IEEE P802.11  
Wireless LANs

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| IEEE 802.11 TGax, MAC Ad hoc  Jan 2016 Atlanta TGax MAC Ad hoc Meeting Minutes | | | | |
| Date: 2016-01-18 | | | | |
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Abstract

TGax, MAC Ad Hoc meeting minutes from the IEEE 802.11 Atlanta session, Jan 18th – 21th, 2016.

i0Subcarrier**IEEE 802.11 Task Group ax, MAC Ad hoc**

**Jan 2016 Atlanta Meeting**

**Hyatt Regency, Atlanta, USA**

**Jan 18th – 21th, 2016**

**Monday, Jan 18h, 2016, PM2 TGax MAC Ad hoc Session (4:00-6:00pm)**

1. **The meeting called to order at 4:02pm by Reza Hedayat (Newracom), the co-chair of the TGax MAC Ad hoc**
   1. About 46 people are in the room at this time.
2. **Announcement**
   1. Agenda doc is 11-16/0109r0 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**

Yongho Seok (Newracom) presented 11-16/0015r0 “Explicit Block Ack Request in DL MU PPDU”

SPs deferred to permit presentation of 11-16/0051.

Jian Yu (Huawei) presented 11-0016/51r0, “Response Give Trigger Type”

11-16/0051r0-SP1: Do you agree to add the TGax SFD:

6.2.1 Trigger frame   
A recipient of a MU-BAR frame can transmit other data or management frame in addition to BA/ACK frame if it does not exceed the indicated UL MU duration.

Y30 N0 A26 – strawpoll [pre-motion] passes

11-16/0015r0-SP2: Do you agree to add the TGax SFD:

4.2 DL MU operation  
Except for an implicit Block Ack request, the Block Ack Request frame and the MU-BAR frame are used for soliciting an immediate response carried in SU and MU PPDU, respectively.

Y4 N7 A41 – strawpoll fails

11-16/0015r0-SP3: Do you agree to add the TGax SFD:

4.2 DL MU operation  
PPDU Type (SU or MU) of an immediate response is indicated in the Block Ack Request frame

Y6 N10 A=many – strawpoll fails

11-16/0015r0-SP1: Do you support to add the following to the SFD:

If the trigger frame requests a specific frame type as response, the response to this trigger frame shall contain at least the frame with the required type if the required type is available at the STA side; if the STA has no frame with the required type, the STA should transmit QoS Null frame to AP.

Y38 N0 A19 - strawpoll [pre-motion] passes

Mid session attendee count: **about** **76 people in the room.**

Evgeny Khorov (IITP) presented 11-16/0017r0 “Beacon Collision Avoidance”

11-16/0017r0-SP1: We need a mechanism that allows an HE AP to obtain the beacon timing information of the APs in its two-hop neighborhood. This information can be used for TBTT selection and TBTT adjustment in order to prevent beacon collisions caused by hidden APs in dense deployment scenarios.

Y2

N1

Need more information – many

Xiaofei Wang (Interdigital) presented 11-16/0029r0 “TXOP Truncation Enhancement”

11-16/0029r0-SP0: Do you agree to add the following to the SFD:

6.1 The spec should consider to use Duration settings in CF-End frames to facilitate resetting of NAVs

Y2 N21 A-uncounted

1. The Chair [recessed~~, did not recess~~] the MAC ad hoc session at 6:04 pm.

// recess = short break, adjournment = long break

**Tuesday, Jan 19th, 2016, AM2 TGax MAC Ad hoc Session (10:30am-12:30pm)**

1. **The meeting was called to order at 10:32pm by Reza Hedayat (Newracom), the co-chair of the TGax MAC Ad hoc**
   1. About 75 people are in the room at this time.
2. **Announcement**
   1. Meeting Protocol: The Chair asked to state name and affiliation when speaking for the first time.
   2. 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 presentation order**
   1. Reordering of presentations was requested and accepted
2. **The Chair asked for approval of the agenda**
   1. No objection raised
3. **Presentation of contributions**

Initial attendee count: **about** **75 people in the room.**

Evgeny Khorov (IITP) presented 11-16/0018r2, “TDMA for Eliminating Hidden Station Effect in Dense Networks”

11-16/0018r2-SP1: Do you agree to add the following text in SFD:

x.y.z The spec shall include a mechanism that allows an HE AP to negotiate periodic time intervals for its BSS in advance. During these time intervals, an OBSS or a subset of STAs in the OBSS should not start their transmissions

Y7 N16 A-uncounted. Strawpoll fails

Xiaofei Wang (Interdigital), 11-0016/28r0 presented “Follow Up for Multi-STA BA for SU Transmissions”

11-0016/28r0-SP2: Do you agree that:

x.y.z The spec should allow the use of Multi-STA BA frame to acknowledge UL SU transmissions

Y11 N5 A41. Strawpoll fails

11-0016/28r0-SP1: Do you agree that: 11ax should allow the use of Multi-STA BA frame to acknowledge UL SU transmissions in PSMP sequences

Y10 N12 A-uncounted Strawpoll fails.

Sean Coffey (Realtek) presented 11-0016/0102r0, “High Efficiency Medium Access via Rosters”

No strawpolls

Mid session attendee count: **about** **82 people in the room.**

Geonjung Ko (WILUS) presented 11-16/0042r1, “BSS Color Settings for a Multiple BSSID Set”

Strawpolls deferred

1. The Chair [recessed~~, did not recess~~] the MAC ad hoc session at 12:31 pm.

**Tuesday, Jan 19th, 2016, PM1 TGax MAC Ad hoc Session (1:30pm-3:30pm)**

1. **The meeting was called to order at 10:32pm by Reza Hedayat (Newracom), the co-chair of the TGax MAC Ad hoc**
   1. About 75 people are in the room at this time.
2. **Announcement**
   1. Meeting Protocol: The Chair asked to state name and affiliation when speaking for the first time.
   2. 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 presentation order**
   1. Reordering of presentations was requested and accepted
2. **The Chair asked for approval of the agenda**
   1. No objection raised
3. **Presentation of contributions**

Initial attendee count: **about** **69 people in the room.**

Liwen Chu (Marvell) presented 11-16/0068r0 “BSS Color and Multiple BSSID”

11-16/0042r1-SP2[modified]: Do you agree to add the following text into 11ax SFD?

5.y.z AP and STA in one BSS of a Multiple BSSID set shall consider a frame from another BSS of the same Multiple BSSID set as an intra-BSS frame (signaling for a Multiple BSSID set is TBD).

Y31 N0 A19 Strawpoll [Pre-motion] passes

11-16/0068r0-SP[modified]: Do you agree to add the following text into the SFD:

A same BSS Color shall be used for the virtual APs which are defined by TBD Multiple BSSID signaling

Y51 N0 A3 Strawpoll [Pre-motion] passes

Alfred Asterjadhi (Qualcomm) presented 11-16/0050r0 “Fragmentation for MU frames-Follow up on acks”

11-16/0050r0SP1: So you support to add to the SFD:

* 11ax STAs shall use the baseline (de-)fragmentation for signaling 11ax fragmentation within an A-MPDU
  + The SN identifies the MSDU/MMPDU, and the FN identifies the fragment of an MSDU/MMPDU

Y45 N1 A5 Strawpoll [Pre-motion] passes

11-16/0050r0SP2:

* **Do you support to add to the SFD:**
  + Under 11ax fragmentation, the following acknowledgement rules apply:
    - Fragmentation – Level I
      * Recipient shall respond with an Ack to a fragment carried in a “VHT” single MPDU soliciting immediate response
    - Fragmentation – Level II
      * Recipient shall respond with:
        + Ack frame to a fragment carried in a “VHT” single MPDU soliciting immediate response
        + C-BA frame to an A-MPDU soliciting immediate response

Each bit in BlockAck Bitmap indicates successful reception of the carried fragment or of the full MSDU

Y45 N1 A8 Strawpoll [Pre-motion] passes

11-16/0050r0SP3:

* **Do you support to add to the SFD:**
  + Under 11ax fragmentation, the following acknowledgement rules apply:
    - Fragmentation – Level III
      * Recipient shall respond with:
        + Ack frame to a fragment carried in a “VHT” single MPDU soliciting immediate response
        + C-BA frame to an A-MPDU that does not carry fragments and soliciting immediate response
        + “Dedicated” C-BA frame to an A-MPDU carrying fragments and soliciting immediate response

Each bit in BlockAck Bitmap indicates successful reception of each of the carried fragments

The max number of fragments for which the BA frame signals the receive status is contained in a nonzero value of the FN subfield of the BA frame

* + - * Maximum number of fragments per MSDU in the eliciting A-MPDU transmitted by the originator shall be 4

Y42 N1 A9 Strawpoll [Pre-motion] passes

Liwen Chu (Marvell) presented 11-16/0069r0 “Multi-TID A-MPDU in MU Transmission”

11-16/0069r0-SP1: Do you agree to add the following text to the SFD 4.1 General?

MPDUs from multiple TIDs that ask for Ack and/or BA acknowledgement and management frame that asks for Ack acknowledgement may be aggregated in one A-MPDU of MU transmission

Y38 N0 A5 Strawpoll [Pre-motion] passes

11-16/0069r0-SP2: Do you agree to add the following text to the SFD subclause 4.2 DL MU Operation:

The spec shall allow UL MU transmission of Multi-STA Block ACK frame in response to multi-TID A-MPDU of DL MU transmission. The value of the AID field in M-BA is TBD

Y45 N0 A7 [Pre-motion] passes

Initial attendee count: **about** **87 people in the room.**

Jinsoo Ahn (Yonsei University) presented 11-16/0087r1, “NAV cancellation issues on MU protection”

11-16/0087r1-SP2: Do you agree to add to the TG Specification Frame work document?

* AP may transmit CF-END frame after Trigger timer (TBD) expires following MU RTS Frame if AP cannot detect the (Simultaneous) CTS frame(s).
* CF-END frame may be transmitted after Trigger timer (TBD) expires following Trigger frame if AP cannot detect the UL response(s).

Y5 N15 A-many. Strawpoll fails.

The MAC ad hoc included one presentation originally intended for the Spatial Reuse ad hoc.

The chair Reza Hedayat proposed to transfer the chair role to Brian Hart (Cisco Systems). No objection was received.

Reza Hedayat (Newracom) presented 11-16/0060r1, “Recipient-aware Spatial Reuse”

11-16/0060r1-SP:

* Do you agree that the following text in 11ax SFD to be modified?

**5.1: Features for operation in dense environments**

The specification to consider a procedure that may revise the NAV depending on TBD conditions at the recipient of the ongoing OBSS frame.

* A STA that receives an inter-BSS frame with RSSI more than OBSS PD threshold and receives the response frame less than a TBD threshold (e.g. OBSS PD) may set back the NAV to the value before receiving the inter-BSS frame. Above rule does not apply if the inter-BSS frame is a Trigger frame.

Y10 N8 A-uncounted – strawpoll fails

1. The Chair [adjourned~~, adjourned~~] the MAC ad hoc session at 3:34 pm.