IEEE P802.11  
Wireless LANs

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| Minutes from TGax Teleconferences from May to June 2017 | | | | |
| Date: 2017-5-19 | | | | |
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Abstract

This document contains minutes of TGax teleconference from May to June 2017.

Rev. 0: Minutes from TGax teleconference on May 18th and May 25th, 2017 included.

Rev.1: Included the minutes from TGax teleconference on June 1st, 2017.

Rev. 2: Included the minutes from TGax teleconference on June 15th, 2017.

# Teleconference on Thursday, May 18th, 2017, 20:00 – 22:00 (ET)

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 20:05 (ET).**
   1. Introduction of the chairperson and secretary.
2. **Agenda Setting**
   1. Proposed Agenda
      1. Call the meeting to order
      2. IEEE 802 and 802.11 IPR Policy and Procedure
      3. Attendance (Please send an e.mail to Yasuhiko Inoue (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama Aboul-Magd (osama.aboulmagd@huawei.com))
      4. Announcements
      5. Presentation
         1. 11-17-0702-02 “Proposed Resolution to CID 9574,” Kaiying Lv (ZTE)
         2. 11-17-0711-03 “Comment Resolution on PHY-CCA.indication,” Rojan Chitrakar (Panasonic)
      6. AOB
      7. Adjourn
   2. Approval of the agenda
      1. Chair asked if there is any item to add to the agenda. 🡪 No item to add to the agenda.
      2. Chair asked if there is any objection to approve the agenda. 🡪 No objection.
      3. The agenda was approved.
3. **IEEE 802 and 802.11 IPR Policy and Procedure**
   1. Chair mentioned that we are operating under the IEEE 802 and 802.11 Policy and Procedure.
   2. Relevant documents
      1. IEEE Patent Policy - <http://standards.ieee.org/board/pat/pat-slideset.ppt>
      2. Patent FAQ - <http://standards.ieee.org/board/pat/faq.pdf>
      3. LoA Form - <http://standards.ieee.org/board/pat/loa.pdf>
      4. Affiliation FAQ - <http://standards.ieee.org/faqs/affiliationFAQ.html>
      5. Anti-Trust FAQ - <http://standards.ieee.org/resources/antitrust-guidelines.pdf>
      6. Ethics - <http://www.ieee.org/portal/cms_docs/about/CoE_poster.pdf>
      7. IEEE 802.11 Working Group Operartions Manual - <https://mentor.ieee.org/802.11/dcn/14/11-14-0629-18-0000-802-11-operations-manual.docx>
   3. Chair asked if there is any potentially essential patent that people are aware of.
      1. No potentially essential patent reported.
4. **Attendance**
   1. Chair asked the attendees to send an email to Yasu ([inoue.yasuhiko@lab.ntt.co.jp](mailto:inoue.yasuhiko@lab.ntt.co.jp)) and/or Osama ([osama.aboulmagd@huawei.com](mailto:osama.aboulmagd@huawei.com)) to record attendance.
5. **Announcement**
   1. Chair asked people to put cellphone on mute if not speaking.
   2. Chair asked people to state name and affiliation when addressing for the first time during the session.
   3. Chair mentioned that he is still looking for volunteers and asked people to send him an email if interested in this activity.
6. **Presentations**
   * 1. **Kaiying Lv (ZTE) presented “Proposed Resolution to CID 9574,” based on the submission 11-17-0707-02.**
        1. Summary
           1. The submission contains a proposed resolution for CID 9574.
           2. The proposed resolution is “Rejected.” Since the AP can transmit any frame during the TWT SP to the STA, there is no need to define new mechanisms for this purpose.
        2. Discussion – No discussion.
        3. Next Step
           1. Chair mentioned that there will be enough time to review this document.
     2. **Rojan Chitrakar (Panasonic) presented “Comment Resolution on PHY-CCA.indication,” based on the submission 11-17-0711-03.**
        1. Summary
           1. Resolutions for 6 CIDs related to PHY-CCA.indication are proposed.

CIDs: 4718, 4719, 6938, 6939, 7296, and 7297.

* + - 1. Discussion
         1. CID 4718: Some members discussed the NOTE below the Table 8-5. A member is concerned using different definition for the same term.
         2. CID 4719: A member commented that the resolution for this CID should be changed to “Revised” while keeping current reason for the resolution.
         3. CID 6938: No discussion.
         4. CID 6939: No discussion.
         5. CID 7296: A member suggested change to the current resolution – it should be REVISED since modification is made bt him.
         6. CID 7297: No discussion.
      2. Next Step
         1. Chair asked people having suggestions to contact Rojan.

1. **AOB**
   1. None.
2. **Adjournment**
   1. Meeting adjourned at 20:47 (ET).
3. **List of Attendees – following people were on the call.**

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|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Tomoko Adachi | Toshiba |
| 3 | Woojin Ahn | WILUS Institute |
| 4 | Yusuke Asai | NTT |
| 5 | Rojan Chitrakar | Panasonic |
| 6 | Yasuhiko Inoue | NTT |
| 7 | Junichi Iwatani | NTT |
| 8 | Jeongki Kim | LG Electronics |
| 9 | Jarkko Kneckt | Apple |
| 10 | Jae Seung Lee | ETRI |
| 11 | Guoqing Li | Apple |
| 12 | Kaiying Lv | ZTE |
| 13 | Jing Ma | NICT |
| 14 | Narendar Madhavan | Toshiba |
| 15 | Saishankar Nandagopalan | Cypress |
| 16 | Abhishek Patil | Qualcomm |
| 17 | Albert Petrick | InterDigital |
| 18 | Kiseon Ryu | LG Electronics |
| 19 | Yongho Seok | Newracom |
| 20 | Shoko Shinohara | NTT |
| 21 | Xiaofei Wang | InterDigital |
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# Teleconference on Thursday, May 25th, 2017, 8:00 – 10:00 (ET)

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 10:05 (ET).**
   1. Introduction of the chairperson and secretary.
2. **Agenda Setting**
   1. Proposed Agenda
      1. Call the meeting to order
      2. IEEE 802 and 802.11 IPR Policy and Procedure
      3. Attendance (Please send an e.mail to Yasuhiko Inoue (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama Aboul-Magd (osama.aboulmagd@huawei.com))
      4. Announcements
      5. Presentation
         1. 11-17-0088-03, “CR on 10.22.2.8 TXOP limits,” Woojin Ahn (Wilus Institute)
         2. 11-17-0553-02, “LB225 11ax D1.0 Comment Resolution 27.10.4 Part 1,” Liwen Chu (Marvell)
         3. 11-17-0688-01, “LB225 11ax D1.0 Comment Resolution 27.10.4 – Part II,” Chittabrata Ghosh (Intel)
      6. AOB
      7. Adjourn
   2. Approval of the agenda
      1. Chair asked if there is any item to add to the agenda. 🡪 No item to add to the agenda.
      2. Chair asked if there is any objection to approve the agenda. 🡪 No objection.
      3. The agenda was approved.
3. **IEEE 802 and 802.11 IPR Policy and Procedure**
   1. Chair mentioned that we are operating under the IEEE 802 and 802.11 Policy and Procedure.
   2. Relevant documents
      1. IEEE Patent Policy - <http://standards.ieee.org/board/pat/pat-slideset.ppt>
      2. Patent FAQ - <http://standards.ieee.org/board/pat/faq.pdf>
      3. LoA Form - <http://standards.ieee.org/board/pat/loa.pdf>
      4. Affiliation FAQ - <http://standards.ieee.org/faqs/affiliationFAQ.html>
      5. Anti-Trust FAQ - <http://standards.ieee.org/resources/antitrust-guidelines.pdf>
      6. Ethics - <http://www.ieee.org/portal/cms_docs/about/CoE_poster.pdf>
      7. IEEE 802.11 Working Group Operartions Manual - <https://mentor.ieee.org/802.11/dcn/14/11-14-0629-18-0000-802-11-operations-manual.docx>
   3. Chair asked if there is any potentially essential patent that people are aware of.
      1. No potentially essential patent reported.
4. **Attendance**
   1. Chair asked the attendees to send an email to Yasu ([inoue.yasuhiko@lab.ntt.co.jp](mailto:inoue.yasuhiko@lab.ntt.co.jp)) and/or Osama ([osama.aboulmagd@huawei.com](mailto:osama.aboulmagd@huawei.com)) to record attendance.
5. **Announcement**
   1. Chair asked people to put cellphone on mute if not speaking.
   2. Chair asked people to state name and affiliation when addressing for the first time during the session.
   3. Chair mentioned that he is still looking for volunteers and asked people to send him an email if interested in this activity.
6. **Presentations**
   1. **Woojin Ahn (Wilus Institute) presented “CR on 10.22.2.8 TXOP limits,” based on the submission 11-17-0088-03.**
      1. Summary
         1. Resolutions for three CIDs (6189, 7040, and 9412) on 10.22.2.8 TXOP limits are proposed.
      2. Discussion
         1. A member commented that the issue is that the TXOP an AP grants for UL transmission.
         2. Another member commented about the HE TB PPDU that an HE AP should not send a trigger frame if the TB PPDU exceeds the TXOP Limit.
         3. Chair mentioned that the change to the baseline seem to relate no CID.
         4. People discussed the dynamic fragmentation of an A-MSDU. Someone mentioned he does NOT think we should allow A-MSDU fragmentation. 🡪 The issue is that there will be cases that an A-MSDU exceeds the TXOP Limit.
         5. A member pointed out the issue of first fragment.
         6. Another member discussed relationship with the BRP sequence.
      3. Next Step
         1. Further updates are needed for this submission.
   2. **Liwen Chu (Marvell) presented “LB225 11ax D1.0 Comment Resolution 27.10.4 Part 1,” based on the submission 11-17-0553-02.**
      1. Summary
         1. Resolutions for multiple comments related to TGax D1.0 subclause 27.10.4 A-MPDU with multiple TIDs, with the following CIDs are propsoed:
            1. CIDs: 6187, 6183, 7605, 4793, 5402, 9392, 9393, 10332, 8136, 8135, 7947, 7944, 7943, 7942, 7941, 7940, 7949, 7950, 7948, 7962, 7863, 7864, 8401, and 8393.
      2. Discussion
         1. A member commented “Ack Enabled Multi-TID A-MPDU” and “Non Ack Enabled Multi-TID A-MPDU” shall be clearly defined.
         2. Another member asked for clarification of the proposed text for 27.10.4.2.
         3. There was a comment that the NOTE in 27.10.4.2 is not clear.
         4. Discussion continued.
   3. **Chittabrata Ghosh (Intel) presented “LB225 11ax D1.0 Comment Resolution 27.10.4 – Part II,” based on the submission 11-17-0688-01.**
      1. Summary
         1. This is another submission to proposed to resolve comments related to TGax D1.0 subclause 27.10.4 A-MPDU with multiple TIDs.
            1. CIDs: 4795, 5696, 6031, 7606, 7607, 7608, 7609, 9731, 9948, 9949, 9950, 9951, and 9952.
      2. Discussion
         1. There was a comment that the resolution for CID 4795 seems to assume different baseline with the resolutions presented by the previous submission.
         2. A member discussed the number of TIDs allowed in an A-MPDU.
         3. Relation with the MU-RTS/CTS procedure was discussed.
      3. Next Step
         1. Chitto’s presentation was stopped due to the time 🡪 To be continued in the next teleconference.
7. **AoB**
   1. The next TGax teleconference is scheduled on June 1st, from 20:00 to 22:00 (ET)
8. **Adjournment**
   1. TGax teleconference adjourned @ 12:00 (ET)
9. **List of Attendees – following people were on the call.**

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|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Woojin Ahn | WILUS Institute |
| 3 | Liwen Chu | Marvell |
| 4 | Chittabrata Ghosh | Intel |
| 5 | Mark Hamilton | Ruckus-Brocade |
| 6 | Yasuhiko Inoue | NTT |
| 7 | Jarkko Kneckt | Apple |
| 8 | Kaiying Lv | ZTE |
| 9 | Jing Ma | NICT |
| 10 | Ogenkome Oteri | InterDigital |
| 11 | Abhishek Patil | Qualcomm |
| 12 | Albert Petrick | InterDigital |
| 13 | Mark Rison | Samsung |
| 14 | Yongho Seok | Newracom |
| 15 | John Son | Wilus Institute |
| 16 | Robert Stacy | Intel |
| 17 | Jung Hoon Suh | Huawei Technologies |
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# Teleconference on Thursday, June 1st, 2017, 20:00 – 22:00 (ET)

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 20:03 (ET).**
   1. Introduction of the chairperson and secretary.
2. **Agenda Setting**
   1. Proposed Agenda
      1. Call the meeting to order
      2. IEEE 802 and 802.11 IPR Policy and Procedure
      3. Attendance (Please send an e.mail to Yasuhiko Inoue (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama Aboul-Magd (osama.aboulmagd@huawei.com))
      4. Announcements
      5. Presentation
         1. 11-17-0688-01 “LB225 11ax D1.0 Comment Resolution 27.10.4 – Part II,” Chittabrata Ghosh (Intel)
         2. 11-17-0884-00, “LB225 11ax D1.0 Comment Resolution 9.7.1,” Liwen Chu (Marvell)
      6. AOB
      7. Adjourn
   2. Approval of the agenda
      1. Since Chitto is not available today, his presentation will be considered during the next teleconference.
      2. Chair asked if there is any item to add to the agenda. 🡪 No item to add to the agenda.
      3. Chair asked if there is any objection to approve the agenda. 🡪 No objection.
      4. The agenda was approved.
3. **IEEE 802 and 802.11 IPR Policy and Procedure**
   1. Chair mentioned that we are operating under the IEEE 802 and 802.11 Policy and Procedure.
   2. Relevant documents
      1. IEEE Patent Policy - <http://standards.ieee.org/board/pat/pat-slideset.ppt>
      2. Patent FAQ - <http://standards.ieee.org/board/pat/faq.pdf>
      3. LoA Form - <http://standards.ieee.org/board/pat/loa.pdf>
      4. Affiliation FAQ - <http://standards.ieee.org/faqs/affiliationFAQ.html>
      5. Anti-Trust FAQ - <http://standards.ieee.org/resources/antitrust-guidelines.pdf>
      6. Ethics - <http://www.ieee.org/portal/cms_docs/about/CoE_poster.pdf>
      7. IEEE 802.11 Working Group Operartions Manual - <https://mentor.ieee.org/802.11/dcn/14/11-14-0629-18-0000-802-11-operations-manual.docx>
   3. Chair asked if there is any potentially essential patent that people are aware of.
      1. No potentially essential patent reported.
4. **Attendance**
   1. Chair asked the attendees to send an email to Yasu ([inoue.yasuhiko@lab.ntt.co.jp](mailto:inoue.yasuhiko@lab.ntt.co.jp)) and/or Osama ([osama.aboulmagd@huawei.com](mailto:osama.aboulmagd@huawei.com)) to record attendance.
5. **Announcement**
   1. Chair asked people to put cellphone on mute if not speaking.
   2. Chair asked people to state name and affiliation when addressing for the first time during the session.
   3. Chair mentioned that he is still looking for volunteers and asked people to send him an email if interested in this activity.
6. **Presentations**
   1. **Liwen Chu (Marvell) presented “LB225 11ax D1.0 Comment Resolution 9.7.1,” based on the submission 11-17-0884-01.**
      1. Summary
         1. Resolutions for multiple comments related to TGax D1.0 subclause 9.7.1 (A-MPDU) with the following CIDs :
            1. CIDs: 6478, 7537, 7937, 8138, 9348, 10318 (6 CIDs).
      2. Discussion
         1. A member discussed consistency with the existing spec.
         2. Another member commented relationship with the Multi-TID operation.
         3. People discussed the spec for value 1 of EOF subfield.
      3. Next Step
         1. Chair asked people to contact Liwen if there are additional comments and/or feedback.
7. **AOB**
   1. None.
8. **Adjournment**
   1. Meeting adjourned at 20:35 (ET).
9. **List of Attendees – following people were on the call.**

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|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Woojin Ahn | WILUS Institute |
| 3 | Alfred Asterjadhi | Qualcomm |
| 4 | Liwen Chu | Marvell |
| 5 | Yasuhiko Inoue | NTT |
| 6 | Suhwook Kim | LG Electronics |
| 7 | Kaiying Lv | ZTE |
| 8 | Jing Ma | NICT |
| 9 | Abhishek Patil | Qualcomm |
| 10 | Albert Petrick | InterDigital |
| 11 | Shoko Shinohara | NTT |
| 12 | Huizhao Wang | Qualntenna |
| 13 | James Wang | MediaTek |
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# Teleconference on Thursday, June 15th, 2017, 20:00 – 22:00 (ET)

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 20:03 (ET).**
   1. Introduction of the chairperson and secretary.
2. **Agenda Setting**
   1. Proposed Agenda
      1. Call the meeting to order
      2. IEEE 802 and 802.11 IPR Policy and Procedure
      3. Attendance (Please send an e.mail to Yasuhiko Inoue (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama Aboul-Magd (osama.aboulmagd@huawei.com))
      4. Announcements
      5. Presentation
         1. 11-17-0688-01 “LB225 11ax D1.0 Comment Resolution 27.10.4 – Part II,” Chittabrata Ghosh (Intel)
         2. 11-17-0088-04, “CR on 10.22.2.8 TXOP limits,” Woojin Ahn (Wilus Institute)
      6. AOB
      7. Adjourn
   2. Approval of the agenda
      1. Since Chitto is not available today, his presentation will be considered during the next teleconference.
      2. Chair asked if there is any item to add to the agenda. 🡪 No item to add to the agenda.
      3. Chair asked if there is any objection to approve the agenda. 🡪 No objection.
      4. The agenda was approved.
3. **IEEE 802 and 802.11 IPR Policy and Procedure**
   1. Chair mentioned that we are operating under the IEEE 802 and 802.11 Policy and Procedure.
   2. Relevant documents
      1. IEEE Patent Policy - <http://standards.ieee.org/board/pat/pat-slideset.ppt>
      2. Patent FAQ - <http://standards.ieee.org/board/pat/faq.pdf>
      3. LoA Form - <http://standards.ieee.org/board/pat/loa.pdf>
      4. Affiliation FAQ - <http://standards.ieee.org/faqs/affiliationFAQ.html>
      5. Anti-Trust FAQ - <http://standards.ieee.org/resources/antitrust-guidelines.pdf>
      6. Ethics - <http://www.ieee.org/portal/cms_docs/about/CoE_poster.pdf>
      7. IEEE 802.11 Working Group Operartions Manual - <https://mentor.ieee.org/802.11/dcn/14/11-14-0629-18-0000-802-11-operations-manual.docx>
   3. Chair asked if there is any potentially essential patent that people are aware of.
      1. No potentially essential patent reported.
4. **Attendance**
   1. Chair asked the attendees to send an email to Yasu ([inoue.yasuhiko@lab.ntt.co.jp](mailto:inoue.yasuhiko@lab.ntt.co.jp)) and/or Osama ([osama.aboulmagd@huawei.com](mailto:osama.aboulmagd@huawei.com)) to record attendance.
5. **Announcement**
   1. Chair asked people to put cellphone on mute if not speaking.
   2. Chair asked people to state name and affiliation when addressing for the first time during the session.
   3. Chair mentioned that he is still looking for volunteers for the 802.11ax wave form generator and asked people to send him an email if interested in this activity.
   4. Chair mentioned that we still have about 1700 comments to resolve. Need to speed up.
6. **Presentations**
   1. **Chittabrata Ghosh (Intel) presented “LB225 11ax D1.0 Comment Resolution 27.10.4 – Part II,” based on the submission 11-17-0688-01.**
      1. Summary
         1. Resolutions for multiple comments related to TGax D1.0 subclause 27.10.4 (Multi-TID A-MPDU) with the following CIDs :
            1. CIDs: 4795, 5696, 6031, 7606, 7607, 7608, 7609, 9731, 9948, 9949, 9950, 9951, 9952 (13 CIDs).
      2. Discussion
         1. CID #6031: People discussed aggregation of a frame with the No ACK policy.
         2. CID #7606: Details of Multi-TID aggregation rules such as the number of TIDs in Trigger and aggregation of the Action frame are discussed.
         3. CID #9731: Some members still prefer not to aggregate MPDUs with lower priorities.
         4. A member discussed the capability bits relate to this mechanism.
      3. Next Step
         1. Chair suggested more discussion on the resolution of CID 7606.
   2. **Woojin Ahn (Wilus Institute) presented “CR on 10.22.2.8 TXOP limits,” based on the submission 11-17-0088-04.**
      1. Summary
         1. Resolutions for multiple comments related to TGax D1.0 subclause 10.22.2.8 (TXOP limits) with the following CIDs :
            1. CIDs: 6189, 7040, 9412 (3 CIDs).
      2. Discussion
         1. There was clarification request of the exceptions for TXOP limit rules.
         2. A member discussed beamforming Report case.
      3. Next Step
         1. Chair asked people to contact Woojin if there are additional comments and/or feedback.
7. **AOB**
   1. None.
   2. The next TGax teleconference is on June 22nd, 10:00 AM (ET).
8. **Adjournment**
   1. Meeting adjourned at 20:35 (ET).
9. **List of Attendees – following people were on the call.**

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| --- | --- | --- |
|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Tomoko Adachi | Toshiba |
| 3 | Woojin Ahn | WILUS Institute |
| 4 | Alfred Asterjadhi | Qualcomm |
| 5 | Liwen Chu | Marvell |
| 6 | Chittabrata Ghosh | Intel |
| 7 | Yasuhiko Inoue | NTT |
| 8 | Jeongki Kim | LG Electronics |
| 9 | Geonjun Ko | Wilus Institute |
| 10 | Jing Ma | NICT |
| 11 | Narendar Madhavan | Toshiba |
| 12 | Abhishek Patil | Qualcomm |
| 13 | Albert Petrick | InterDigital |
| 14 | Yongho Seok | Newracom |
| 15 | Shoko Shinohara | NTT |
| 16 | John Son | Wilus Institute |
| 17 | XiaofeiWang | InterDigital |
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