IEEE P802.11
Wireless LANs

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| IEEE 802.11 TGax, MAC Ad hocNov 2015 Dallas TGax MAC Ad hoc Meeting Minutes |
| Date: 2015-11-10 |
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Abstract

TGax, MAC Ad Hoc meeting minutes from the IEEE 802.11 Dallas session, Nov 8th – 13th, 2015.

**IEEE 802.11 Task Group ax, MAC Ad hoc**

**Nov 2015 Bangkok Meeting**

**Dallas, TX**

**November 8th – 13th, 2015**

**Tuesday, Nov 10th, 2015, AM2 TGax MAC Ad hoc Session (10:30-12:30)**

1. **The meeting called to order at 10:30pm by Eric Wong (Apple), the co-chair of the TGax MAC Ad hoc**
	1. About 92 people are in the room at this time.
2. **Announcement**
	1. Agenda doc is 11-15/1382r1 is on the server.
	2. Meeting Protocol: The Chair asked to state name and affiliation when speaking for the first time.
	3. Attendance reminder.
		1. The attendance server: https://imat.ieee.org/
3. **The chair reviewed the mandatory 5 slides of P&P.**
	1. Instructions from the WG Chair. [reviewed~~, did not review~~]
	2. Participants, Patents, and Duty to Inform. [reviewed~~, did not review~~]
	3. Patent Related Links. [reviewed~~, did not review~~]
	4. Call for potentially essential patents.
		1. Chair asked if anyone is aware of potentially essential patents

 [Asked. ~~Did not ask~~]

* + 1. Potentially essential patents

 [None reported. ~~Reported as follows~~]

* 1. Other Guidelines for IEEE WG Meetings. [reviewed~~, did not review~~]
1. **The Chair called for presentations**
	1. No requests for additional presentations were made. Reordering of presentations was requested and accepted
2. **The Chair asked for approval of the agenda**
	1. No objection raised
3. **Presentation of contributions**
	1. **“HE MU Acknowledgment Procedure”**
		1. 15/1278r1, presented by Yongho Seok (Newracom)
		2. Strawpoll 1: Do you agree to add the TGax SFD?
	* 4.2 DL MU operation
	Ack Policy field set to 01 (Trigger based UL MU Ack) has the following normative behavior for an HE STA:
	i) The addressed recipient that receives the trigger information, within a DL MU PPDU returns an immediate Ack/BlockAck response, either individually or as part of an A-MPDU after the PPDU carrying the frame, according to the trigger information carried in the same DL MU PPDU
	ii) The addressed recipient that does receive no valid trigger information takes no action upon the receipt of the frame, except for recording the state (if necessary)
		+ 1. Results: 32 Y/ 0 N / 9 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
	1. **“Ack policy for UL MU Ack transmission”**
		1. 15/1346r2, presented by Kiseon Ryu (LGE)
		2. Note that 15/1346r1 was presented and later the SP1 language taken from 15/1346r2
		3. Strawpoll 1: Do you agree the following to be added to SFD?

Ack Policy field in a frame soliciting an immediate response is set to 00 (Normal Ack or Implicit Block Ack Request ) if the immediate response is carried in SU PPDU, or it is set to 01 (Trigger based UL MU Ack) if the immediate response is carried in MU PPDU.

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| **Bits in QoS Control field** | **Meaning** |
| **Bit 5** | **Bit 6** |
| 0 | 1 | No explicit acknowledgment or PSMP Ack or Trigger based UL MU AckWhen bit 6 of the Frame Control field (see 8.2.4.1.3 (Type and Subtype fields)) is set to 1:…When bit 6 of the Frame Control field (see 8.2.4.1.3 (Type and Subtype fields)) is set to 0:The acknowledgment for a frame indicating PSMP Ack when it appears in a PSMP downlink transmission time (PSMP-DTT) is to be received in a later PSMP uplink transmission time (PSMP-UTT).…If the DL PPDU is HE MU PPDU, the addressed recipient returns an Ack/BA in MU format as an immediate response to a DL MU PPDU.  |

* + - 1. Results: 42 Y/ 0 N / 18 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
		1. Strawpoll 2: The presenter withdrew this SP

~~A STA that is the recipient, within a DL MU PPDU,  of an MPDU that solicits an immediate response with Ack Policy ‘01’ in QoS Control field, shall send the immediate response according to the resource allocation defined by the trigger frame aggregated in the same A-MPDU. If no valid trigger frame is received, then the STA shall not respond~~

* 1. **“A method of transmitting Multi-STA Block ACK”**
		1. 15/1330r0, presented by Jeongki Kim (LG)
		2. Strawpoll 1: Do you agree to add the TGax SFD?

The spec shall allow DL OFDMA transmission of Multi-STA Block ACK (M-BA) frame in response to UL MU PPDUs

* + - 1. Results: 24 Y/ 0 N / 31 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
	1. **“MCS Rules for Acknowledging UL OFDMA”**
		1. 15/1351r0, presented by Liwen Chu (Marvell)
		2. Strawpoll 1: Do you agree to add the following rate/MCS selection rules of DL acknowledgement for UL MU to the SFD?
* When an AP selects rate, MCS, NSS of M-BA or OFDMA BA that acknowledges the UL OFDMA, the AP may ignore the MCS, NSS of UL OFDMA PPDU that elicits the DL acknowledgement.
* The AP shall transmit the M-BA using one of rate, MCS, NSS that all of the acknowledgement receivers support.
	+ - 1. Results: 34 Y/ 1 N / 25 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
	1. **“RTS\*/CTS\* for UL/DL OFDMA Control”**
		1. 15/1265r2, presented by Cheeha Kim (POSTECH)
	2. **“DL MU Transmission Sequence”**
		1. 15/1300r0, presented by Young Hoon Kwon (Newracom)
		2. Strawpoll 1: Do you agree to add to the TG Specification Framework:

4.y.z: When an AP initiates a DL MU transmission soliciting more than one immediate response frames, the DL MU transmission is successful if the AP receives the response frame correctly from at least one STA indicated by any trigger information in the DL MU transmission.

* + - 1. Results: 23 Y/ 0 N / 26 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
	1. **“Fragmentation for MU frames – Follow”**
		1. 15/1318r0, presented by Alfred Asterjadhi (Qualcomm)
		2. Strawpoll 1: Do you support to add to the 11ax SFD:

The 11ax fragmentation negotiation shall allow the following fragmentation types (levels) to be indicated:

* Level 0: No support for fragments
* Level 1: Support for a fragment in a “VHT” single MPDU only
* Level 2: Support for up to one fragment per MSDU in an A-MPDU
* Level 3: Support for multiple fragments of an MSDU per A-MPDU
	+ - 1. Results: 42 Y/ 1 N / 15 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion

**Tuesday, Nov 10th, 2015, PM3 TGax MAC Ad hoc Session (19:30-21:30)**

1. **The meeting called to order at 7:30pm by Eric Wong (Apple), the co-chair of the TGax MAC Ad hoc**
	1. About 69 people are in the room at this time.
2. **Announcement**
	1. Agenda doc is 11-15/1382r1 is on the server.
	2. Meeting Protocol: The Chair asked to state name and affiliation when speaking for the first time.
	3. Attendance reminder.
		1. The attendance server: https://imat.ieee.org/
3. **The chair reviewed the mandatory 5 slides of P&P.**
	1. Instructions from the WG Chair. [reviewed~~, did not review~~]
	2. Participants, Patents, and Duty to Inform. [reviewed~~, did not review~~]
	3. Patent Related Links. [reviewed~~, did not review~~]
	4. Call for potentially essential patents.
		1. Chair asked if anyone is aware of potentially essential patents

 [Asked~~. Did not ask~~]

* + 1. Potentially essential patents

 [None reported~~. Reported as follows~~]

* 1. Other Guidelines for IEEE WG Meetings. [reviewed~~, did not review~~]
1. **The Chair reviewed the progress of the agenda.**
	1. No change and objection to the agenda made
2. **Presentation of contributions**
	1. **“Scheduled Trigger frames – Follow up”**
		1. 15/1319r0, presented by Alfred Asterjadhi (Qualcomm)
		2. Strawpoll 1: Do you support to add to the 11ax SFD:

The TWT Flow Identifier field in the TWT IE included in the Beacon frame specifies the different types of flows allowed during the TWT SP

* + - 1. Results: 34 Y/ 0 N / 19 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
		1. Strawpoll 2: Do you support to add to the SFD:

Multiple TWTs can be indicated in the TWT IE in the Beacon frame by allowing multiple TWT parameter sets in the same TWT IE

* + - 1. Results: 23 Y/ 0 N / 17 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
		1. Strawpoll 3: Do you support to amend the existing text in the 11ax SFD as follows:

The spec shall indicate cascaded sequence of Trigger frames ~~for random access~~ by using a bit in the Trigger frame.

* + - 1. Results: 36 Y/ 0 N / 14 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
	1. **“Trigger Frame Content”**
		1. 15/1344r0, presented by Simone Merlin (Qualcomm)
		2. Strawpoll 1: Do you support to add to the SFD

 The Trigger Frame includes the following subfields:

* Subfields of the Common Info field:
* Length [12 bits]
	+ Value of the L-SIG Length of the UL MU PPDU
	+ A responding STA will copy this value in its L-SIG length field, hence the encoding shall be same as defined for the L-SIG Length of the UL MU PPDU
* Info bits content of the SIG-A of the response UL MU PPDU [# of bits TBD]
	+ May Exclude the bits that may be implicitly already known by all responding STAs, if any TBD
* CP + HE LTF type [TBD # of bits]
* Allowed response type / trigger type [# of bits TBD]
	+ Types TBD
		- 1. Results: 43 Y/ 0 N / 8 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
		1. Strawpoll 2: Do you support to add to the SFD

The Trigger Frame includes the following subfields:

* Subfields of the Per-STA Info field
	+ - * MCS [4 bits]
			* Coding type [# bits TBD]
			* RU allocation information [# bits TBD]
			* SS allocation [# bits TBD]
			* DCM [1 bit]
			* User identifier field [12 bits]
				+ AID for STAs associated with AP; TBD for unassociated STAs
			1. Results: 44 Y/ 0 N / 15 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
		1. Strawpoll 3: Do you support to add to the SFD:
		2. Trigger frame is a new subtype of the control type as indicated in the FC B4 to B7 with the subtype not equal to 6.
			1. Results: 46 Y/ 0 N / 14 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
	1. **“Trigger type specific information”**
		1. 15/1345r1, presented by Kiseon Ryu (LGE)
		2. Strawpoll 1: Do you agree to add to the spec framework document?

The spec shall define optional type-specific Common Info and optional type-specific Per User Info of Trigger frame. The locations of type-specific Common Info and type-specific Per User Info are TBD.

* + - 1. Results: 23 Y/ 0 N / 18 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
	1. **“TA address field in Trigger Frame”**
		1. 15/1389r0, presented by Kaiying Lv (ZTE)
		2. Strawpoll 1: Do you agree to add the following to the SFD?

A trigger frame that addresses STAs in multiple BSSs corresponding to a multiple BSS set shall use a common address TBD in the A2 field

* + - 1. Results: 39 Y/ 1 N / 17 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
	1. **“Reception Status of Frames Transmitted in Random Access RUs”**
		1. 15/1341r1, presented by Tomoko Adachi (Toshiba)
		2. Strawpoll 1 (not pre-motion): Do you think we should leave the possibility of using a TF as a DL response frame in substitution of a M-BA/ACK in UL-OFDMA random access sequence?
			1. Results: 7 Y/ 13 N / 26 A
		3. Strawpoll 2 (not pre-motion): Do you think fairness will be an issue among STAs that transmitted after the same TF-R, when failed STAs increase their CWOs while there are successful STAs not changing their CWOs?
			1. Results: 10 Y/ 3 N / 35 A.
	2. **“Broadcast STAID in HE-SIG-B”**
		1. 15/1352r0, presented by Liwen Chu (Marvell)
		2. Strawpoll 1: Do you agree to add the following to the SFD?

The STAID field that identifies the RU allocation in HE SIG-B for broadcast traffic in DL OFDMA PPDU shall be defined as following:

1, For single BSS AP, the STAID for Broadcast will be 0;

2, For Multiple BSS AP, the STAID for Broadcast to a specific BSS will follow the group addressed AID assignment in the TIM according to the existing Multi-BSSID TIM operation;

3, For Multiple BSS AP, the STAID for Broadcast to all BSSs of the AP will have a special STAID value reserved.

* + - 1. Results: 40 Y/ 1 N / 12 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion
	1. **“Consideration for TDLS transmission in 11ax”**
		1. 15/1355r0, presented by Yingpei Lin (Huawei)
		2. Strawpoll 1: Do you support to change the following words in SFD:
		3. An UL/DL Flag field is present in the HE-SIG-A field of an HE SU PPDU. The UL/DL Flag field indicates whether the frame is UL or DL.
* ~~The value of this field for TDLS is TBD.~~
* The value of this field for TDLS is configured as DL.
	+ Note: The TDLS peer can identify the TDLS frame by To DS and From DS fields in the MAC header of the 11ax MPDU.
		- 1. Results: 40 Y/ 0 N / 9 A: //. Strawpoll achieves >=75% support; will be passed to TGax-Full for a motion

The Chair announced that TGax MAC ad hoc is adjourned.