P247L24 about random RU. A random RU are contend by multiple STAs. So STAs in the sentence makes sense. TGax editor to change the 6th paragraph in 27.5.3.2.3 to “An AP shall not set any subfields of the User Info field of a Trigger frame to a value that is not supported by the recipient STAs of the User Info field. An AP shall not set any subfields of a UMRS Control field to a value that is not supported by the recipient STAs of the UMRS Control field. When an RU is allocated to only one STA the Starting Spatial Stream subfield for that STA shall be set to 0.(#11313)” |
| 11697 | 246 | 9 | Don't add MAC level padding to Trigger frames because it increases the overhead and reduces the efficiency of UL MU operation. | Delete section 27.5.3.2.2 | RejectedDiscussion: the group believe that SIFS after the PPDU which carries Trigger frame may not be enough for a STA to prepare the UL MU transmission. In some scenario, MAC padding is the only method to provide the STA additional time for preparing the UL MU transmission.  |
| 12591 | 246 | 32 | "An AID12 subfield set to 4095 is reserved to indicate start of Padding field", "The Padding field of the Trigger frame, if present, is at least two octets in length and is set to all 1s. The start of the Padding field is identified by the value 4095 in the AID12 subfield of a User Info field that would otherwise be present.", "An AP that intends to use Padding field in a Trigger frame shall indicate the start of Padding field by assigning a value of 4095 to the AID12 subfield of a User Info field that would otherwise be present and shall set the subsequent bits of the Padding field to all 1s." -- the requirements should not be triplicated | Delete the statement in Clause 27 and the one of the statements in Clause 9 | RevisedTGax editor to make changes in 11-18/0075r0 under CID 12591 |
| 13194 | 246 | 12 | MinTrigProcTime suddenly appears in this section without any reference or definition. Provide reference to Table 9-262z (section 9.4.2.237.2) where the term is first defined. | Replace the first sentence as follows:"A non-AP STA indicates its MinTrigProcTime via the Trigger Frame MAC Padding Duration subfield in HE Capabilities element that it transmits (see Table 9-262z). An AP transmitting a PPDU that contains a Trigger frame or frame containing a UMRS Control field shall ensure that the duration of the PPDU that follows BSYM is greater than or equal to the MinTrigProcTime indicated by the non-AP STA." | RevisedTGax editor to make changes in 11-18/0075r0 under CID 13194 |
| 13195 | 246 | 25 | The term MinTrigProcTime is overloaded in the sentence covering the unassociated STA case. Remove reference to the term from this sentence | Replace the sentence as follows:"An AP transmitting a Trigger frame that contains a User Info field for random access should ensure that a time period of at least 16 ++s passes from the last User Info field with AID12 subfield equal to 2045." | RevisedTGax editor to make changes in 11-18/0075r0 under CID 13195 |
| 13828 | 246 | 16 | "B\_{SYM} is the OFDM symbol of the PPDU that contains either the last bit of SCH when BCC is ..."SCH should be listed in clause 3.4. | As in the comment. | RejectedDiscussion: SCH is defined in the same paragraph where it is used, and SCH is not the first letters of three words. |
| 13971 | 246 | 9 | Adding MAC level padding to Trigger frames unnecessarily increases the overhead and reduces the efficiency of UL MU operation. | Delete section 27.5.3.2.2. Or at least add to P246L15: "Non-AP HE STAs should set the Trigger Frame MAC Padding Duration subfield in the HE MAC Capabilities Information field of the HE Capabilities element to 0 to minimize the Trigger Frame overhead." | RejectedDiscussion: the group believe that SIFS after the PPDU which carries Trigger frame may not be enough for a STA to prepare the UL MU transmission. In some scenario, MAC padding is the only method to provide the STA additional time for preparing the UL MU transmission.  |

**27.5.3.2.2 Padding for Trigger frame or frame containing UMRS Control field**

***TGax editor: make changes in subclause 27.5.3.2.2 as follows:***

(#7812, #9896, #4816)An AP transmitting a PPDU that contains a Trigger frame or frame containing a UMRS Control field shall ensure that the (#Ed)duration of the PPDU that follows *BSYM* is greater(#6666) than or equal to the time indicated by the non-AP STA in the Trigger Frame MAC Padding Duration subfield in the HE MAC Capabilities Information field of the HE Capabilities element that it transmits.(#10167, #4815) *BSYM* is the OFDM symbol of the PPDU that contains either the last bit of *SCH* when BCC is used to encode the PSDU or the last coded bit of the LDPC codeword that encodes the last bit of *SCH* when LDPC is used to encode the PSDU, where *SCH* is either:

* The User Info field addressed to the STA of the (#7644)last (or only) Trigger frame, or
* The UMRS Control subfield of the last (or only) frame.(#Ed)

(#7041, #7141, #9897)An AP transmitting a Trigger frame that contains at least one User Info field with AID12 subfield equal to 0 for random access shall ensure that the (#Ed)duration of the PPDU that follows AssoUora*BSYM* is greater(#6666) than or equal to at least the largest value amongst Trigger Frame MAC Padding Duration subfields in the HE MAC Capabilities Information fields of the HE Capabilities elements received from all associated STAs. AssoUora*BSYM* is the OFDM symbol of the PPDU that contains either the last bit of *SCH* when BCC is used to encode the PSDU or the last coded bit of the LDPC codeword that encodes the last bit of *SCH* when LDPC is used to encode the PSDU, where *SCH* is the last User Info field with AID12 subfield equal to 0. (#11030, 11312, 11394, 11395)

An AP transmitting a Trigger frame that contains at least one User Info field with AID12 subfield equal to 2045 for random access should ensure that the (#Ed)duration of the PPDU that follows UnAssoUora*BSYM* is greater(#6666) than or equal at least 16 µs. UnAssoUora*BSYM* is the OFDM symbol of the PPDU that contains either the last bit of *SCH* when BCC is used to encode the PSDU or the last coded bit of the LDPC codeword that encodes the last bit of *SCH* when LDPC is used to encode the PSDU, where *SCH* is the last User Info field with AID12 subfield equal to 2045. (#11030, 11312, 11394, 11395)

An HE AP may use any type of padding to satisfy the additional time requirement announced in Trigger Frame MAC Padding Duration subfield by a STA, (#11030, 11312, 11394, 11395) such as using the Padding field in a Trigger frame, post-EOF A-MPDU padding, aggregating other MPDUs in the A-MPDU or the PE field at the end of HE PPDU. An AP that intends to use Padding field in a Trigger frame shall fill the padding field as defined in **9.3.1.23 (Trigger frame format)**.(#11100, 12591)(#9830, #9474)