IEEE P802.11  
Wireless LANs

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| General and Annex G Comment Resolution | | | | |
| Date: 2018-11-06 | | | | |
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|  |  |  |  |  |

Abstract

This document includes resolutions to CIDs

General: 15183, 16081, and 16383

Annex G: 15912, 16075, 16701, 17054, 17055, and 17056

# General Comments

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| **CID** | **Page** | **Line** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 15183 | 3.61 | 61 | Patents | There are negative LOAs covering the 802.11ax standard, meaning companies that have claims to essential patents but unwilling to grant a license widely under reasonable terms. As long as these negative LOAs are present, then companies implementing 802.11ax are at risk. | Address negative LOAs covering 802.11ax by having them amended to accept to license broadly for free, or under reasonable terms | Rejected  The commenter doesn’t point to a technical issue with the draft.  The issues related to patents is not really a TG discussion and the commenter is welcome to raise the issue at the IEEE-SA level (Patcom). The TG doesn’t have the authority to force changes to submitted LOA. |
| 16081 |  |  |  | All the D1.0 comments "resolved" as "REJECTED in the interest of releasing D2.0" or similar (about 500 of them!) were not in fact resolved | Resolve all D1.0 comments that were not resolved | Rejected  Draft D1.0 was published on December 1st 2016. Since then the draft has gone through a number of revisions with many changes to almost all the Clauses.  Comments that were submitted back then are either not applicable now or have been resolved to the satisfaction of the commenters. Commenters are always welcome to re-submit their comments in subsequent letter ballots in case resolutions to their comments are not satisfactory. |
| 16383 | 2.06 | 6 | keywords | "dense deployment" should be added to the keyword lists. It is used in the draft (either literally or in the form of "dense deployments" or "dense network") and this is one of the primary goals of 11ax existence to begin with. | As in comment. | Revised  Agree with the commenter. The word “dense” has been used in at least 4 locations in the draft. Adding the “dense deployment” to the key words reflect a main aspect of 802.11ax and the need for the project as it is stated in the PAR.  ***TGax Editor – Please add “dense deployment” to the list of Keywords*** |

# Annex G Comments

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| **CID** | **Page** | **Line** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 15912 | 677.31 | 31 | G5 | MU-RTS can't be transmitted with HTC | Change the text according to the comment. | Revised  Agree with the commenter. While Trigger frame is a control frame, the use of the Wrapper is prohibited in 11ax.  **TGax Editor: Please do the changes highlighted in the text in this submission (11-18/1852r0)**. |
| 16075 | 677.52 | 52 | G.3 | The production rules are incomplete | Add a definition of "cascading-mu-sequence" | Revised  Agree sith the commenter. Cascade system is added.  **TGax Editor: Please do the changes highlighted in the text in this submission (11-18/1852r0)**. |
| 16701 | 677.17 | 17 | Annex G | Annex G is incomplete. | Add missing seqences or add a statement to the effect that HE sequences are note described. | Revised  Aree with the commenter. Annex G is updated by adding to the attribute Table and adding more HE sequences  **TGax Editor: Please do the changes highlighted in the text in this submission (11-18/1852r0)**. |
| 17054 | 677.15 |  | G.5 | "dl-mu-sequence | ul-mu-sequence | cascading-mu-sequence" An dl-mu-sequence, ul-mu-sequence and cascading-mu-sequence are not defined. | An dl-mu-sequence, ul-mu-sequence and cascading-mu-sequence have to be defined in Annex G.5. | Revised  Agree with the commenter.  The missing sequeces are defined.  **TGax Editor: Please do the changes highlighted in the text in this submission (11-18/1852r0)**. |
| 17055 | 677.15 |  | G.5 | The usage case of the He-mu-sequence is not inclued in the basic sequence. | Include the He-mu-sequence to the basic sequence. | Revised  Agree with the commenter.  The missing sequece is defined.  **TGax Editor: Please do the changes highlighted in** |
| 17056 | 677.15 |  | G.5 | "(Trigger) | (Trigger +a-mpdu + mu-user-respond + a-mpdu-end) 1{Data[+HTC]+QoS+(no-ack | block-ack)+a-mpdu} + a-mpdu-end; [+mu-user-respond other-users];" Syntax of the above formula is not correct. | Fix any syntax error in Annex G. | Revised  Annex G is updated.  **TGax Editor: Please do the changes highlighted in the text in this submission (11-18/1852r0)**. |

***TGax Editor: Please make changes highlighted below to the attribute table***

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| --- | --- |
| *mu-ppdu-end* | This attribute delineates the end of a VHT MU PPDU. See NOTE 3 and NOTE 4. |
| *mu-user-respond* | The preceding frame or A-MPDU is part of a VHT MU PPDU and is addressed to a user from which an immediate response is expected. See NOTE 3 and NOTE 4. |
| *Mu-users-respond* | The preceding frame or A-MPDU is part of a HE MU PPDU |
| *mu-user-not-respond* | The preceding frame or A-MPDU is part of a VHT MU PPDU and is addressed to a user from which no immediate response is expected. See NOTE 3 and NOTE 4. |
| *Mu-users-not-respond* | The preceding frame or A-MPDU is part of a VHT MU PPDU. |

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| (11ah)*non-S1GAP* | Frame is transmitted by a non-AP S1G STA. |
| (11ah)*S1GAP* | Frame is transmitted by an S1G AP. |
| *Basic\_Trig* | A Trigger frame where Trigger Type field indicates Basic Trigger variant |
| *BFRP\_Trig* | A Trigger frame where Trigger Type field indicates BFRP Trigger variant |
| *MU-BAR\_Trig* | A Trigger frame where Trigger Type field indicatesMU-RTS Trigger variant |
| *MU-RTS\_Trig* | A Trigger frame where Trigger Type field indicates MU-RTS Trigger variant |
| *BSRP\_Trig* | A Trigger frame where Trigger Type field indicates BSRP Trigger variant |
| *GCR MU-BAR\_Trig* | A Trigger frame where Trigger Type field indicates GCR MU-BAR Trigger variant |
| *BQRP\_Trig* | A Trigger frame where Trigger Type field indicates BQRP Trigger variant |
| *NFRP\_Trig* | A Trigger frame where Trigger Type field indicates NFRP Trigger variant |

*TGax Editor: Please make changes highlighted below.*

Frame exchange sequences

* HT and VHT and S1G sequences(11ah)

(\* The per-user parts of a VHT/HE MU PPDU that do not require a response \*)

other-users = {ppdu-not-requiring-response-per-user +*mu-user-not-respond*} +*mu-ppdu-end*;

Insert a new subclause as follows:

* HE sequences

ht-txop-sequence = he-nav-protected-sequence |

1{initiator-sequence};

(\* a he-nav-protected-sequence consists of setting the NAV, performing one or more initiator-sequences and then resetting the NAV if time permits \*)

he-nav-protected-sequence = he-nav-set 1 {initiator-sequence} [resync-sequence];

(\* This is the sequence of frames that establish protection using MU-RTS variant of the Trigger Frame \*)

he-nav-set = (**Trigger**[+MU-RTS\_Trig] 1{**CTS**}) |

**(Data**[*+HTC*]+*individual*[+*null*][+*QoS*+*normal-ack*] **Ack)** |

**Data**[*+HTC*]+*individual*[+*QoS*+(*block-ack*)] |

**Data**+*group*[+*null*][+*QoS*] |

( 1{ **Data**[+*HTC*]+*individual*+*QoS*+*implicit-bar*+*a-mpdu*}+*a-mpdu-end*

**BlockAck**

) |

(**BlockAckReq** (**BlockAck|Ack**)) |

(**BlockAck** | **Ack**);

he-dl-mu-sequence = (**BlockAck**+*delayed* [*+mu-users-respond* other-users]**Ack** |

(**BlockAckReq**+*delayed*[*+mu-users-respond* other-users] **Ack**) |

**(Data**[*+HTC*]+*individual*[+*null*][+*QoS+normal-ack*][*+mu-user-respond* other-users] **Ack** | **Ack**);

(\* Trigger frame is sent by the AP to initiate non-AP UL transmission. A PPDU containing a trigger is either a non-A-MPDU trigger frame, or an A-MPDU containing carrying trigger frame \*)

he-ul-mu-sequence = (**Trigger**[+*Basic\_Trig*]) | (**Trigger**[*+Basic\_Trig***]** +*a-mpdu* + *mu-user-respond* + *a-mpdu-end*)

1{**Data**[+*HTC*]+*QoS*+(*no-ack* | *block-ack*)+*a-mpdu*}

+ *a-mpdu-end*;

[+*mu-user-respond* other-users];

he-cascading-sequence = he-dl-mu-sequence + he-ul-mu-sequence

(\* HE beamforming sequence \*)

he-non-trigger-based-sounding = (HE NDP Announcement) (HE NDP) he-su-feedback ;

he-trigger-based-sounding = (HE NDP Announcement) (HE NDP) he-feedback

{(**Trigger**[+*BFRP\_Trig*] he-feedback};

he-bf = (HE NDP Announcement) (HE NDP) he-feedback

{he-feedback (\* singe user \*) | (**Trigger**[+*BFRP\_Trig*] he-feedback};

**References:**