IEEE P802.11  
Wireless LANs

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| IEEE 802.11  TGax Teleconference Minutes from August to September 2019 | | | | |
| Date: 2019-8-14 | | | | |
| Author(s): | | | | |
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Abstract

This document contains the TGax meeting minutes from the TGax teleconferences scheduled on August 1st, 8th, 15th, 22nd, 29th, and September 5th, 2019.

Revision History:

* R0: Created including the minutes from TGax teleconferences on August 1st, 8th, 2019.

**Thursday, August 1st, 2019, TGax Teleconference (10:30 - 13:30 ET)**

1. **The meeting called to order at 10:30 AM (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax chairperson and secretary.
   2. Agenda document 19/1366r1 on the server.
2. **Agenda Setting**
   1. Proposed agenda for the 1st Teleconference on August 1st, 2019.
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Attendance
      4. Announcement
      5. Comment Resolution Submissions
      6. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
      1. **The agenda for the TGax teleconference on August 1st, 2019 is approved.**
3. **IEEE 802 and 802.11 IPR policy and procedure**
   1. Patent Policy:
      1. Participants have a duty to inform the IEEE - done.
      2. Ways to inform IEEE: - done
         * Cause an LOA to be submitted to the IEEE-SA (patcom@ieee.org); or
         * Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
         * Speak up now and respond to this Call for Potentially Essential Patents
         * If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair
      3. Chair asked if anyone in this meeting is aware of any potentially essential patents.
         1. **No potentially essential patent reported.**
      4. Other guidelines for IEEE WG meetings – done
      5. Patent-related information – done
      6. Participation in IEEE 802 Meetings – done
4. **Announcements**
   1. Chair asked people to announce name and the affiliation when addressing the group for the first time during a meeting slot.
   2. Attendance: <https://imat.ieee.org/attendance>
   3. Chair asked people to put the cellphone mute of switch off.
5. **Submissions**
   1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1155-00-00ax-lb-238-miscellaneous-comment-resolution.docx> - Osama Aboul-Magd
   2. <https://mentor.ieee.org/802.11/dcn/19/11-19-1259-00-00ax-lb-238-annex-g-comment-resolution.docx> - Osama Aboul-Magd
   3. <https://mentor.ieee.org/802.11/dcn/19/11-19-1035-01-00ax-11ax-d4-0-comment-resolution-26-6-4-2-26-6-4-4.docx> - Liwen Chu
   4. <https://mentor.ieee.org/802.11/dcn/19/11-19-1023-04-00ax-11ax-d4-0-comment-resolution-21-6-4-1.docx> - Liwen Chu
   5. <https://mentor.ieee.org/802.11/dcn/19/11-19-1236-00-00ax-comment-resolution-on-mibs-for-lb238.docx> - Edward Au
   6. <https://mentor.ieee.org/802.11/dcn/19/11-19-1243-00-00ax-comment-resolution-on-pics-for-lb238.docx> - Edward Au
   7. <https://mentor.ieee.org/802.11/dcn/19/11-19-1377-00-00ax-cr-for-phy-introduction.docx> - Po-Kai Hua
   8. <https://mentor.ieee.org/802.11/dcn/19/11-19-0619-02-00ax-proposed-resolutions-to-select-comments-on-d4-0.docx> - Srinivas Kandala
   9. <https://mentor.ieee.org/802.11/dcn/19/11-19-1275-00-00ax-proposed-resolution-to-tgax-d4-0-cr-20268.docx> - Srinivas Kandala
6. **Presentation**
   1. **Osama Aboul-Magd (Huawei Technologies) presented “LB-238 Miscellaneous Comment Resolution,” based on the submission 11-19-1155-01.**
      1. Summary
         1. Resolutions for the comments related to the IEEE 802.11ax D4.0 with following CIDs are proposed.
            1. CIDs: 20602, 20735, 20742, 20751, 20756, 20762, 21012, 21027 and 21037.
      2. Discussion
         1. CID 20735: The commenter mentioned that the term “pre-correction” is not appropriate. It should be “correction.” 🡪 Need an advice from PHY experts.
         2. CID 20742: Group discussed this CID and recognized that we need an advice from PHY experts. This CID is open for now.
         3. CID 20751: A member pointed out contradiction of subclauses 28.3.3.9.2 and 28.3.3.1.2. We need an advice from the PHY experts also for this CID.
         4. CID 20756: Minor edit was suggested.
         5. CID 20762: Although some member support the proposed changes, those changes are on the PHY section and need an advice from PHY experts. 🡪 Osama to start an email discussion.
         6. CID 21012: Osama asked someone to take over this CID.
         7. Other CIDs are okay now.
      3. **Straw Poll: Do you accept the resolutions for CIDs 20602, 21027 and 21037 in 11-19-1155-01?**
         1. **Result: Accepted with no objection.**
      4. Next Step: Osama to start email discussion and update the document incorporating the results of discussions.
   2. **Liwen Chu (Marvell Semiconductor) presented “11ax D4.0 Comment Resolution 26.6.4.2 26.6.4.4,” based on the submission 11-19-1035-02.**
      1. Summary
         1. Resolutions for the comments on subclauses 26.6.4.2 (Ack-enabled A-MPDU operation) and 26.6.4.4 (Ack-enabled multi-TID A-MPDU operation) related to the IEEE 802.11ax D4.0 with following CIDs are proposed.
            1. CIDs: 20428, 20825, 20826, 20196, 20330, 20393, 20394, 20427, 21066, 21067, 21137, 21607, 20776.
         2. Deferred CIDs 20428, 20825, 20394, 21067, 21607 and 20776 are revisited.
      2. Discussion
         1. CID 20428: The group discussed the NOTE in 26.6.4.2 (Ack-enabled A-MPDU operation).
         2. CID 20394: The resolution is updated (from “Revised” to “Reject”). A member asked for the technical reason for the rejection. A member will help to craft the reason.
         3. CID 21067 & 21607: In an ack-enabled multi-TID A-MPDU, a frame in an A-MPDU subframe with EoF field equal to 1 will always solicit Ack. When a STA that transmitted an ack-enabled multi-TID A-MPDU with two aggregated frames to solicit Ack receives a solicited Ack from the recipient, the transmitter can’t figure out which frame is correctly received by the recipient.
      3. **Straw Poll: Do you accept the resolutions for CIDs 20428, 20825, 21067, 21607 and 20776 in 11-19-1035-02?**
         1. **Result: Accepted with no objection.**
         2. **CID 20394: The resolution is okay. The reason for the rejection to be added.**
   3. **Po-Kai Huang (Intel) presented “11ax D4.2 MAC Comment Resolution for PHY Introduction,” based on the submission 11-19-1377-00.**
      1. Summary
         1. Resolutions for the comments related to the IEEE 802.11ax D4.3 with following CIDs are proposed.
            1. CIDs: 20087, 20088, 20166, 21001.
      2. Discussion
         1. CID 20166: The group discussed the difference between a 20 MHz-only STA and 20 MHz operating STA. The group also discussed the related text in this document.
         2. All CIDs are okay now.
      3. **Straw Poll: Do you accept the resolutions for CIDs 20087, 2008, 20166 and 21001 in 11-19-1377-00?**
         1. **Result: Accepted with no objection.**
   4. **Srinivas Kandala (Samsung) presented “Proposed Resolutions to select comments on D4.0,” based on the submission 11-19-0619-03.**
      1. Summary
         1. Resolutions for the comments related to the IEEE 802.11ax D4.0 with following CIDs are proposed.
            1. CIDs: 20015, 20854, 20109, 20110, 20111, 20274, 20426, 20430, 20610, 20658, 20812, 20815, 20909, 20920, 20981, 21466, and 20957.
      2. Discussion
         1. CID 20015: There was a comment that the text should be more specific to avoid confusion. 🡪 Related text was updated.
         2. CID 20109:
            1. The group discussed the special value 0 of TXOP Duration RTS Threshold field was discussed. 🡪 To double check with another member.
            2. The group also discussed what management frames will be allowed for this case.
         3. CID 20426: A member mentioned this comment should be rejected. The group agree with his opinion.
         4. CID 20658: The group discussed details of the comment saying “A non-AP STA that transmits the MPDU in an HE TB PPDU is exempt from requirements related to dot11RTSThreshold and …”
      3. Time is up!
7. **AoB**
   1. No other business for today.
8. **Adjourn**
   1. TGax teleconference adjourned @ 13:30 (ET).
9. **List of Attendees**

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| --- | --- |
| Name | Affiliation |
| Osama Aboul-Magd | Huawei Technologies |
| Alfred Asterjadhi | Qualcomm |
| Edward Au | Huawei Technologies |
| Liwen Chu | Marvell Semiconductor |
| Po-Kai Huang | Intel |
| Yasuhiko Inoue | NTT |
| Srinivas Kandala | Samsung |
| Zhou Lan | Broadcom |
| Mark Rison | Samsung |
| Pascal Vigar | Canon Research |
| Xiaofei Wang | InterDigital Communications |
| Rui Yang | InterDigital Communications |

**Thursday, August 8th, 2019, the 2nd TGax Teleconference (19:30 - 22:30 ET)**

1. **The meeting called to order at 19:30 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax chairperson and secretary.
   2. Agenda document 19/1366r1 on the server.
2. **Agenda Setting**
   1. Proposed agenda for the 1st Teleconference on August 1st, 2019.
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Attendance
      4. Announcement
      5. Comment Resolution Submissions
      6. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
      1. **The agenda for the TGax teleconference on August 1st, 2019 is approved.**
3. **IEEE 802 and 802.11 IPR policy and procedure**
   1. Patent Policy:
      1. Participants have a duty to inform the IEEE - done.
      2. Ways to inform IEEE: - done
         * Cause an LOA to be submitted to the IEEE-SA (patcom@ieee.org); or
         * Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
         * Speak up now and respond to this Call for Potentially Essential Patents
         * If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair
      3. Chair asked if anyone in this meeting is aware of any potentially essential patents.
         1. **No potentially essential patent reported.**
      4. Other guidelines for IEEE WG meetings – done
      5. Patent-related information – done
      6. Participation in IEEE 802 Meetings – done
4. **Announcements**
   1. Chair asked people to announce name and the affiliation when addressing the group for the first time during a meeting slot.
   2. Attendance: <https://imat.ieee.org/attendance>
   3. Chair asked people to put the cellphone mute of switch off.
5. **Submissions**
   1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1155-00-00ax-lb-238-miscellaneous-comment-resolution.docx> - Osama Aboul-Magd
   2. <https://mentor.ieee.org/802.11/dcn/19/11-19-1259-00-00ax-lb-238-annex-g-comment-resolution.docx> - Osama Aboul-Magd
   3. <https://mentor.ieee.org/802.11/dcn/19/11-19-1035-01-00ax-11ax-d4-0-comment-resolution-26-6-4-2-26-6-4-4.docx> - Liwen Chu
   4. <https://mentor.ieee.org/802.11/dcn/19/11-19-1023-04-00ax-11ax-d4-0-comment-resolution-21-6-4-1.docx> - Liwen Chu
   5. <https://mentor.ieee.org/802.11/dcn/19/11-19-1236-00-00ax-comment-resolution-on-mibs-for-lb238.docx> - Edward Au
   6. <https://mentor.ieee.org/802.11/dcn/19/11-19-1243-00-00ax-comment-resolution-on-pics-for-lb238.docx> - Edward Au
   7. <https://mentor.ieee.org/802.11/dcn/19/11-19-1377-00-00ax-cr-for-phy-introduction.docx> - Po-Kai Hua
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   9. <https://mentor.ieee.org/802.11/dcn/19/11-19-1275-00-00ax-proposed-resolution-to-tgax-d4-0-cr-20268.docx> - Srinivas Kandala
6. **Presentation**
   1. **Osama Aboul-Magd (Huawei Technologies) presented “LB-238 Miscellaneous Comment Resolution,” based on the submission 11-19-1155-01.**
      1. Summary
         1. Resolutions for the comments related to the IEEE 802.11ax D4.0 with following CIDs are proposed.
            1. Remaining CIDs: 20735, 20742, 20751, 20756, 20762, and 21012.
      2. Discussion
         1. CID 20735: A PHY expert mentioned that the term “pre-correction” is appropriate word to use. 🡪 The comment is rejected.
         2. CID 20742 & 20751: Two comments are transferred to a PHY expert (Youhan Kim@Qualcomm).
         3. CID 20762: need to find all the occurances and make the proposed changes. Change “or” to “and”.
         4. CID 21012: The group check the ambiguity requested by a PHY expert and concluded that there is no ambiguity.
      3. **Straw Poll: Do you accept the resolutions for CIDs 20735 and 21012 in 11-19-1155-01?**
         1. **Result: Accepted with no objection.**
      4. Next Step: Osama to update the document.
   2. **Edward Au (Huawei Technologies) presented “Comment resolution on MIBs for LB238,” based on the submission 11-19-1236-00.**
      1. Summary
         1. Resolutions for the comments related to the MIB defined in the IEEE 802.11ax D4.2 with following CIDs are proposed.
            1. Remaining CIDs: 20550, 20667, 21306, 20551, 20978, 20503, and 20502.
      2. Discussion
         1. CID 20978: The group discussed this comment and concluded that the comment is not correct. The comment will be rejected. The reason for the rejection is to be prepared.
         2. CID 20649 & 20502: A participant asked for deferral of these two CIDs.
      3. **Straw Poll: Do you accept the resolutions for CIDs 20550, 20667, 21306, 20551 and 20503 in 11-19-1236-00?**
         1. **Result: Accepted with no objection.**
      4. Next Step: Edward to work on the remaining CIDs.
   3. **Edward Au (Huawei Technologies) presented “Comment resolution on PICs for LB238,” based on the submission 11-19-1243-00.**
      1. Summary
         1. Resolutions for the comments related to the MIB defined in the IEEE 802.11ax D4.2 with following CIDs are proposed.
            1. Remaining CIDs: 20100, 21538, and 20114.
      2. Discussion
         1. CID 21538:
         2. CID 20114:
      3. **Straw Poll: Do you accept the resolutions for CIDs 20100 in 11-19-1243-00?**
         1. **Result: Accepted with no objection.**
      4. Next Step: Edward to work on the remaining CIDs.
   4. **Po-Kai Huang (Intel) presented “11ax D4.2 RA Setting for Response to Trigger frame,” based on the submission 11-19-1263-02.**
      1. Summary
         1. This submission proposes resolutions for issues related to RA setting for response to Trigger frame.
      2. Discussion
         1. No discussion.
      3. Straw Poll – No straw poll.
      4. Next Step: We need to approve this during the next face-to-face meeting.h.
   5. **Osama Aboul-Magd (Huawei Technologies) presented “LB 238 Annex G Comment Resolution,” based on the submission 11-19-1259-00.**
      1. Summary
         1. Resolutions for the comments on Annex G of the IEEE 802.11ax D4.0 with following CIDs are proposed.
            1. Remaining CIDs: 20092, 20681, 20682, 20906, 21338, 21339, 21340, 21341.
      2. Discussion
         1. CID 20092: Need to check the no acknowledgment case of the HE Trigger-Based NDP sequence? 🡪 Okay.
         2. CID 21338: Leave it open for now.
      3. **Straw Poll: Do you accept the resolutions for CIDs 20092 and 21012, 20681, 20682, 20906, 21339, 21340, and 21341 in 11-19-1259-00?**
         1. **Result: Accepted with no objection.**
      4. Next Step: Osama to update the open CID.
   6. **Liwen Chu (Marvell Semiconductor) presented “11ax D4.0 Comment Resolution 26.6.4.2 26.6.4.4,” based on the submission 11-19-1035-04.**
      1. Summary
         1. This is an update from the 19/1035r1 presented last week.
            1. Remaining CIDs: 20394.
         2. Liwen added one sentence to the resolution as the reason for the rejection.
      2. Discussion
         1. The updated resolution looks okay.
      3. **Straw Poll: Do you accept the resolutions for CIDs 20394 in 11-19-1035-04?**
         1. **Result: Accepted with no objection.**
      4. Next Step: All CIDs in 19/1035 are ready for TG motion.
   7. **Liwen Chu (Marvell Semiconductor) presented “11ax D4.0 Comment Resolution 21.6.4.1,” based on the submission 11-19-1023-05.**
      1. Summary
         1. This is an update from the previous version discussed during July meeting.
            1. Remaining CIDs: 20391, 20418, 21200, 21203, 21336 and 21337.
         2. Liwen added one sentence to the resolution as the reason for the rejection.
      2. Discussion
         1. CID 20391:
            1. The group discussed the assumption for the Ack-enabled A-MPDU.
            2. The group agreed to use the same terminology throughput the document.
         2. CID 21203:
            1. A member suggested inclusion of management frame into the proposed text. A volunteer to provide a text.
      3. **Straw Poll: Do you accept the resolutions for CIDs 20391 in 11-19-1023-05?**
         1. **Result: Accepted with no objection.**
      4. Next Step: Liwen to work with Alfred on CID 20391. Liwen to prepare for a separate submission for the other CIDs.
7. **AoB**
   1. No other business for today.
8. **Adjourn**
   1. TGax teleconference adjourned @ 21:30 (ET).
9. **List of Attendees**

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| --- | --- |
| Name | Affiliation |
| Osama Aboul-Magd | Huawei Technologies |
| Tomoko Adachi | Toshiba |
| Alfred Asterjadhi | Qualcomm |
| Edward Au | Huawei Technologies |
| Liwen Chu | Marvell Semiconductor |
| Po-Kai Huang | Intel |
| Yasuhiko Inoue | NTT |
| Jeongki Kim | LG Electronics |
| Youhan Kim | Qualcomm |
| Gaurav Patwardhan | Hewlett Packard Enterprise |
| Al Petrick | InterDigital Communications |
| Bo Sun | ZTE |
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