IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IEEE 802.11  TGax November 2019 Waikoloa Meeting Minutes | | | | |
| Date: 2019-11-29 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Yasuhiko Inoue | NTT | * 1. Hikari-no-oka, Yokosuka, Kanagawa 239-0847 Japan | +81 46 859 5097 | yasu.inoue.h2k5@gmail.com |
|  |  |  |  |  |

Abstract

This document contains the TGax meeting minutes from the IEEE 802.11 November 2019 Waikoloa session.

**IEEE 802.11 Task Group AX November 2019 Meeting**

**Hilton Waikoloa Village, Waikoloa, HI**

**November 10th – 15th, 2019**

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

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

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

**Secretary Yasuhiko Inoue (NTT Corporation)**

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

**Monday, November 11th, 2019, PM2 TGax session (16:00 - 18:00)**

1. **The meeting called to order at 16:00 by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax leadership.
   2. Agenda document 19/1732r1 on the server. R2 is the working document.
2. **Agenda Setting**
   1. Proposed agenda for Monday PM2
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Submissions
      4. TG motions
         1. Approve TG meeting and teleconference minutes since July 2019
      5. Comment Assignment (if necessary) 🡪 all comments were assigned.
      6. Summary from WG LB#244
      7. Report to EC
      8. Comment Resolution
      9. Recess
   2. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
      1. The agenda for Monday PM2 is approved.
3. **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.
4. **IEEE-SA IPR Policy & Procedure**
   1. Chair read the following 5 slides:
      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
         1. Chair asked if anyone in this meeting is aware of any potentially essential patents. 🡪 There was no response.
      3. Other guidelines for IEEE WG meetings – done
      4. Patent-related information – done
      5. Participation in IEEE 802 Meetings – done
      6. Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct -- done
      7. Participants in the IEEE-SA “individual process” shall act independently of others, including employers -- done
      8. IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints -- done
5. **Agenda for the week**
   1. Approve meeting and teleconference minutes since September 2019.
   2. Start comment resolution on draft D5.0 with the intention to complete resolution of all comments by the end of this meeting.
   3. Review and approve the report to the 802 EC for conditional approval to proceed to SA ballot.
   4. Schedule TG ad hoc meeting, if needed.
   5. Schedule TG teleconference times.
6. **TGax meeting schedule**
   1. TGax plans to have 8 sessions this week. All sessions are TGax full session, i.e. there is no ad hoc session during this week.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Monday** | **Tuesday** | **Wednesday** | **Thursday** |
| **AM1** |  | TGax | TGax |  |
| **AM2** |  | TGax |  | TGax |
| **PM1** |  |  | TGax |  |
| **PM2** | TGax | TGax |  | TGax |
| **PM3 (EVE)** |  |  |  |  |

1. **Submissions**
   1. TGax received following submissions during the November 2019 session.
      1. 11-19-1684, “CR on dot11HECCAIndicatinMode,” Robert Stacey (Intel)
      2. 11-19-1796, “Comments on TGax CA doc r6,” Eldad Perahia (HPE-Aruba)
      3. 11-19-1810, “11ax D5.0 Comment Resolution for NAV related comments,” Po-Kai Huang (Intel)
      4. 11-19-1814, “11ax D5.0 MAC Comment Resolution for SM Power Save,” Po-Kai Huang (Intel)
      5. 11-19-1816, “11ax D5.0 MAC Comment Resolution for Duration-based RTS/CTS,” Po-Kai Huang (Intel)
      6. 11-19-1819, “Resolution to comment to subclause 9.3.1.7.1” Tomoko Adachi (Toshiba)
      7. 11-19-1831, “Comment resolutions for miscellaneous comments,” Alfred Asterjadhi (Qualcomm)
      8. 11-19-1832, “Comment resolutions for subclause 26.8,” Alfred Asterjadhi (Qualcomm)/Robert Stacey (Intel)
      9. 11-19-1833, “Comment resolution for subclause 26.15,” Alfred Asterjadhi (Qualcomm)
      10. 11-19-1834, “Comment resolution for subclause 26.17,” Alfred Asterjadhi (Qualcomm)
      11. 11-19-1835, “Comment resolutions for TWT IE,” Alfred Asterjadhi (Qualcomm)
      12. 11-19-1871, “Resolution to HESIGB and Related Comments,” Brian Hart (Cisco Systems)
      13. 11-19-1896, “Comment Resolutions for 11ax D5.0 HE PHY Service Interface Section,” Bo Sun (ZTE)
      14. 11-19-1905, “Resolution for CIDs related to Multiple BSSID,” Abhishek Patil (Qualcomm)
      15. 11-19-1906, “Resolution for CIDs related to BSS Color,” Abhishek Patil (Qualcomm)
      16. 11-19-1922, “Some 802.11ax comment resolutions,” Jarkko Kneckt (Apple)
      17. 11-19-1936, “Ack related comments,” George Cherian (Qualcomm)
      18. 11-19-1941, “CIDs on Clause 27.3.10.7 for D5.1,” Jianhan Liu (MediaTek)
      19. 11-19-1947, “MAC CR on Fragmentation,” Ming Gan (Huawei Technologies)
      20. 11-19-1948, “MAC CR on CID 22386 and 22387,” Ming Gan (Huawei Technologies)
      21. 11-19-1949, “CR for CID 22030, 22031, 22032, 22447,” Xiaogang Chen (Intel)
      22. 11-19-1956, “CR for BSS Color Related CIDs,” Xiaofei Wang (InterDigital Communications)
      23. 11-19-1957, “LB244 CR MAC Miscellaneous,” Yongho Seok (MediaTek)
      24. 11-19-1977, “CR for BSS Color Related CIDs Part 2,” Xiaofei Wang (InterDigital Commincations)
      25. 11-19-1983, “Remaining PHY Math comment resolutions,” Yang Zhang (Marvell Semiconductor)
      26. 11-19-1986, “Sounding CRs 11ax D5.0,” Menzo Wentink (Qualcomm)
      27. 11-19-1995, “CR for MU EDCA parameters,” Laurent Carioou (Intel)
      28. 11-19-1996, “CR for OPS,” Laurent Carioou (Intel)
      29. 11-19-1997, “CR for Out of band discovery,” Laurent Cariou (Intel)
      30. 11-19-1998, “CR for misc CIDs,” Laurent Cariou (Intel)
      31. 11-19-2004, “D5.0 PHY C,” Youhan Kim (Qualcomm)
      32. 11-19-2016, “CR BQR,” Zhou Lan (Broadcom)
      33. 11-19-2020, “11ax D5.0 comment resolution of various cubclauses,” Liwen Chu (Marvell)
      34. 11-19-2021, “Security parameter constraints,” Jouni Malinen (Qualcomm)
      35. 11-19-2023, “CRs on MCS Tables,” Bin Tian (Qualcomm)
      36. 11-19-2025, “11ax D5.0 comment resolution 26.6.3.1,” Liwen Chu (Marvell)
      37. 11-19-2030, “CR on CID 22392,” Ross Jian Yu (Huawei Technologies)
      38. 11-19-2035, “Transmit Spectral Mask for Preamble Punctured Channels,” Dorin Viorel (Quantenna Communications)
      39. 11-19-2047, “LB244 CR for FTM CIDs,” Jonathan Segev (Intel)
      40. 11-19-2053, “Proposed resolution for CIDs Related to Quiet Time Period,” Kaiying Lu (MediaTek)
      41. 11-19-2068, “11ax D5.0 comment resolution of various subclauses,” Liwen Chu (Marvell)
      42. 11-19-2077, “CID 22417,” Youhan Kim (Qualcomm)
      43. 11-19-2083, “CR for RNR,” Laurent Cariou (Intel)
2. **TG motion – approval of TGax meeting and teleconference minutes since September 2019**
   1. **Motion: Approve TGax minutes of meetings and teleconferences from September 2019 Interim meeting to today:** 
      * <https://mentor.ieee.org/802.11/dcn/19/11-19-1630-00-00ax-tgax-september-2019-hanoi-meeting-minutes.docx>
      * <https://mentor.ieee.org/802.11/dcn/19/11-19-1990-00-00ax-tgax-teleconference-minutes-october-29-2019.docx>
      1. **Moved by Allan Jones, Seconded by Bin Tian**
      2. **Discussion – no discussion.**
      3. **Result: The motion was approved by unanimous consent.**
3. **Summary from WGLB#244**
   1. Chair presented summary of teleconferences after the July 2019 session.
      * Draft 5.0 completed recirculation ballot on October 24. The approval percentage was 93.8%. 558 comments were received (including those on the CAD – 34 comments). 166 editorials, 385 technical, and 7 general.
      * Draft 5.1 is available in the member area including resolutions to the Editorial comments.
4. **Report to EC on Conditional Approval to go to SA Ballot**
   1. The TGax chair is creating a report to 802 EC.
5. **Presentations and Comment Resolution**
   1. **Laurent Cariou (Intel) presented “CR MU EDCA parameters,” based on the submission 11-19-1955-00.**
      1. Summary
         1. Resolutions for the comments on MU EDCA parameters specified in the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22186 22285 22324 22325 22376 22377 22432 22433 22497 22545.
      2. Discussion
         1. Re: CID 22186: A member suggested modification to a proposed text.
         2. Re: CID 22324 and 22325: Another member has a similar comment to this one. The resolutions should be consistent. 🡪 Need offline discussion.
         3. Re: CID 22497: Deferred.
      3. **Straw Poll: Do you accept resolutions to CIDs 22285, 22376, 22377, 22432, 22433, 22545 in doc 11-19/1995r1?**
         1. **Result: Passed with unanimous consent.**
         2. **CIDs 22186, 22324, 22325, and 22497 need more discussions.**
      4. Next Step
         1. Laurent to have offline discussion on the deferred CIDs.
   2. **Laurent Cariou (Intel) presented “CR for Out of band discovery,” based on the submission 11-19-1997-01.**
      1. Summary
         1. Resolutions for the comments on the out of band discovery specified in the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22527, 22528, 22529, 22530, 22531, 22532, 22533
      2. Discussion
         1. A member discussed the relation to MIB variables with this mechanism.
         2. Laurent made some edit and the document is updated to r2.
      3. **Straw Poll: Do you accept resolutions to CIDs 22527, 22528, 22529, 22530, 22531, 22532, 22533 in doc 11-19/1997r2?**
         1. **Result: Passed with unanimous consent.**
      4. Next Step
         1. Approval by a TG motion.
   3. **Laurent Cariou (Intel) presented “CR for OPS,” based on the submission 11-19-1996-00.**
      1. Summary
         1. Resolutions for the comments on OPS defined in the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CID: 22223, 22224, 22225, 22251, 22252, 22254, 22255, 22256, 22257
      2. Discussion
         1. CID 22251 and 22252 was deferred by a request from a member.
      3. **Straw Poll: Do you accept resolutions to CIDs 22223, 22224, 22225, 22254, 22255, 22256, 22257 in doc 11-19/1996r0?**
         1. **Result: Resolutions to CIDs written in black were approved with unanimous consent.**
      4. Next Step
         1. Need more discussion on CID 22251 and 22252.
   4. **Youhan Kim (Qualcomm) presented “D5.0 PHY CR,” based on the submission 11-19-2004-00.**
      1. Summary
         1. Resolutions for the PHY related comments received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22460, 22024, 22025, 22026, 22027, 22548, 22297, 22298, 22556, 22367, 22396, 22505, 22506
      2. Discussion
         1. Re: CID 22367: A member asked for clarification on the terms in a table, i.e. “middle RU” and “center RU”. 🡪 Youhan uses these terms to mean different things.
         2. There was a comment on the partial MIB variable. 🡪 Youhan updated the document to r1.
      3. **Straw Poll: Do you accept resolutions to CIDs 22460, 22024, 22025, 22026, 22027, 22548, 22297, 22298, 22556, 22367, 22396, 22505, 22506 in doc 11-19/2004r1?**
         1. **Result: Approved with unanimous consent.**
      4. Next Step
         1. Approval by a TG motion.
6. **Recess**
   1. TGax is in recess @ 18:01 until Tuesday AM1.

**Tuesday, November 12th, 2019, AM1 TGax sessions (8:00 - 10:00 AM)**

1. **The meeting called to order at 10:30 by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax leadership.
   2. Agenda document 19/1732r3 on the server. Rev4 is the working document.
2. **Agenda Setting**
   1. Proposed agenda for Monday AM1
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Presentations and comment resolution
      4. Recess
   2. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
      1. The agenda for Tuesday AM1 is approved.
3. **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.
4. **Presentation and Comment Resolution**
   1. **Yongho Seok (MediaTek) presented “LB244 CR MAC Miscellaneous,” based on the submission 11-19-1957-01.**
      1. Summary
         1. Resolutions for the comments received for the MAC layer related specifications in the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22087, 22120, 22178, 22265, 22357, 22358 (6 CIDs)
      2. Discussion
         1. The group discussed the behavior of a STA when a different BSS Color is detected. 🡪 CIDs 22087 and 22120 are deferred for more discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 22178, 22265, 22357, 22358 in doc 11-19/1957r1?**
         1. **Result: Passed by unanimous consent.**
      4. Next Step
         1. Yongho to have offline discussions on the deferred CIDs.
   2. **Po-Kai Huang (Intel) presented “11ax D5.0 MAC Comment Resolution for NAV related comments,” based on the submission 11-19-1810-00.**
      1. Summary
         1. Resolutions for the NAV related comments received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22061, 22083, 22184, 22335, 22507
      2. Discussion
         1. A member asked for update of the proposed text to add some text to the NAV update by TXOP holder, e.g., If TXOP holder receives a frame not addressed to it, the STA is no more a TXOP holder. 🡪 the document was updated (r2).
      3. **Straw Poll: Do you accept resolutions to CIDs 22061, 22083, 22184, 22335, 22507 in doc 11-19/1810r2?**
         1. **Result: Passed with unanimous consent.**
      4. Next Step
         1. Approval by a TG motion.
   3. **Po-Kai Huang (Intel) presented “11ax D5.0 MAC Comment Resolution for SM Power Save,” based on the submission 11-19-1814-00.**
      1. Summary
         1. Resolutions for the comments on the SM Power Save defined in the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22119 and 22338
      2. Discussion
         1. Re: CID 22119, A member discussed the terminating condition of SM Power Save. Another member discussed the Trigger frame.
      3. **Straw Poll: Do you accept resolution to the CID 22338 in doc 11-19/1814r0?**
         1. **Result: Passed with unanimous consent.**
      4. Next Step
         1. Po-Kai to have offline discussion on CID 22119.
   4. **Po-Kai Huang (Intel) presented “11ax D5.0 MAC Comment Resolution for Duration-based RTS/CTS,” based on the submission 11-19-1816-00.**
      1. Summary
         1. Resolutions for the comments on the Duration-based RTS/CTS defined in the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22000, 22001, 22105, 22143, 22144, 22234, 22235, 22288
      2. Discussion
         1. CID 22105: Po-Kai changed the text in the Resolution column. 🡪 the r1 of this submission was created.
         2. CID 22144: to be resolved later.
      3. **Straw Poll: Do you accept resolutions to CIDs 22000, 22001, 22105, 22143, 22234, 22235, 22288 in doc 11-19/1816r1?**
         1. **Result: Passed with unanimous consent.**
      4. Next Step
         1. Po-kai to resolve CID 22144.
   5. **Tomoko Adachi (Toshiba) presented “Resolution to comment to subclause 9.3.1.7.1,” based on the submission 11-19-1819-00.**
      1. Summary
         1. The resolution for the comment on the subclause 9.3.1.7.1 of the IEEE 802.11ax D5.0 was proposed.
            1. CID: 22060
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolution to CID 22060 in doc 11-19/1819r0?**
         1. **Result: Passed with unanimous consent.**
      4. Next Step
         1. Approval by a TG motion.
   6. **Abhishek Patil (Qualcomm) presented “Resolution for CIDs related to BSS Color,” based on the submission 11-19-1906-01.**
      1. Summary
         1. Resolutions for the comments on the BSS Color related comments received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22404, 22405, 22406, 22407.
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 22404, 22405, 22406, 22407 in doc 11-19/1906r1?**
         1. **Result: Passed with unanimous consent.**
      4. Next Step
         1. Approval by a TG motion.
   7. **Abhishek Patil (Qualcomm) presented “Resolution for CIDs related to Multiple BSSID,” based on the submission 11-19-1905-01.**
      1. Summary
         1. Resolutions for the comments on the Multiple-BSSID related comments received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22103, 22106, 22006, 22217, 22115, 22122, 22281.
      2. Discussion
         1. CID 22122: A member discussed the discoverable and not discoverable BSSID. The original intention is to take care of the hidden BSSID cases. A member still has a question on the non-transmitted BSSID case. 🡪 Need offline discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 22103, 22106, 22006, 22217, 22115, 22281 in doc 11-19/1905r2?**
         1. **Result: Passed with unanimous consent.**
      4. Next Step
   8. **Po-Kai Huang (Intel) presented “11ax D5.0 MAC Comment Resolution for Duration-based RTS/CTS,” based on the submission 11-19-1816-01.**
      1. Summary
         1. Resolution for the CID 22144 that was missing in doc 11-19-1816r0 is proposed
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolution to CID 22144 in doc 11-19/1816r1?**
         1. **Result: Passed with unanimous consent.**
      4. Next Step
         1. Approval by a TG motion.
   9. **AoB**
      1. CIDs 22413 and 22414 assigned to Osama were transferred to Youhan.
   10. **Recess**
       1. Recess TGax is in recess @ 9:59 AM until AM2 today.

**Tuesday, November 12th, 2019, AM2 TGax sessions (10:30 - 12:30)**

1. **The meeting called to order at 10:30 by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax leadership.
   2. Agenda document 19/1409r2 on the server. R3 is the working document.
2. **Agenda Setting**
   1. Proposed agenda for Monday AM2
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Presentations and comment resolution
         1. Preamble puncturing
         2. Other PHY submissions
      4. Recess
   2. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
      1. The agenda for Tuesday AM2 is approved.
3. **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.
4. **Reminder**
   1. Chair reminded that we are still operating under the IEEE-SA IPR Policy & Procedure
5. **Presentation and Comment Resolution**
   1. **Dorin Viorel (CableLabs) presented “Transmit Spectral Mask for Preamble Punctured Channels,” based on the submission 11-19-2035-00.**
      1. Summary
         1. This submission analyzes the impact of the preamble puncturing emission mask upon legacy (802.11ac) signals and makes corresponding recommendations.
      2. Discussion
         1. A member commented that this is not the case of preamble puncturing.
         2. Another member commented that this is not an accurate analysis. To compare the 802.11ax over narrow band 802.11ac, the power should be adjusted depending on the channel bandwidth.
      3. **Straw Poll: Do you support enhancing 11ax puncturing mask specification?**
         1. **Options:**
            1. **Yes**
            2. **No**
            3. **Abstain**
         2. **Discussion**
            1. **Yes vote will be strong feedback to 3GPP.**
            2. **A member requested “Need more time” as the 4th option.**
         3. **Result:** 
            1. **Yes: 4,**
            2. **No: 23,**
            3. **Abstain: 16,**
            4. **Need more time: 16.**
6. **PHY Comment Resolution**
   1. **Yan Zhang (Marvell) presented “Remaining PHY Math comment resolutions,” based on the submission 11-19-1983-00.**
      1. Summary
         1. Resolution to the PHY Math comments related to the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22036, 22462, 22044, 22043, 22045, 22455, 22072, 22037, 22450, 22451, 22033, 22034 and 22035.
      2. Discussion
         1. CID 22043: A member commented that he/she does not understand what the proposed change means and prefers to reject the comment.
         2. CID 22450: Minor edit (correction of equation number).
         3. CID 22462: A member asked for the use of the same expression as the 802.11ac standard.
      3. **Straw Poll: Do you accept resolutions to CIDs 22036, 22462, 22044, 22043, 22045, 22455, 22072, 22037, 22450, 22451, 22033, 22034 and 22035 in doc 11-19/1983r1?**
         1. **Result: Accepted with unanimous consent.**
      4. Next Step
         1. Approval by TG motion.
   2. **Bo Sun (ZTE) presented “Comment Resolutions for 11ax D5.0 HE PHY Service Interface Section,” based on the submission 11-19-1896-00.**
      1. Summary
         1. Resolution for the comments on sub-clause 27.2.2 (TXVECTOR and RXVECTOR parameters), 27.2.3 (TRIGVECTOR parameters) and 27.2.4 (PHYCONFIG\_VECTOR parameters) defined in the IEEE 802.11ax D5.0 with following CID is proposed.
            1. CIDs: 22029, 22162, 22210, 22295, 22382, 22383, 22415, 22418, 22458, 22459, 22554.
      2. Discussion
         1. CID 22295: Minor edit.
         2. Bo’s presentation was suspended due to the time limitation.
      3. Next Step
         1. To hear rest of the Bo’s presentation.
7. **AoB**
   1. none.
8. **Recess**
   1. TGax is in recess @ 12:30 until PM2 today.

**Tuesday, November 12th, 2019, PM2 TGax Session (16:00 - 18:00)**

1. **The meeting called to order at 16:00 by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax leadership.
   2. Agenda document 19/1732r3 on the server. R3 is the working document.
2. **Agenda Setting**
   1. Proposed agenda for Monday AM2
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Presentations and comment resolution
      4. Recess
   2. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
      1. The agenda for Tuesday AM2 is approved.
3. **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.
4. **Reminder of the IEEE-SA IPR Policy & Procedure**
   1. Chair reminded the attendees that we are still operating under the IEEE-SA IPR Policies and Procedures.
5. **Presentation and Comment Resolution**
   1. **Alfred Asterjadhi (Qualcomm) presented “Security parameter constraints,” based on the submission 11-19-2021-00 on behalf of Jouni Malinen (Qualcomm).**
      1. Summary
         1. Resolution to the security related comment received for the IEEE 802.11ax D5.0 with following CID is proposed.
            1. CID: 22018.
      2. Discussion
         1. A member asked for a time to review this document with a security expert.
         2. Another member commented that there is different level of requirement in the proposed text. 🡪 Alfred needs to talk to Jouni.
      3. Straw Poll – No straw poll for now.
      4. Next Step
         1. Offline discussion.
   2. **Alfred Asterjadhi (Qualcomm) presented “Comment resolutions for TWT IE,” based on the submission 11-19-1835-00.**
      1. Summary
         1. Resolutions to the comments on TWT IE specified in the IEEE 802.11ax D5.0 with following CID is proposed.
            1. CIDs: 22090, 22091, 22092, 22093, 22094, 22095, 22096, 22097, 22312, 22313, 22314.
      2. Discussion
         1. CID 22090: The resolution was updated. The r1 of this document was created.
      3. **Straw Poll: Do you accept resolutions to CIDs 22090, 22091, 22092, 22093, 22094, 22095, 22096, 22097, 22312, 22313, 22314 in doc 11-19/2021r1?**
         1. **Result: Accepted with unanimous consent.**
      4. Next Step
         1. Approval by TG motion.
   3. **Alfred Asterjadhi (Qualcomm) presented “Comment resolutions for miscellaneous comments,” based on the submission 11-19-1831-00 on behalf of Jouni Malinen.**
      1. Summary
         1. Resolutions for the comments related to the MAC layer specification of the IEEE 802.11ax D5.0 with following CID is proposed.
            1. CIDs: 22068, 22081, 22104, 22117, 22118, 22154, 22259, 22267, 22268, 22356, 22364, 22365.
      2. Discussion
         1. CID 22117 and 22118: Resolutions are changed to “Rejected.”
         2. CID 22268: deferred.
      3. **Straw Poll: Do you accept resolutions to CIDs 22068, 22081, 22104, 22117, 22118, 22154, 22259, 22267, 22356, 22364, 22365 in doc 11-19/1831r1?**
         1. **Result: Accepted with unanimous consent.**
         2. **CID 22268 will be considered later.**
      4. Next Step
         1. Approval by TG motion.
   4. **Kaiying Lu (MediaTek) presented “Proposed resolution for CIDs Related to Quiet Time Period,” based on the submission 11-19-2048-00.**
      1. Summary
         1. Resolutions to the Quiet Time Period related comments received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22059, 22269, 22270, 22101, 22102.
      2. Discussion
         1. A member commented that this document should be reviewed by more people.
      3. **Straw Poll: Do you accept resolutions to CIDs 22059, 22269, 22270, 22101, 22102 in doc 11-19/2048r1?**
         1. **Result: Accepted with unanimous consent.**
      4. Next Step
         1. Approval by TG motion.
   5. **Kaiying Lu (MediaTek) presented “Proposed resolution for CIDs Related to Quiet Time Period,” based on the submission 11-19-2053-00.**
      1. Summary
         1. Resolution for the comment with CID 22536 related to the Quiet Time Period specified in the IEEE 802.11ax D5.0 CID is proposed.
      2. Discussion
         1. A member asked for justification of using BSSID[39:44].
         2. Another member suggested rejection for this comment.
      3. Straw Poll: No straw Poll for now.
      4. Next Step
         1. Need more discussion on the CID 22536.
   6. **Brian Hart (Cisco Systems) presented “Resolution to HESIGB and Related Comments,” based on the submission 11-19-1871-00 on behalf of Jouni Malinen.**
      1. Summary
         1. Resolution for the comments related the HE-SIG-B defined in the IEEE 802.11ax D5.0 with following CID is proposed.
            1. CIDs: 22441, 22041, 22038, 22016, 22391, 22296, 22443, 22040 (8 CIDs).
      2. Discussion
         1. CID 22441: The group discussed the RU Allocation 115 in detail.
         2. CID 22038: The group discussed dynamic split and equitable split. Some members are not sure whether we need to define such a technology.
         3. CID 22296: The group discussed the value for fields in Table 27-28 and 27-29 when the STA-ID subfield is 2046.
      3. **Straw Poll: Do you accept resolutions to CIDs 22441, 22041, 22038, 22016, 22391, 22296, 22443, 22040 (8 CIDs) in doc 11-19/1871r2?**
         1. **Result: Accepted with unanimous consent.**
      4. Next Step
         1. Approval by TG motion.
6. **Recess**
   1. **TGax is in recess @ 17:58 until Wednesday AM1.**

**Wednesday, November 13th, 2019, AM1 TGax session (8:00 - 10:00)**

1. **The meeting called to order at 8:00 AM by Osama Aboul-Magd (Huawei Technologies), the TGax chairperson.**
   1. Introduction of TGax leadership.
   2. Agenda document 19/1732r on the server.
2. **Agenda Setting**
   1. Proposed Agenda for Wednesday AM1:
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Presentation and Comment Resolution
         1. Report to EC - <https://mentor.ieee.org/802.11/dcn/19/11-19-2063-00-00ax-p802-11ax-report-to-ec-on-conditional-approval-to-go-to-sa-ballot.pptx>
         2. New CAD revision - <https://mentor.ieee.org/802.11/dcn/16/11-16-1348-07-00ax-coexistence-assurance.docx>
         3. Comment Resolution Submissions
         4. Continue 11-19/1986.
      4. Recess
   2. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
   3. The agenda for AM1 was approved.
3. **Announcements/Reminder**
   1. Attendance: <https://imat.ieee.org/attendance>
   2. Chair asked people to state name and affiliation when addressing the group for the first time in a session.
4. **IEEE-SA IPR Policies and Procedures**
   * 1. The TGax chairperson reminded people that we are still operating under the IEEE-SA IPR Policies and Procedures.
5. **Submissions and Comment Resolution**
   1. **Bo Sun (ZTE) presented “Comment Resolutions for 11ax D5.0 HE PHY Service Interface,” based on the submission 11-19-1896-01.**
      1. Summary
         1. This is continuation of Bo’s submission from Tuesday AM2.
      2. Discussion
         1. CID 22554: A participant commented that there is related text in other part of the draft. 🡪 Bo to take a look at that part.
      3. Straw Poll
      4. **Straw Poll: Do you accept resolutions to CIDs 22029, 22162, 22210, 22295, 22382, 22383, 22415, 22418, 22458, 22459 in doc 11-19/1986r1?**
         1. **Result: Accepted with no objection.**
      5. Next Step:
         1. Bo to check the related text of CID 22554.
   2. **Youhan Kim (Qualcomm) presented “,” based on the submission 11-19-2057-00.**
      1. Summary
         1. Resolutions for the comments received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            * CIDs: 22413 and 22414 (transferred from Osama)
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 22413, 22414 in doc 11-19/2057r0?** 
         1. **Result: Accepted with no objection for the 5 CIDs written in black.**
      4. Next Step:
         1. Approval by a TG motion.
   3. **George Cherian (Qualcomm) presented “Ack related comments,” based on the submission 11-19-1936-00.**
      1. Summary
         1. Resolution for the comments related to the Ack procedure defined in the IEEE 802.11ax D5.0 with following CIDs are proposed.
            * CIDs: 22063, 22065, 22108, 22211, 22284, 22302, 22303, 22317, 22321, 22369, 22408
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 22063, 22065, 22108, 22211, 22284, 22302, 22303, 22317, 22321, 22369, 22408 in doc 11-19/1936r0?**
         1. **Result: Passed by unanimous consent.**
      4. Next Step:
         1. Approval by a TG motion.
   4. **Jarkko Kneckt (Apple) presented “Some 802.11ax comment resolutions,” based on the submission 11-19-1922-00.**
      1. Summary
         1. Resolutions for the comments received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            * CIDs: 22185, 22198, 22417, 22082, 22086.
      2. Discussion
         1. CID 22185: There was a comment that this is something we already have for the GCM case, i.e. for TS with ACM=0, TS is setup when ADDTS is acked.
         2. After some discussion, CID 22185 was deferred.
         3. CID 22417: Deferred by a request from a participant.
      3. **Straw Poll: Do you accept resolutions to CIDs 22198, 22082, 22086 in doc 11-19/1922r1?** 
         1. **Result: Approved with unanimous consent.**
      4. Next Step: Jarkko to work on deferred CIDs.
   5. **Liwen Chu (Marvell) presented “11ax D5.0 comment resolution of various cubclauses,” based on the submission 11-19-2020-01.**
      1. Summary
         1. Resolutions for the comments received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            * CIDs: 22062, 22276, 22343, 22394.
      2. Discussion
         1. CID 22343: The group discussed the redundant statement.
      3. **Straw Poll: Do you accept resolutions to CIDs 22062, 22276, 22343, 22394 in doc 11-19/2020r1?** 
         1. **Result: Approved with unanimous consent.**
      4. Next Step
         1. Approval by a TG motion.
   6. **Alfred Asterjadhi (Qualcomm) presented “Comment resolutions for subclause 26.8,” based on the submission 11-19-1832-00.**
      1. Summary
         1. Resolutions for the comments related to subclause 26.8 (TWT operation) received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            * CIDs: 22053, 22054, 22055, 22056, 22111, 22112, 22113, 22147, 22150, 22151, 22152, 22153, 22199, 22200, 22277, 22278, 22279, 22280, 22424 (19 CIDs)
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 22053, 22054, 22055, 22056, 22111, 22112, 22113, 22147, 22150, 22151, 22152, 22153, 22199, 22200, 22277, 22278, 22279, 22280, 22424 in doc 11-19/1832r0?** 
         1. **Result: Approved with unanimous consent.**
      4. Next Step
         1. Approval by a TG motion.
   7. **Alfred Asterjadhi (Qualcomm) presented “Comment resolutions for subclause 26.15,” based on the submission 11-19-1833-00.**
      1. Summary
         1. Resolutions for the comments related to subclause 26.15 (PPDU format, BW, MCS, NSS, and DCM selection rules) received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            * CIDs: 22049, 22050, 22051, 22052, 22145, 22146, 22149, 22245, 22246, 22247, 22403, 22444.
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 22049, 22050, 22051, 22052, 22145, 22146, 22149, 22245, 22246, 22247, 22403, 22444 in doc 11-19/1833r0?** 
         1. **Result: Approved with unanimous consent.**
      4. Next Step
         1. Approval by a TG motion.
   8. **Alfred Asterjadhi (Qualcomm) presented the updated resolution for CID 22268 in “Comment resolutions for miscellaneous comments,” based on the submission 11-19-1831-01.**
      1. Summary
         1. Proposed text related to CID 22268 in 9.2.4.6a.4 (BSR Control) is updated based on the discussion during Tuesday.
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolution to CID 22268 in doc 11-19/1831r1?** 
         1. **Result: Approved with unanimous consent.**
      4. Next Step
         1. Approval by a TG motion.
6. **AoB**
   1. None.
7. **Recess**
   1. TGax meeting is in recess @ 10:00 AM until PM1 today.

**Wednesday, November 13th, 2019, PM1 TGax full sessions (13:30 - 15:30)**

1. **The meeting called to order at 13:30 by Osama Aboul-Magd (Huawei Technologies), the chairperson of the IEEE 802.11 TGax.**
   1. Introduction of TGax leadership.
   2. Agenda document 19/1732r5 on the server.
2. **Agenda Setting**
   1. Proposed Agenda for Wednesday PM1:
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Submissions and comment resolution
      4. Recess
   2. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
   3. The agenda for PM1 was approved.
3. **Announcements/Reminder**
   1. Chair reminded people that we are still operating under the IEEE-SA IPR Policies and Procedures.
   2. Attendance: <https://imat.ieee.org/attendance>
   3. Chair asked people to state name and affiliation when addressing the group for the first time in a session.
4. **Submissions and Comment Resolution**
   1. **Robert Stacey (Intel) presented “CR on dot11HECCAIndicationMode,” based on the submission 11-19-1684-04.**
      1. Summary
         1. Resolutions for the comments received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            * CIDs: 22348 and 22416
      2. Discussion
         1. A participant commented that the channel list was not complete information for a STA operating >= 20 MHz channel.
         2. CID 22348: A member mentioned this comment should be rejected.
         3. The group discussed relation between the proposal and UL MU CS mechanism.
      3. **Straw Poll: Do you accept resolutions to CIDs 22348 and 22416 in doc 11-19/1684r4?**
         1. **Result: Y/N/A: 16/2/29, the straw poll will be converted to a motion.**
      4. Next Step:
         1. Approval by a TG motion.
   2. **Po-Kai Huang (Intel) presented updated resolution for CID 22335 of the doc. 11-19-1810-02 (11ax D5.0 Comment Resolution for NAV related comments).**
      1. Summary
         1. Po-Kai presented an update.
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 22335 in doc 11-19/1810r2?** 
         1. **Result: Passed by unanimous consent.**
      4. Next Step:
         1. Approval by a TG motion.
   3. **Brian Hart (Cisco Systems) presented updated resolution for CID 22441 in doc. 11-19-1871-02 (Resolution to HESIGB and Related Comments).**
      1. Summary
         1. Brian explained the updated text related to the CID 22441..
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 22441 in doc 11-19/1871r2?**
         1. **Result: Approved with unanimous consent.**
      4. Next Step: Approval by TG motion.
   4. **Jianhan Liu (MediaTek) presented “CIDs on Clause 27.3.10.7 for D5.1,” based on the submission 11-19-1941-02.**
      1. Summary
         1. Resolutions for the comments with CID related to the IEEE 802.11ax D5.0 are proposed.
            * CIDs: 22384, 22385, 22409, 22410, 22411 and 22453.
      2. Discussion
         1. CID 22411: A participant commented that “HE PPDU with DCM” is not clear enough. 🡪 Jianhan disagreed.
         2. CID 22411: Regarding “HE PPDU with DCM”, another member is not happy with making global changes. 🡪 Jianhan was okay to reject the comment. After some discussion, the CID 22411 is transferred to Youhan.
      3. **Straw Poll: Do you accept resolutions to CIDs 22384, 22385, 22409, 22410, and 22453 in doc 11-19/1941r3?** 
         1. **Result: Accepted with unanimous consent.**
      4. Next Step:
         1. CIDs 22411 is transferred to Youhan.
         2. Approval by TG motion for the rest of CIDs.
   5. **Ross Jian Yu (Huawei Technologies) presented “CR on CID 22392,” based on the submission 11-19-2030-00.**
      1. Summary
         1. Resolutions for the comment with CID 22392 related to the IEEE 802.11ax D5.0 is proposed.
      2. Discussion
         1. No discussion
      3. **Straw Poll: Do you accept resolution to CID 22392 in doc 11-19/2030r0?** 
         1. **Result: Accepted with unanimous consent.**
      4. Next Step: Approval by TG motion.
   6. **Ming Gan (Huawei Technologies) presented “MAC CR on Fragmentation,” based on the submission 11-19-1947-00.**
      1. Summary
         1. Resolutions for the comments with CID 22064 and 22274 related to fragmentation specified in the IEEE 802.11ax D5.0 are proposed.
      2. Discussion
         1. CID 22064: A member mentioned that the reason of removing some text is redundancy.
      3. **Straw Poll: Do you accept resolutions to CIDs 22064 and 22274 in doc 11-19/1947r0?**
         1. **Result: Accepted with unanimous consent.**
      4. Next Step: Approval by TG motion.
   7. **Ming Gan (Huawei Technologies) presented “MAC CR on CID 22386 and 22387,” based on the submission 11-19-1948-00.**
      1. Summary
         1. Resolutions for the comments related to the MU Cascading defined in the IEEE 802.11ax D5.0 with following CIDs are proposed.
            * CIDs: 22386 and 22387.
      2. Discussion
         1. The group discussed the definition of MU cascading. There was a suggestion of alternative text.
      3. Straw Poll: No straw poll for now.
      4. Next Step: Ming to work offline with an interested people.
   8. **Xiaogang Chen (Intel) presented “CR for CID 22030, 22031, 22032, 22447,” based on the submission 11-19-1949-02.**
      1. Summary
         1. Resolution for the comment related to the IEEE 802.11ax D4.0 with following CIDs are proposed.
         2. This is basically a proposal of defining HE-SIG-B MCS.
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 22030, 22032 and 22447 in doc 11-19/1949r3?**
         1. **Result: Accepted with unanimous consent.**
      4. Next Step: Approval by TG motion.
5. **Recess**
   1. TGax is in recess @ 15:30 until Thursday AM2.

**Thursday, November 14th, 2019, AM2 TGax session (10:30 - 12:30)**

1. **The meeting called to order at 10:30 AM by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax leadership.
   2. Agenda document 19/1732r5 available.
2. **Agenda Setting**
   1. Proposed Agenda for Thursday AM1 and PM1:
      1. Call Meeting to order
      2. IEEE-SA IPR policy and Procedure.
      3. Comment Resolution
      4. TG Motions
      5. Submission and Comment Resolution
      6. Goals for January 2020
      7. Ad hoc meeting, if necessary
      8. Telecon Schedule
      9. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
   3. The agenda for AM1 and PM1 was approved.
3. **Announcements and Reminder**
   1. Chair reminded that we are still operating under the IEEE-SA Policy and Procedure.
   2. Chair asked people to state name and affiliation when addressing the group for the first time in a session.
   3. Attendance: <https://imat.ieee.org/attendance>
4. **TG Motion**
   1. **CR Motions**
      1. **CR Motion #950: Move to accept resolutions to CIDs 22285 22376 22377 22432 22433 22545 in doc 11-19/1995r2.**
         1. **Moved by Laurent Cariou, Seconded by Xiaogang Chen.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
      2. **CR Motion #951: Move to accept resolutions to CIDs 22527, 22528, 22529, 22530, 22531, 22532, 22533 in doc 11-19/1997r3.**
         1. **Moved by Laurent Cariou, Seconded by Alfred Asterjadhi.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
      3. **CR Motion #952: Move to accept resolutions to CIDs 22223 22224 22225 22254 22255 22256 22257 in doc 11-19/1996r1.**
         1. **Moved by Laurent Cariou, Seconded by Alfred Asterjadhi.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
      4. **CR Motion #953: Move to accept resolutions to CIDs 22460, 22024, 22025, 22026, 22027, 22548, 22297, 22298, 22556, 22367, 22396, 22505, 22506 in doc 11-19/2004r1.**
         1. **Moved by Youhan Kim, Seconded by Alfred Asterjadhi.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
      5. **CR Motion #954: Move to accept resolutions to CIDs 22178, 22265, 22357, 22358 (6 CIDs) in doc 11-19/1957r1.**
         1. **Moved by Kaiying Lu, Seconded by Ming Gan.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
      6. **CR Motion #955: Move to accept resolutions to CIDs 22061, 22083, 22184, 22335, 22507 in doc 11-19/1810r2.**
         1. **Moved by Robert Stacey, Seconded by Alfred Asterjadhi.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
      7. **CR Motion #956: Move to accept resolutions to CID 22338 in doc 11-19/1814r0.**
         1. **Moved by Robert Stacey, Seconded by Youhan Kim.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
      8. **CR Motion #957: Move to accept resolutions to CIDs 22000, 22001, 22105, 22143, 22144, 22234, 22235, 22288 in doc 11-19/1816r1.**
         1. **Moved by Robert Stacey, Seconded by Alfred Asterjadhi.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
      9. **CR Motion #958: Move to accept resolution to CID 22060 in doc 11-19/1819r0.**
         1. **Moved by Tomoko Adachi, Seconded by Alfred Asterjadhi.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
      10. **CR Motion #959: Move to accept resolution to CIDs 22404, 22405, 22406, 22407 in doc 11-19/1906r1.**
          1. **Moved by Abhishek Patil, Seconded by Alfred Asterjadhi.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      11. **CR Motion #960: Move to accept resolutions to CIDs 22103, 22106, 22006, 22217, 22281 in doc 11-19/1905r2.**
          1. **Moved by Abhishek Patil, Seconded by Alfred Asterjadhi.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      12. **CR Motion #961: Move to accept resolutions to CIDs 22036, 22462, 22044, 22043, 22045, 22455, 22072, 22037, 22450, 22451, 22033, 22034, 22035 in doc 11-19/1983r2.**
          1. **Moved by Yang Zhang, Seconded by Youhan Kim.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      13. **CR Motion #962: Move to accept resolutions to CIDs 22029, 22162, 22210, 22295, 22382, 22383, 22415, 22418, 22459, in doc 11-19/1896r1.**
          1. **Moved by Youhan Kim, Seconded by Ross Jian Yu.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      14. **CR Motion #963: Move to accept resolution to CID 22018 in doc 11-19/2021r1.**
          1. **Moved by Alfred Asterjadhi, Seconded by Youhan Kim.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      15. **CR Motion #964: Move to accept resolutions to CIDs 22090, 22091, 22092, 22093, 22094, 22095, 22096, 22097, 22312, 22313, 22314 in doc 11-19/1835r1.**
          1. **Moved by Alfred Asterjadhi, Seconded by Youhan Kim.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      16. **CR Motion #965: Move to accept resolutions to CIDs 22068, 22081, 22104, 22117, 22118, 22154, 22259, 22267, 22268, 22356, 22364, 22365 in doc 11-19/1831r1.**
          1. **Moved by Alfred Asterjadhi, Seconded by Youhan Kim.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      17. **CR Motion #966: Mov e to accept resolutions to CIDs 22059, 22269, 22270, 22101, 22102 in doc 11-19/2048r1.**
          1. **Moved by Kaiying Lu, Seconded by Alfred Asterjadhi.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      18. **CR Motion #967: Move to accept resolutions to CIDs 22441, 22041, 22038, 22016, 22391, 22296, 22443, 22040 (8 CIDs) in doc 11-19/1871r2.**
          1. **Moved by Brian Hart, Seconded by Youhan Kim.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      19. **CR Motion #968: Move to accept resolutions to CIDs 22413, 22414 in doc 11-19/2057r0.**
          1. **Moved by Youhan Kim, Seconded by Alfred Asterjadhi.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      20. **CR Motion #969: Move to accept resolutions to CIDs 22063, 22065, 22108, 22211, 22284, 22302, 22303, 22317, 22321, 22369, 22408 in doc 11-19/1936r0.**
          1. **Moved by George Cherian, Seconded by Alfred Asterjadhi.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      21. **CR Motion #970: Move to accept resolutions to CIDs 22198, 22082, 22086 in doc 11-19/1922r2.**
          1. **Moved by Jarkko Kneckt, Seconded by Alfred Asterjadhi.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      22. **CR Motion #971: Move to accept resolutions to CIDs 22062, 22276, 22343, 22394 in doc 11-19/2020r1.**
          1. **Moved by Liwen Chu, Seconded by Abhishek Patil.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      23. **CR Motion #972: Move to accept resolutions to CIDs 22053, 22054, 22055, 22056, 22111, 22112, 22113, 22147, 22150, 22151, 22152, 22153, 22199, 22200, 22277, 22278, 22279, 22280, 22424 in doc 11-19/1832r2.**
          1. **Moved by Alfred Asterjadhi, Seconded by Robert Stacey.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      24. **CR Motion #973: Move to accept resolutions to CIDs 22049, 22050, 22051, 22052, 22145, 22146, 22149, 22245, 22246, 22247, 22403, 22444 in doc 11-19/1833r0.**
          1. **Moved by Alfred Asterjadhi, Seconded by Youhan Kim.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      25. **CR Motion #974: Move to accept resolutions to CIDs 22348 and 22416 in doc 11-19/1684r5.**
          1. **Moved by Robert Stacey, Seconded by Srinivas Kandala.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      26. **CR Motion #975: Move to accept resolutions to CIDs 22384, 22385, 22409, 22410, and 22453 in doc 11-19/1941r3.**
          1. **Moved by Bin Tian, Seconded by Youhan Kim.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      27. **CR Motion #976: Move to accept resolution to CID 22392 in doc 11-19/2030r0.**
          1. **Moved by Ross Jian Yu, Seconded by Youhan Kim.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      28. **CR Motion #977: Move to accept resolutions to CIDs 22064 and 22274 in doc 11-19/1947r0.**
          1. **Moved by Ming Gan, Seconded by Alfred Asterjadhi.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
      29. **CR Motion #978: Move to accept resolutions to CIDs 22030, 22032 and 22447 in doc 11-19/1949r3.**
          1. **Moved by Youhan Kim, Seconded by Bin Tian.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
5. **Submission and Comment Resolution**
   1. **Laurent Cariou (Intel) presented “CR for MU EDCA parameters,” based on the submission 11-19-1995r2.**
      1. Summary
         1. Laurent presented the update.
            1. CID 22186: modify the sentence added by the resolution.
            2. CID 22324 22325 22497: change resolution
      2. Discussion
         1. No discussion.
      3. Motion
      4. **CR Motion #979: Move to accept resolutions to CIDs 22186, 22324, 22325, 22497 in doc 11-1995r2.**
         1. **Moved by Laurent Cariou, Seconded by Tomoko Adachi.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
   2. **Laurent Cariou (Intel) presented “CR for OPS,” based on the submission 11-19-1996r2.**
      1. Summary
         1. Laurent presented the updated resolutions for CID 22251 and 22252.
      2. Discussion
         1. No discussion.
      3. Motion
      4. **CR Motion #980: Move to accept resolutions to CIDs 22251 and 22252 in doc 11-19/1996r2.**
         1. **Moved by Laurent Cariou, Seconded by Alfred Asterjadhi.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
   3. **Laurent Cariou (Intel) presented “CR for misc CIDs,” based on the submission 11-19-1998r0.**
      1. Summary
         1. Resolutions for the comments related to the IEEE 802.11ax D5.0 are proposed.
      2. Discussion
         1. No discussion.
      3. Motion
      4. **CR Motion #981: Move to accept resolutions to CIDs 22048, 22209, 22293, 22431 in doc 11-19/1998r1.**
         1. **Moved by Laurent Cariou, Seconded by Youhan Kim.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
   4. **Laurent Cariou (Intel) presented “CR for RNR,” based on the submission 11-19-2083r0.**
      1. Summary
         1. Resolutions for the comments related to the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22088 22089 22140 22428 22518 22398
      2. Discussion
         1. CID 22088: Deferred by a request from a member.
         2. CID 22428: A member suggested small edits on the Table 9-281.
         3. There was a comment that the document is not on the server and the motion should be in PM2 to respect the 4 hour rule. 🡪 There was a objection that 4 hour rule is only applied for the draft.
         4. Another member discussed the Probe Response and RNR operation.
      3. Motion
      4. **CR Motion #982: Move to accept resolutions to CIDs 22089, 22140, 22428, 22518 in doc 11-19/2083r1.**
         1. **Moved by Laurent Cariou, Seconded by Robert Stacey.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
   5. **Jarkko Kneckt (Apple) presented “Some 802.11ax comment resolutions,” based on the submission 11-19-1922-02.**
      1. Summary
         1. Jarkko presented the update from the previous version (the resolution for CID 22185 and 22416).
      2. Discussion
         1. CID 22417: The resolution was updated from “Accepted” to “Rejected.” 🡪 document was updated from r2 to r3.
      3. Motion
      4. **CR Motion #983: Move to accept resolutions to CIDs 22185 and 22417 in doc 11-19/1922r3.**
         1. **Moved by Jarkko Kneckt, Seconded by Alfred Asterjadhi.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
   6. **Youhan Kim (Qualcomm) presented “,” based on the submission 11-19-2077-00.**
      1. Summary
         1. Youhan presented proposed resolution for the comment with CID 22411 which was transferred from Jianhan.
      2. Discussion
         1. No discussion.
      3. Motion
      4. **CR Motion #984: Move to accept resolution to CID 22411 in doc 11-19/2077r1.**
         1. **Moved by Youhan Kim, Seconded by Alfred Asterjadhi.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
   7. **Robert Stacey (Intel) presented “CR on dot11HECCAIndicationMode,” based on the submission 11-19-1684-05.**
      1. Summary
         1. Robert presented the updated resolution for the comments related to dot11HECCAIndicationMode”
            1. Relevant CID: 22348
      2. Discussion
         1. A participant asked if there was any MAC related text necessary. The answer was no.
         2. Another member asked if per-20 MHz CCA mandatory. 🡪 Mandatory/Optional is not changed.
      3. Motion – No motion.
   8. **Imran Latif (Intel) presented “Updated Channelization,” based on the submission 11-19-2041-00.**
      1. Summary
         1. Current 6 GHz channelization (draft 5.0) is not efficient in terms of useful channels.
         2. Two proposals:
            1. It is proposed to increase the guard-band on lower U-NII-5 from 10 to 20 MHz, shifting starting frequency from 5940 to 5950 MHz.
            2. It is proposed to perform channelization for each U-NII-band separately thus making it regulations agnostic (AFC, no AFC etc.).
      2. Discussion
         1. A member asked for the related CID. 🡪 CID 22048.
         2. Another member mentioned that the CR should be prioritized.
      3. Motion – No motion.
      4. Next Step
         1. To be revisited later.
   9. **Abhishek Patil (Qualcomm) presented “Resolution for CIDs related to Multiple BSSID,” based on the submission 11-19-1905-04.**
      1. Summary
         1. Abhishek presented the updated resolutions for the deferred CIDs (22115 and 22122).
      2. Discussion
         1. No discussion.
      3. Motion
      4. **CR Motion #985: Move to accept resolutions to CIDs 22122 and 22115 in doc 11-19/1905r4.**
         1. **Moved by Abhishek Patil, Seconded by Bin Tian.**
         2. **Discussion – No discussion.**
         3. **Result: Approved by unanimous consent.**
   10. **Jonathan Segev (Intel) presented “LB244 CR for FTM CIDs,” based on the submission 11-19-2047-00.**
       1. Summary
          1. Resolutions for the FTM comments with CID 22322 and 22323 related to the IEEE 802.11ax D5.0 are proposed.
       2. Discussion
          1. A member suggested the reason for rejection. 🡪 The document was updated to r1.
       3. Motion
       4. **CR Motion #986: Move to accept resolutions to CIDs 22322 and 22323 in doc 11-19/2047r1.**
          1. **Moved by Jonathan Segev, Seconded by Alfred Asterjadhi.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
   11. **Kaiying Lu (MediaTek) presented “Proposed resolution for CIDs Related to Quiet Time Period,” based on the submission 11-19-2053-01.**
       1. Summary
          1. Kaiying presented the updated resolution for the CID 22536.
       2. Discussion
          1. No discussion
       3. Motion
       4. **CR Motion #987: Move to accept resolution to CID 22536 in doc 11-19/2053r1.**
          1. **Moved by Kaiying Lu, Seconded by Abhishek Patil.**
          2. **Discussion – No discussion.**
          3. **Result: Approved by unanimous consent.**
6. **Recess**
   1. TGax is in recess @ 12:30 until PM2 today.

**Thursday, November 14th, 2019, PM2 TGax session (16:00 - 18:00)**

1. **The meeting called to order at 16:00 AM by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax leadership.
   2. Agenda document 19/1732r8 available.
2. **Agenda Setting**
   1. Proposed Agenda for Thursday AM2 and PM2 – as approved during the AM2 session today:
      1. Call Meeting to order
      2. IEEE-SA IPR policy and Procedure.
      3. Comment Resolution
      4. TG Motions
      5. Submission and Comment Resolution
      6. Goals for January 2020
      7. Ad hoc meeting, if necessary
      8. Telecon Schedule
      9. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda. 🡪 No objection.
   3. The agenda for PM2 was approved.
3. **Announcements and Reminder**
   1. Chair reminded that we are still operating under the IEEE-SA Policy and Procedure.
   2. Chair asked people to state name and affiliation when addressing the group for the first time in a session.
   3. Attendance: <https://imat.ieee.org/attendance>
4. **Submission and Comment Resolution**
   1. **Liwen Chu (Marvell) presented “11ax D5.0 comment resolution of various subclauses Part2,” based on the submission 11-19-2068-00.**
      1. Summary
         1. Resolutions for the comments received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
            1. CIDs: 22359, 22360, 22361, 22107
      2. Discussion

* + 1. **CR Motion #988: Move to accept the resolution to CID 22359, 22360, 22107 in doc 11-19/2068r0.**
       1. **Moved by Liwen Chu, Seconded by Yongho Seok.**
       2. **Discussion – No discussion.**
       3. **Result: Approved by unanimous consent.**
  1. **Menzo Wentink (Qualcomm) presented “Sounding CRs 11ax Draft 5.0,” based on the submission 11-19-1986-02.**
     1. Summary
        1. Resolutions for the comments received for the IEEE 802.11ax D5.0 with following CIDs are proposed.
           1. CIDs: 22206, 22208, 22287, 22289, 22290, 22305, 22370, 22373, 22374, 22388, 22389, 22390, 22395, 22445
     2. Discussion
        1. No discussion.

* + 1. **CR Motion #989: Move to accept the resolutions to CIDs 22206, 22208, 22287, 22289, 22290, 22305, 22370, 22373, 22374, 22388, 22389, 22390, 22395, 22445 in doc 11-19-1986r2.**
       1. **Moved by Menzo Wentink, Seconded by Alfred Asterjadhi.**
       2. **Discussion – No discussion.**
       3. **Result: Approved by unanimous consent.**
  1. **Bin Tian (Qualcomm) presented “CRs on NCS Tables,” based on the submission 11-19-2023-02.**
     1. Summary
        1. Resolutions for the comments related to MCS Tables specified in the IEEE 802.11ax D5.0 with following CIDs are proposed.
           1. CIDs: 22291, 22292
     2. Discussion
        1. No discussion.

* + 1. **CR Motion #990: Move to accept the resolutions to CIDs 22292, 22292 in doc 11-19-2023r2.**
       1. **Moved by Bin Tian, Seconded by Youhan Kim.**
       2. **Discussion – No discussion.**
       3. **Result: Approved by unanimous consent.**
  1. **Alfred Asterjadhi (Qualcomm) presented “Comment resolutions for subclause 26.17,” based on the submission 11-19-1834-00.**
     1. Summary
        1. Resolutions for the comments related to subclause 26.17 (HE BSS operation) defined in the IEEE 802.11ax D5.0 with following CIDs are proposed.
           1. CIDs: 22139, 22192, 22381, 22419, 22420, 22421, 22511, 22512, 22513, 22514, 22515, 22516, 22517, 22520, 22521, 22522, 22523, 22524, 22525, 22526
     2. Discussion
        1. CID 22420: The group discussed the interpretation of the comments regarding the in-band discovery and its relation with the FILS procedure.
        2. CIDs 22519 and 22057 are included in the rev 1 of this document.
        3. Alfred made further changes to the document based on the feedback during the presentation.

* + 1. **CR Motion #991: Move to accept the resolutions to CIDs 22139, 22192, 22381, 22419, 22420, 22421, 22511, 22512, 22513, 22514, 22515, 22516, 22517, 22520, 22521, 22522, 22523, 22524, 22525, 22526, 22519, 22057 in doc 11-19-1834r2.**
       1. **Moved by Alfred Asterjadhi, Seconded by Youhan Kim.**
       2. **Discussion – No discussion.**
       3. **Result: Approved by unanimous consent.**
  1. **Youhan Kim (Qualcomm) discussed resolutions to the comments related to Tx Spectral Mask.**
     1. Relevant CIDs: 22074, 22024, 22446, 22046 and 22047.
     2. Discussion
        1. CID 22046, 22047: A participant asked for careful analysis on these comments. 🡪 Not necessary.

* + 1. **CR Motion #992: Move to accept the following resolutions:**
       1. **CID 22074:**
          1. **Rejected. 11ac does not define transmit spectral mask for punctured transmissions.**
       2. **CID 22042, 22446:**
          1. **Rejected. The 11ax transmit spectral mask has other regions which puts enough pressure on transmit signals to have spectrum with reasonable level of out of channel emission.**
       3. **CID 22046, 22047:**
          1. **Rejected. Actual transmit spectrum is expected to have lower emission level than the transmit spectral mask.**
       4. **Moved by Youhan Kim, Seconded by Srinivas Kandala.**
       5. **Discussion: The issue of 4 hours rule was raised, however, it was confirmed that this is not the case.**
       6. **Result: 29/2/7, motion passes.**
  1. **Bo Sun (ZTE) presented “Comment Resolutions for 11ax D5.0 HE PHY Service Interface Section,” based on the submission 11-19-1896-01.**
     1. Summary
        1. Bo presented the updates of resolutions for some CIDs related to PHY Service Interface.
           1. CIDs: 22295, 22554
     2. Discussion
        1. No discussion.
     3. Motion – No motion is necessary

1. **Discussion on Next Step**
   1. **Withdrawn**
      1. Some people expressed withdrawal of some of their comments.
         1. Those people are asked to send an email to TGax chairperson.
2. **Comment Resolution and motion**
   1. **Discussion on Yonggang’s comments**
      1. Relevant CIDs:
         1. CID 22554 in doc. 11-19-1896r1
         2. CID 22258 in doc. 11-19-1996r1
         3. CID 22577 in doc. 11-19-1998r1
      2. Discussion
         1. A member mentioned we can accept those comments.
      3. **CR Motion #993: Move to accept**

* **the resolution to CID 22554 in doc 11-19-1896r1,**
* **the resolution to CID 22258 in doc 11-19-1996r1,**
* **the resolution to CID 22577 in doc 11-19-1998r1.**
  + - 1. **Moved by Youhan Kim, Seconded by Laurent Cariou.**
      2. **Discussion: No discussion.**
      3. **Result: Approved by unanimous consent.**
  1. **Xiaofei Wang (InterDigital) presented “CR for BSS Color Related CIDs Part 2,” based on the submission 11-19-1977r1.**
     1. Summary
        + 1. Xaiofei presented update on the resolution for CID 22504.
     2. Discussion
        1. No discussion.
     3. **CR Motion #994: Move to accept the resolution to CID 22504 in doc 11-19-1977r1.**
        1. **Moved by Xiaofei Wang, Seconded by Matthew Fischer.**
        2. **Discussion: No discussion.**
        3. **Result: Approved by unanimous consent.**
  2. **Motion on the resolutions for the editorial comments and CA document**
     1. Summary
        1. Resolutions for the comments in “Editorials in D5.1” and “CA doc” groups are considered.
     2. Discussion
        1. No discussion.
     3. **CR Motion #995: Move to accept the resolutions to CIDs with comment groups “Editorials in D5.1” and “CA doc” in doc 11-19-1782r7.**
        1. **Moved by Robert Stacey, Seconded by Srinivas kandala.**
        2. **Discussion – No discussion.**
        3. **Result: Approved by unanimous consent.**
     4. **Motion to extend TGax session by 15 minutes.**
        1. **Moved by Srinivas Kandala, Seconded by Jon Rosdahl.**
        2. **Discussion: No discussion.**
        3. **Result: Passed with unanimous consent.**
     5. **Kaiying Lu (MediaTek) presented “Proposed resolution for CID 22058,” based on the submission 11-19/2075r0.**
     6. Summary
        1. Use of DCM in 6 GHz band is discussed.
     7. Discussion
        1. Some people disagree the proposed change.
     8. **Straw Poll: Do you accept the resolution to CID 22058 in doc 11-19-2075r0?**
        1. **Result: Y/N/A = 7/20/9, not enough support.**
     9. **CR Motion #996: Move to accept “REJECTED” as the resolution to CID 22015.**

**The comment is out of scope: i.e. it is not on changed text, text affected by changed text or text that is the target of an existing valid unsatisfied comment.**

* + - 1. **Moved by Robert Stacey, Seconded by Youhan Kim.**
      2. **Discussion: No discussion.**
      3. **Result: Passed with unanimous consent.**
  1. **Discussion on the CID 22458**
     1. Summary
        1. Resolution for the remaining comment in doc. 11-19-1896r1 was considered.
        2. The proposal was to adopt the resolution for CID 22458 in 11-19/1896r2.
     2. Discussion
        1. No discussion.
     3. **CR Motion #997: Move to accept “REVISED” as the resolution to CID 22458.**

**Implement changes for CID 22458 in 19/1896r2.**

* + - 1. **Moved by Bin Tian, Seconded by Robert Stacey.**
      2. **Discussion: No discussion.**
      3. **Result: Passed with unanimous consent.**
  1. **Motion to extend TGax session by 15 minutes.**
     + 1. **Moved by Alfred Asterjadhi, Second: Srinivas Kandala**
       2. **Discussion: No discussion.**
       3. **Result: Y/N/A = 30/0/1, motion passes.**
  2. **Remaining comments.**
     1. Summary
        1. Proposed resolutions for the remaining comments are in the doc. 11-19-1782r8.
     2. Discussion
        1. No discussion.
     3. **CR Motion #998: Move to resolve remaining comments as in doc 19/1782r8.**
        1. **Moved by Robert Stacey, Seconded by Youhan Kim.**
        2. **Discussion: No discussion.**
        3. **Result: Passed with unanimous consent.**

1. **Motion for WG Recirculation Ballot**
   * 1. **Having approved comment resolutions for all of the comments received from LB#244 on TGax 5.0 as contained in document 11-19/1782r9,**

**Instruct the editor to prepare Draft 6.0 incorporating these resolutions and,**

**Approve a 15 day Working Group Recirculation Ballot asking the question “Should TGax D6.0 be forwarded to Sponsor Ballot?”**

* + - 1. **Moved by Robert Stacey, Seconded by Youhan Kim.**
      2. **Discussion: No discussion.**
      3. **Result: Y/N/A = 26/0/0, motion passes.**

1. **Adjournment**
   1. TGax has adjourned @ 18:30.