IEEE P802.11  
Wireless LANs

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| TGax July 2018 San Diego Meeting Minutes | | | | |
| Date: 2018-07-27 | | | | |
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Abstract

This document contains minutes of TGax July 2018 San Diego Meeting.

Rev. 0: Initial version.

**IEEE 802.11 Task Group AX,**

**The High Efficiency WLAN Standardization Task Group**

**July 2018 San Diego Meeting**

**Manchester Grand Hyatt, San Diego, CA**

**July 9th – 13th, 2018**

**Chair Osama Aboul-Magd (Huawei Technologies)**

**1st Vice-Chair Ron Porat (Broadcom Ltd.)**

**2nd Vice-Chair Alfred Asterjadhi (Qualcomm)**

**Secretary Yasuhiko Inoue (NTT Corporation)**

**Technical Editor Robert Stacey (Intel Corporation)**

# Monday, July 9th, 2018, 8:00 – 10:00, TGax ad hoc session

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 8:00 AM (local time).**
   1. Introduction of the chairperson Osama Aboul-Magd (Huawei Technologies) and the TGax secretary, Yasuhiko Inoue (NTT).
   2. Agenda: 11-18-1036-01 is on the server and is the working document. Chair will upload the rev 2 shortly after this session.
2. **Announcement**
   1. This is a TGax ad hoc meeting. No motion will be taken.
   2. Please announce your affiliation when you first address the group during a meeting slot.
   3. Do NOT forget the attendance! (http://newton.meeting.verilan.com/)
3. **Agenda Setting**
   1. Proposed agenda for Monday AM1 (ad hoc meeting)
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Submissions
      4. Editor Report – Robert Stacey
      5. Comment Assignment (if necessary)
      6. Presentations and Comment Resolution
      7. Adjourn
   2. Chair asked if there is any item to add to the agenda. 🡪 No response.
      1. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
      2. The agenda was approved.
4. **IEEE 802 and 802.11 IPR Policy and Procedure**
   1. Chair read the 5 slides of IEEE 802 Policies and Procedures.
      1. Participants have a duty to inform the IEEE
      2. Ways to inform IEEE
         1. Chair asked if there is any potentially essential patent that people are aware of.
            1. No potentially essential patent reported.
      3. Other guidelines for IEEE WG meetings
      4. Patent-related information
      5. Participation in IEEE 802 Meetings
5. **Agenda Items for the week**
   1. Proposed agenda
      1. Approve meeting and telecon minutes since May 2018.
      2. Start the work on resolving comments received on draft D3.0.
      3. Prepare a response to WBA liaison.
      4. Discuss 802.19 comments on TGax Coexistence Assurance document.
      5. Schedule ad hoc meeting in September if necessary.
      6. Schedule TG telecons.
   2. Discussion
      1. Re: 802.19 ballot – 802.19 disapproved CA document by Y/N/A = 16/6/0.
         1. The CA document is an 802 document and does not go to IEEE-SA level.
         2. It is required to be approved before going to the sponsor ballot.
         3. We need to understand the concern of 802.19 participants and need to do as much as we can.
      2. September ad hoc
         1. Since the IEEE 802 Wireless session is held in Hawaii, SF Bay Area will be very good to have the ad hoc meeting.
         2. Chair is looking for a volunteer to host the meeting.
6. **General flow of the ad hoc meeting**
   1. Slides 13 and 14 of the agenda contain the general flow of the meeting this week.
      1. TGax meeting schedule for July 2018:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Monday** | **Tuesday** | **Wednesday** | **Thursday** |
| AM1 | TGax  (ad hoc) |  | TGax | TGax |
| AM2 | WG Opening Plrnary | TGax | WG Mid-week Plenary |  |
| PM1 | TGax |  |  | TGax |
| PM2 |  | TGax | TGax |  |
| PM3  (EVE) |  |  |  |  |

1. **Call for submissions and ad hoc meeting scheduling**
   1. PHY submissions
      1. 11-18-0477, “Punctured NDP,” Ron Porat (Broadcom Ltd.)
      2. 11-18-1183, “Spec text change for error correction on STBC,” Jianhan Liu (MediaTek)
   2. MAC submissions
      1. 11-18-1181, “CR in FTM,” Jonathan Segev (Intel)
      2. 11-18-1189, “CR for NAV Part 1,” Po-kai Huang (Intel)
      3. 11-18-1211, “MAC CR subclause 27.16.1,” Alfred Asterjadhi (Qualcomm)
      4. 11-18-1219, “CR for ER SU Disable,” Po-Kau Huang (Intel)
      5. 11-18-1220, “CR for Random Access,” Po-Kai Huang (Intel)
      6. 11-18-1244, “Resolutions for CIDs related to BSS Color,” Abhishek Patil (Qualcomm)
      7. 11-18-1252, “D3.0 Comment Resolution for CIDs on Clause 6,” Jae Seung Lee (ETRI)
      8. 11-18-1246, “CR for OMI,” Jarkko Kneckt (Apple)
      9. 11-18-0496, “Disallow Sub-Channels,” Matthew Fischer (Broadcom Ltd.)
   3. MU submissions
      1. 11-18-1266, “Resolution for CIDs related to random access – Part 1,” Abhishek Patil (Qualcomm)
   4. TG submissions
      1. 11-18-1227, “CR for 6GHz – Discovery,” Laurent Cariou (Intel)
      2. 11-18-1229, “CR for 6GHz – Policy,” Laurent Cariou (Intel)
      3. 11-18-1256, “11ax 6GHz Operation,” George Cherian (Qualcomm)
      4. 11-18-1258, “CR for Punctured NDP,” Ron Porat (Broadcom Ltd.)
2. **Presentation/Comment Resolution**
   1. Ron Porat (Broadcom) presented “Punctured NDP,” based on the submission 11-18-0477-00.
      1. Summary
         1. HE sounding procedure does not describe sounding over BW that includes 20MHz channel puncture.
         2. Preamble punctured sounding procedure is proposed.
      2. Discussion
         1. Q: A participant asked if this is a proposal to change the sounding procedure. 🡪 A: Not the sounding procedure itself, but the way to calculate the value.
      3. **Straw Poll: Do you accept the concept for punctured NDP (slide 5 to slide 7) in Doc 11-18/0477r0?**
         1. **Y/N/A = 25/1/21**
3. **PHY Comment Assignment**
   1. Bo Sun (ZTE), PHY ad hoc chair, leads the discussion.
      1. Some comments are assigned individually while most of the comments are assigned per subclause basis.
4. **Presentation/Comment Resolution – Part II**
   1. **Jianhan Liu (MediaTek) presented “Spec. text change on error correction of STBC,” based on the submission 11-18-1183-00.**
      1. Summary
         1. In D3.0, spec. page 431, it says that STBC applied only for single spatial stream while it says STBC can be applied to 2 spatial streams in page 526.
         2. Proposed text change: “For an HE PPDU, STBC is applied only with 1 ~~or 2~~ spatial stream~~s~~ and only if DCM is not applied. Its appli-cation is indicated by the STBC field in HE-SIG-A.”
      2. Discussion
         1. A member asked for the related CIDs. 🡪 CIDs 17098, 16817 and 16994.
      3. **Straw Poll: Do you agree to “Accept” as the resolution to CID 17098 and “Revised – resolved by CID 17098” to CIDs 16817 and 16994?**
         1. **Discussion – No discussion**
         2. **Result: No objection.**
5. **AOB**
   1. None.
6. **Recess**
   1. TGax ad hoc meeting adjourned @ 9:27 AM.
   2. The next TGax session is in PM1.

# Monday, July 9th, 2018, 13:30 – 15:30, TGax sessions

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 8:00 AM (local time).**
   1. Introduction of the chairperson Osama Aboul-Magd (Huawei Technologies) and the TGax secretary Yasuhiko Inoue (NTT), Vice chairs Ron Porat (Broadcom) and Alfred Asterjadhi (Qualcomm).
   2. Agenda: 11-18-1036-01 is on the server and is the working document. Chair will upload the rev 2 shortly after this session.
2. **Announcement**
   1. This is a TGax ad hoc meeting. No motion will be taken.
   2. Please announce your affiliation when you first address the group during a meeting slot.
   3. Do NOT forget the attendance! (http://newton.meeting.verilan.com/)
3. **Agenda Setting**
   1. Proposed agenda for Monday AM1 (ad hoc meeting)
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Submissions
      4. Editor Report – Robert Stacey
      5. Comment Assignment (if necessary)
      6. Presentations and Comment Resolution
      7. Adjourn
   2. Chair asked if there is any item to add to the agenda. 🡪 No response.
      1. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
      2. The agenda was approved.
4. **IEEE 802 and 802.11 IPR Policy and Procedure**
   1. Chair read the 5 slides of IEEE 802 Policies and Procedures.
      1. Participants have a duty to inform the IEEE
      2. Ways to inform IEEE
         1. Chair asked if there is any potentially essential patent that people are aware of.
            1. No potentially essential patent reported.
      3. Other guidelines for IEEE WG meetings
      4. Patent-related information
      5. Participation in IEEE 802 Meetings
5. **The agenda for Monday PM1 (13:30 – 15:30)**
   1. Proposed Agenda
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Submissions and ad hoc groups time allocation.
      4. Summary from March 2018 meeting
      5. Timeline
      6. Editor Report – Robert Stacey
      7. TG motions
         1. Approve TG meeting and Telecon minutes since March 2018 meeting.
      8. TG Leadership
      9. Coexistence Assurance document
         1. Approve of Coexistence assurance document
      10. PAR Extension Request
      11. Presentations and Comment Resolution
      12. Recess
   2. Approval of the agenda
      1. Chair asked if there is any objection to proceed with this agenda. – No response.
      2. Agenda is approved.
6. **Summary from May 2018**
   1. Completed the comment resolution on draft D2.0.
   2. Approved a motion to prepare draft D3.0 and start a WG LB.
   3. WG LB 223 passed with 86.5%
   4. 2153 comments on draft D3.0 were received.
7. **TG motions**
   1. Approval of TG Minutes (March 2018 Meeting and Teleconferences Mintues)
      1. **Motion: Approve TGax minutes of meetings and teleconferences from May 2018 Interim meeting to today:**
   * <https://mentor.ieee.org/802.11/dcn/18/11-18-0888-02-00ax-tgax-may-2018-warsaw-meeting-minutes.docx>
   * <https://mentor.ieee.org/802.11/dcn/18/11-18-0809-02-00ax-minutes-of-tgax-may-2018-ad-hoc-mac-mu-sr-meeting-in-rennes.docx>
   * <https://mentor.ieee.org/802.11/dcn/18/11-18-0920-01-00ax-tgax-mac-ad-hoc-may-2018-meeting-minutes.docx>
     1. **Moved by Al Petrick, Seconded by Stuart Kerry**
     2. **Discussion – No discussion.**
     3. **Result: The motion was accepted with no objection.**
8. **Timeline**
   1. Updated timeline:
      1. **May 2014: start of the TG**
      2. **Nov. 2014: First draft of the TG SFD was approved**
      3. **Jan. 2016: proposed TG draft**
      4. **May 2016: Draft D0.1 was approved and CC started**
      5. **November 2016: Draft 1.0 and WG letter ballot – Failed (57.77%)**
         1. **LB-225: opened Dec. 1st 2016 and closed January 8th 2017**
      6. **September 2017: Draft 2.0 and WG letter ballot – Failed (62.84%)**
         1. **LB-230: opened Oct 5th and closed Nov 4th, 2017**
      7. **May 2018: Draft 3.0 and WG letter Ballot – Passes (86.5%).**
      8. **July 2018: MDR (Mandatory Document Review)**
      9. **November 2018: Draft 4.0 and Recirc.**
      10. **February 2019: Formation of SB pool**
      11. **July 2019: Sponsor Ballot**
      12. **December 2019: RevCom**
   2. Chair added “November 2018: Draft 4.0 and Recirc.” and adjusted start of the Sponsor Ballot.
9. **Ad hoc Meeting in September 2018**
   1. Chair is still looking for volunteers to host the meeting.
10. **WBA Liaison discussion**
    1. A spreadsheet including the 802.11ax MAC & PHY features is attached to the liaison letter.
    2. Some people have comments on the contents of the spreadsheet.
    3. Youhan Kim (Qualcomm) volunteers to review and to revise the feature lists. His colleague will help MAC part of the feature list.
11. **Presentation and Comment Resolution**
    1. **Matthew Fischer presented “Disallowed Sub channels,” based on the submission 11-18/0496r4.**
       1. Summary
          1. The submission contains proposed changes to add a new field to the end of the HE Operation IE called Operational Subchannel Information field.
          2. One additional bit called Punctured Operation is added inside of the HE Operation Information field to signal the presence/absence of the new field.
       2. Discussion
          1. A member commented that we need to change other part of the spec as well if we want to use the preamble puncturing mechanism.
          2. Another member is concerned by the changes in other part of the spec.
       3. **Straw Poll: Do you accept text changes related punctured NDP in 11-18/0496r4?**
          1. Discussion
             1. C: Some of the proposed texts are not really necessary.
             2. C: Some of the texts, e.g. HE BSS operation, do not relate to the NDP.
             3. People also discussed the granularity of the feedback.
          2. **Y/N/A = 16/14/26**
12. **AoB**
    1. Is anybody ready to present? 🡪 No response.
    2. 28 minutes left.
13. **Recess @15:03 until start of the Tuesday AM2 session (10:30 AM tomorrow).**

# Tuesday, July 10th, 2018, 10:30 – 12:30, TGax sessions

1. **Meeting called to order @ 10:30 AM by Osama Aboul-Magd, the TGax chairperson.**
   1. Introduction of the people at the front table.
2. **Announcement**
   1. Chair reminded people that we are still operating under the IEEE-SA IPR Policy and Procedure.
   2. Chair asked people to state name and affiliation when speaking for the first time during the session.
   3. Chair reminded people to do the attendance.
3. **Agenda Setting**
   1. Proposed agenda for this session:
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Presentations and Comment Resolution
         1. Report on progress related WBA PHY and MAC tables
            1. To be discussed on Wednesday
         2. Submissions
            1. 11-18/1244, Abhishek Patil (Qualcomm)
            2. 11-18/1219, Po-Kai Huang (Intel)
            3. 11-18/1220, Po-Kai Hunag (Intel)
      4. Recess
   2. Chair asked if there is any item to add to the agenda. – No response.
   3. Chair asked if there is any objection to proceed with this agenda. – No objection.
      1. The agenda for Tuesday AM2 is approved.
4. **WBA Liaison update – PHY and MAC tables**
   * 1. The volunteers, Youhan Kim and George Cherian, are still checking the contents of the tables.
5. **Comment Resolution**
   1. **Abhishek Patil (Qualcomm) presented “Resolution for CIDs related to BSS Color,” based on the submission 11-18-1244-00.**
      1. Summary
         1. The resolutions for the comments received for the IEEE 802.11ax draft 3.0 with following CIDs are proposed.
            1. Relevant CIDs: 15107, 16769, 17122, 15108, 16183, 16467, 15123, 15124, 16617, and 16618 (10 CIDs).
      2. Discussion
         1. Re: NOTE 2 on page 4: A member commented that it is already in the other part of the draft.
         2. Another member commented that the PARTIAL\_BSSCOLOR is not a parameter of the TXVECTOR/RXVECTOR.
         3. There was a comment that resolution for CID 16617 is related to the NAV and need coordination.
      3. Next Step
         1. Abhi to come back with a updated submission.
   2. **Po-Kai Huang (Intel) presented “11ax D3.0 MAC Comment Resolution for ER SU Disable,” based on the submission 11-18-1219-01.**
      1. Summary
         1. The resolution for the comment of TGax Draft D3.0 with CID 16602 is prosed.
      2. Discussion
         1. There was a minor editorial comment. 🡪 Po-Kai updated the text.
      3. Straw Poll: **Do you agree to resolution to CID 16602 in doc 11-18/1219r2?**
         1. **Result: No objection.**
      4. Next Step
         1. To be converted to a motion.
   3. **Po-Kai Huang (Intel) presented “11ax D3.0 MAC Comment Resolution for Random Access,” based on the submission 11-18-1220-01.**
      1. Summary
         1. Resolutions for comments of TGax Draft D3.0 with the CIDs 16596 and 16597 are proposed.
      2. Discussion
         1. A participant is concerned by the proposed text on the page 4. An additional NOTE was suggested by the other member.
         2. There was a comment that the proposed text related the the CID 16597 is already in the draft.
         3. People discussed the impact of the changes on the OBO.
         4. Further clarification is requested by a member.
      3. Next Step
         1. Po-Kai to come back with an updated submission.
6. **AoB** – none.
7. **Recess @11:26 AM until start of the Tuesday PM2 session (16:00).**

# Tuesday, July 10th, 2018, 16:00 – 18:00, TGax sessions

1. **Meeting called to order @ 16:00 AM by Osama Aboul-Magd, the TGax chairperson.**
   1. Introduction of the people at the front table.
2. **Agenda Setting**
   1. Proposed agenda for this session:
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Presentations and Comment Resolution
         1. Submissions: 6 GHz
      4. Recess
   2. Chair asked if there is any item to add to the agenda. – No response.
   3. Chair asked if there is any objection to proceed with this agenda. – No objection.
      1. The agenda for Tuesday AM2 is approved.
3. **Announcement**
   1. Chair reminded people that we are still operating under the IEEE-SA IPR Policy and Procedure.
   2. Chair asked people to state name and affiliation when speaking for the first time during the session.
   3. Chair reminded people to do the attendance.
4. **Presentation**
   1. **Laurent Cariou (Intel) presented “CR for 6GHz Discovery,” based on the submission 11-18-1227-02.**
      1. Summary
         1. Resolutions for comments submitted to the IEEE 802.11ax draft 3.0 with CIDs 15121 and 15825 on 6GHz discovery are proposed.
      2. Discussion
         1. People discussed the operation and management related issues of 6GHz band assuming that the AP is multi-band capable.
         2. People also discussed actual requirements to operate in the 6GHz band such as DFS. Details are not sure at this point of time.
   2. **Alfred Asterjadhi (Qualcomm) presented “Comment resolutions for 27.16.1,” based on the submission 11-18-1211-00.**
      1. Summary
         1. Resolutions for multiple comments related to TGax D3.0 subclause 27.16.1 (Basic HE BSS functionality) with the following CIDs are proposed.
            1. Relevant CIDs: 15120, 15121, 15122, 15166, 15414, 15415, 15416, 15829, 15832, 16039, 16074, 16227, 16251, 16444, 16446, 16690, 17090 (17 CIDs)
      2. Discussion
         1. Re: CID 16227: The commenter does not agree with the inclusion of VHT operation element (as described in the comment).
         2. A member commented that definition of the HE BSS in clause 3.2 is not good. It should be “HE BSS is a BSS which …”
         3. Another member discussed disabling HT and VHT Capabilities.
         4. There was a request to have more discussion for this submission.
5. **AoB**
   1. Time is up.
6. **Recess @18:00 until start of the Wednesday AM1 session (8:00 AM).**

# Wednesday, July 11th, 2018, 8:00 – 10:00, TGax session

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 08:03 (Local Time).**
   1. Introduction of the TGax leadership.
2. **Announcement/Reminder**
   1. Chair reminded that we are still operating under IEEE 802 and IEEE 802.11 Policy and Procedure.
   2. Chair asked people to state name and affiliation when addressing for the first time in the session.
   3. Attendance.
3. **Agenda Setting**
   1. Proposed Agenda
      1. Call meeting to order
      2. IEEE-SA IPR Policies and Procedures.
      3. Agenda Setting
      4. 802.19 comments discussion and UWB/Wi-Fi coexistence issues. (8:00 – 9:00)
      5. PAR Extension and CSD Vote
      6. Presentations and Comment Resolution
      7. Recess
   2. Approval of the agenda
      1. Chair asked if there is any objection to approve the agenda. 🡪 No objection.
      2. The agenda for Wednesday AM1 is approved.
4. **802.19 comments discussion and UWB/Wi-Fi coexistence issues**
   1. Steve Shellhammer, the chairperson of 802.19 WG, introduced the way that a coexistence document is processed.
   2. A participant commented that there are many results of coexistence studies publicly available. We can make use of existing results.
   3. **Tim Harrington presented “802.11ax and 802.15.4 HRP\_LRP Coexistence,” based on the submission 19-18-0040-00.**
      1. Summary
         1. 802.11ax scope has been changed to include use of the 6 GHz band while systems based on 802.15.4 UWB PHYs are widely used in the 6 GHz band.
         2. Task Group 15.4z has reviewed the CAD and provides comments and suggestions to help improve the11ax TG CAD so that there is better understanding of the coexistence characteristics.
      2. Discussion
         1. People discussed the scope of the CA document whether it includes coexistence with non-802 technologies.
         2. Some people suggestes the regulatory constraints to be considered in the CA document.
         3. TGax chairperson mentioned that some comments are beyond the ability of TGax and he expects 802.15 experts to help this work.
         4. People talked about the previous simulation works.
         5. Some people are concerned to have argument about the coexistence capability among the IEEE 802 systems since there is on going effort to open the 6 GHz band for the wireless LANs.
      3. Next Step
         1. The CA document needs to be approved before the sponsor ballot.
5. **PAR Extension and CSD Vote**
   1. **PAR Extension Motion: Move to approve the TGax PAR extension in doc 11-18/0870r2.**
      1. **Moved by Stuary Kerry, Seconded by Al Petrick.**
      2. **Discussion – No discussion.**
      3. **Result: Y/N/A = 57/0/0, motion passes.**
   2. **CSD Motion: Move to approve the TGax CSD document in 11-14/0169r2.**
      1. **Moved by Stuary Kerry, Seconded by Bin Tian.**
      2. **Discussion – No discussion.**
      3. **Result: Y/N/A = 58/0/0, motion passes.**
   3. **Response to 802.3 Comments: Move to approve the response to 802.3 comments on the TGax PAR and CSD in doc 11-18/0870r2.**
      1. **Moved by Robert Stacey, Seconded by Bin Tian.**
      2. **Discussion – No discussion.**
      3. **Result: Y/N/A = 56/0/0, motion passes.**
6. **Presentations and Comment Resolution Comment Resolutions**
   1. **Jonathan Segev (Intel) presented “CR for FTM,” based on the submission 11-18-1181-02.**
      1. Summary
         1. Resolutions for comments submitted to TGax Draft 3.0 on FTM with the following CIDs are proposed.
            1. Relevant CIDs: 15796, 16603, 15797, 15798, 17020, 17021, 17022, 15799, 16598, 17023, 15800, 16599, 16967, 15801, 16600, 15802, 16601, 16966.
      2. Discussion
         1. A member commented on the proposed text in 10.7.6.1 that a legacy device may not be capable of this requirement. 🡪 Jonathan to check it offline.
         2. Based on a comment from a member, the resolution for CID 15799 is updated with new text.
         3. There was a request to have more time if the changes are okay.
      3. Next Step
7. **AoB**
   1. Abhishek Patil (Qualcomm) presented the new revision of 18/1244.
      1. **Straw Poll: Do you agree to resolutions to CIDs 15107, 16769, 17122, 15108, 16183, 16467, 15123, 15124, 16617, 16618 in doc 11-18/1244r1?**
         1. **Result: Accepted with no objection.**
8. **Recess @ 9:56 AM until start of PM2 session (16:00) this afternoon.**

# Wednesday, July 11th, 2018, 16:00 – 18:00, TGax sessions

1. **Meeting called to order @ 10:30 AM by Osama Aboul-Magd, the TGax chairperson.**
   1. Introduction of the chairperson, secretary, and vice chairs.
2. **Agenda Setting**
   1. Proposed agenda:
      1. Call meeting to order
      2. IEEE-SA IPR Policies and Procedures.
      3. Agenda Setting
      4. Presentation and Comment Resolution
      5. WBA Liaison Response -11-18/1291
      6. Others
      7. Recess
   2. Approval of the agenda
      1. Chair asked if there is any objection to approve the agenda. 🡪 No objection.
      2. The agenda for Wednesday AM1 is approved.
3. **Announcement/Reminder**
   1. Chair reminded that we are still operating under IEEE 802 and IEEE 802.11 Policy and Procedure.
   2. Chair asked people to state name and affiliation when addressing for the first time in the session.
   3. Attendance.
4. **Presentation and Comment Resolution**
   1. **WBA Liaison: Youhan Kim (Qualcomm) presented “Proposed Response to Communication from Wireless Broadband Alliance (WBA) to IEEE 802.11 Working Group on 802.11ax,” based on the submission 11-18-1291-00.**
      1. Summary
         1. The attached spreadsheet to the liaison response is discussed.
            1. PHY part: lead Youhan Kim (Qualcomm)
            2. MAC part: lead by George Cherian (Qualcomm)
      2. Discussion
         1. People discussed the TWT related description.
         2. There was a discussion how to describe the duration based RTS feature.
         3. Some people commented that we should focus on the new features.
      3. **WBA Liaison Motion: Move to approve document 11-18/1291r2 as the liaison response to WBA and grant the WG chair editorial privilege.**
         1. **Moved by Youhan Kim, Seconded by George Cherian**
         2. **Discussion – No discussion.**
         3. **Result: Y/N/A = 33/0/3, motion passes.**
   2. **Jarkko Kineckt (Apple) presented “OM Control Comment Resolutions,” based on the submission 11-18-1246-01.**
      1. Summary
         1. Resolutions for the OM Control related comments with following CIDs are proposed.
            1. Relevant CIDs: 15010, 15011, 15105, 15173, 15372, 15734, 15735, 15736, 15737, 15766, 15864, 15865, 15990, 16615, 16188, 16362, 16488, 16489, 17016, 17017, 17031, 17033 and 17034 (23 CIDs).
      2. Discussion
         1. A member discussed the interpretation of contents in the Table 9-18b. Additional information is suggested.
         2. Another member asked for deferral of CID 15105 since current resolution does not address the issue.
         3. Interpretation and corresponding resolutions for some comments are questioned and asked for deferral.
      3. Next Step
         1. Jarkko to come back with updated submission.
   3. **Jae Seung Lee (ETRI) presented “D3.0 Comment Resolution for CIDs on Clause 6,” based on the submission 11-18-1252-00.**
      1. Summary
         1. Resolutions for the comments submitted to the IEEE 802.11ax draft 3.0 on clause 6 with following CIDs are proposed.
            1. Relevant CIDs: 15003, 15004, 15187, 15189, 15191, 15192, 15808, 15809, 15852, and 15853.
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you agree to resolutions to CIDs 15003, 15004, 15187, 15189, 15191, 15192, 15808, 15809, 15852, and 15853 in doc 11-18/1252r0?**
         1. **Result: Accepted with no objection.**
5. **AoB**
   1. 10 minutes left.
   2. Chair asked if there is objection to recess. – No objection.
6. **Recess @17:52 until start of the Thursday AM1 session (8:00 AM).**

# Thursday, July 12th, 2018, 8:00 – 10:00, TGax session

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 08:00 (Local Time).**
   1. Introduction of the people at the front table.
2. **Agenda Setting**
   1. Proposed Agenda for Thursday AM1 and PM1
      1. Call meeting to order
      2. IEEE-SA IPR Policies and Procedures.
      3. Presentation and comment resolution
      4. TG Motions
      5. Ad hoc meeting – September 2018
      6. Goals for September 2018
      7. Teleconferences schedule
      8. Adjourn
   2. Approval of the agenda
      1. The plan is to hear CR presentations as many as possible and approve the resolution by TG Motions. Start of TG Motion will be 15:00.
      2. Chair asked if there is any objection to approve the agenda. 🡪 No objection.
      3. The agenda was approved.
3. **Reminder**
   1. Chair reminded that we are still operating under IEEE 802 and IEEE 802.11 Policy and Procedure.
   2. Chair asked people to state name and affiliation when speaking for the first time during the session.
   3. Do NOT forget the attendance!
4. **Presentation and comment resolution**
   1. **Po-Kai Huang (Intel) presented “11ax D3.0 MAC Comment Resolution for Random Access,” based on the submission 11-18-1220-02.**
      1. Summary
         1. Po-Kai came back with an updated submission and went through the changes.
            1. Relevant CID: 16596 (27.5.5.2 Eligible RA-RU in UORA).
      2. Discussion
         1. A member commented that the first sentence is still ambiguous. 🡪 Po-Kai updated the sentence as suggested. Now the revision number of the document is r3.
      3. **Straw Poll: Do you accept the resolution to CID 16596 in doc 11-18/1220r3?**
         1. **Result: Accepted with no objection.**
   2. **Laurent Cariou (Intel) presented “CR for 6GHz - Policy,” based on the submission 11-18-1229-01.**
      1. Summary
         1. The resolution for the comment on 6GHz Policy is proposed.
            1. Relevant CID: 15826 (27.5.5.2 Eligible RA-RU in UORA).
      2. Discussion
         1. A member commented that it not clear how the AP knows the type of traffic.
         2. Another member suggested policy related negotiation during the association phase.
         3. Some people prefer simple extension to operate in the 6 GHz band.
         4. A participant mentioned that we should agree on the basic policy before going too much details of the spec.
5. **Ad hoc meeting – September 2018**
   1. 3-day MAC ad hoc & 1-day PHY ad hoc
   2. Location
      1. Option 1
         1. Bay Area
         2. Host: Tianyu (Samsung)
         3. MAC: 30-person room
         4. PHY: 20- person room
      2. Option 2
         1. San Diego and Hawaii
         2. Host: George (Qualcomm)-San Diego
         3. MAC: 40-person room in San Diego
         4. PHY: Meeting Venue in Hawaii – 1-day – Jon arranges a room
   3. **Straw Poll: Which option do you prefer?**
      1. **Result: Option 1/Option 2 = 19/6**
6. **AoB**
7. **Recess @ 9:11 AM until start of PM1 (13:30)**

# Thursday, July 12th, 2018, 13:30 – 15:30, TGax session

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 13:30 (Local Time).**
   1. Introduction of the TG leadership.
2. **Reminder**
   1. Chair reminded that we are still operating under IEEE 802 and IEEE 802.11 Policy and Procedure.
   2. Attendance!
3. **Agenda Setting – as approved during AM1**
   1. Proposed Agenda for Thursday AM1 and PM1as approved during AM1 session.
      1. Call meeting to order
      2. IEEE-SA IPR Policies and Procedures.
      3. Presentation and comment resolution
      4. TG Motions
      5. Ad hoc meeting – September 2018
      6. Goals for September 2018
      7. Teleconferences schedule
      8. Adjourn
4. **Submission and comment resolution**
   1. **Ron Porat (Broadcom Ltd.) presented “Punctured NDP Comment Resolution,” based on the submission 11-18-1258-00.**
      1. Summary
         1. Partial resolution (items 2 and 4) for CID 16723 related to punctured NDP in subclause 28.3.16 (HE sounding NDP PPDU) is proposed.
      2. Discussion
         1. A member mentioned that HE NDP PPDU should be defined.
         2. Another member commented that relation between CH\_BANDWIDTH and ACTIVE\_SUBCHANNEL is not clear enough.
         3. People discussed the Punctured non-HT Duplicate PPDU.
      3. **Straw Poll: Do you agree to resolution of CID 16723 in doc 11-18/1258r1?.**
         1. **Result: Y/N/A = 14/12/16.**
   2. **Matthew Fischer (Broadcom Ltd.) presented “Disallowed Sub channel,” based on the submission 11-18-0496-06.**
      1. Summary
         1. Matt came back with an updated submission and explained the material.
      2. Discussion
         1. People discussed the Punctured NDP and related signalling.
         2. People also discussed the relationship between Punctured NDP and the primary/secondary channels.
         3. There was a question whether all of the HE STA is required to support this operation. 🡪 The answer was no.
         4. There are many arguments and the chair suggested offline discussion. No straw poll for now.
5. **TG Motions**
   1. **Ad Hoc Meeting**
      1. **Motion: Authorize TGax to hold an ad-hoc meeting on September 5-7 in the Bay area, for the purpose of comment resolution.**

**Note: PHY ad hoc is meeting for only one day, Sept. 7**

* + - 1. **Moved by Hongyuan Zhang, Seconded by Tianyu Wu**
      2. **Discussion – No discussion.**
      3. **Result: Y/N/A = 33/0/0, motion passes.**
  1. **Technical Motions**
     1. **CR Motion #658: Move to agree to “Accept” as the resolution to CID 17098 and “Revised – resolved by CID 17098” to CIDs 16817 and 16994.**
        1. **Moved by Youhan Kim, Seconded by Abhishek Patil.**
        2. **Discussion – No discussion.**
        3. **Result: Accepted with no objection.**
     2. **CR Motion #659: Move to accept resolutions to CIDs 15107, 16769, 17122, 15108, 16183, 16467, 15123, 15124, 16617, and 16618 in doc 11-18/1244r1.**
        1. **Moved by Abhishek Patil, Seconded by Bin Tian.**
        2. **Discussion – No discussion.**
        3. **Result: Accepted with no objection.**
     3. **CR Motion #660: Move to accept resolution to CID 16602 in doc 11-18/1219r2.**
        1. **Moved by Laurent Cariou, Seconded by Robert Stacey.**
        2. **Discussion – No discussion.**
        3. **Result: Accepted with no objection.**
     4. **CR Motion #661: Move to accept resolutions to CIDs 15003, 15004, 15187, 15189, 15191, 15192, 15808, 15809, 15852, and 15853 in doc 11-18/1252r0.**
        1. **Moved by Yasuhiko Inoue, Seconded by Abhishek Patil.**
        2. **Discussion – No discussion.**
        3. **Result: Accepted with no objection.**
     5. **CR Motion #662: Move to accept the resolution to CID 16596 in doc 11-18/1220r3.**
        1. **Moved by Robert Stacey, Seconded by Laurent Cariou.**
        2. **Discussion – No discussion.**
        3. **Result: Accepted with no objection.**

1. **Teleconferences**
   1. Proposed teleconference schedule
      1. 10:00 -12:00 ET
         1. Thursday July 26, August 09, August 23, September 20
      2. 20:00 – 22:00 ET
         1. Thursday August 02, August 16, August 30
2. **September 2018 Ad Hoc Meeting**
   1. No ad hoc meeting needed before the July 2018 session.
3. **AoB**
   1. No business to conduct.
4. **Adjourn**
   1. **TGax adjourned for the week@ 15:20 (Local Time)**