IEEE P802.11  
Wireless LANs

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| IEEE 802.11  TGax CRC Teleconferences Minutes July 2020 | | | | |
| Date: 2020-07-23 | | | | |
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Abstract

This document contains the minutes from the TGax teleconferences July, 2020.

Revision History:

* R0: Initial version.
  + Minutes of TGax CRC call on July 2nd, 2020.
* R1: Minutes of TGax CRC teleconference on July 7th, 2020 are included.
* R2: Minutes of TGax CRC teleconference on July 9th, 2020 are included.
* R3: Minutes of TGax CRC teleconference on July 16th and 21st, 2020 are included.
* R4: Minutes of TGax CRC teleconference on July 23rd, 2020 are included.
* R5: Minutes of TGax CRC teleconference on July 28th and 30th, 2020 are included.

**Thursday, July 2nd, 2020, TGax CRC Teleconference (10:00 AM - 13:00 ET)**

1. **The meeting called to order at 10:04 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax chairperson and secretary.
   2. The agenda document 20/0538r38 is the working document (revision 37 is on the server).
2. **Attendees**
   1. Aboul-Magd, Osama (Huawei Technologies)
   2. Asterjadhi, Alfred (Qualcomm)
   3. Baron, Stephane (Canon)
   4. Chen, Xiaogang (Intel)
   5. Chu, Liwen (NXP)
   6. Hunag, Po-Kai (Intel)
   7. Gan, Ming (Huawei Technologies)
   8. Inoue, Yasuhiko (NTT)
   9. Kakani, Naveen (Qualcomm)
   10. Kim, Youhan (Qualcomm)
   11. Patil Abhishek (Qualcomm)
   12. Rai, Kapil (Qualcomm)
   13. Rison, Mark (Samsung)
   14. Sakoda, Kazuyuki (Sony)
   15. Stacey, Robert (Intel)
   16. Sun, Bo (ZTE)
   17. Yang, Rui (InterDigital)
   18. Yu, Mao (NXP)
3. **Agenda Setting**
   1. Proposed agenda for the TGax CRC teleconference on July 2nd, 2020.
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Attendance Reminder – Please record your attendance on IMAT (imat.ieee.org)
      4. Comment Resolution Status – Robert Stacey
      5. CR Motion
         1. Doc.11-20-0951: CID 24525
      6. CR Submissions
         1. [11-20/0979](https://mentor.ieee.org/802.11/dcn/20/11-20-0979-01-00ax-mac-cr-on-bss-load-for-draft-6-0.doc), “MAC CR on BSS Load for Draft 6.0,” by Ming Gan (Huawei Technologies)
         2. [11-20/0980](https://mentor.ieee.org/802.11/dcn/20/11-20-0980-01-00ax-mac-cr-on-mu-cascading-for-draft-6-0.doc), “Mac CR on MU Cascading for Draft 6.0,” by Ming Gan (Huawei Technologies)
         3. [11-20/0981](https://mentor.ieee.org/802.11/dcn/20/11-20-0981-01-00ax-mac-cr-on-fragmentation-for-draft-6-0.doc), “MAC CR on Fragmentation for Draft 6.0,” by Ming Gan (Huawei Technologies)
      7. AoB
      8. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda.
      1. Discussion – No discussion
      2. **The agenda for TGax CRC teleconference on July 2nd, 2020 is approved.**
4. **IEEE 802 and 802.11 IPR policy and procedure**
   1. Patent Policy:
   2. Participants have a duty to inform the IEEE - done.
      * Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
      * Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims
   3. 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.
         1. **No potentially essential patent reported.**
   4. Other guidelines for IEEE WG meetings – done
   5. Patent-related information – 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. **Announcement**
   1. Attendance @ imat.ieee.org. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
6. **CR Motion**
   1. [**Doc.11-20-0951**](https://mentor.ieee.org/802.11/dcn/20/11-20-0951-01-00ax-cr-for-cid-24525.docx)**, “Proposed resolution for CID 24525,” by Kaiying Lu (MediaTek)**
      1. Kaiying was not on the call. Chairperson asked if the group could have a motion to approve the resolution.
      2. Discussion
         1. A member asked for more detailed reason for the rejection.
      3. Next Step
         1. Motion will be conducted during the next teleconference.
7. **CR submissions**
   1. **Ming Gan (Huawei Technologies) presented “MAC CR BSS Load,” based on the submission doc.11-20-0979-01.**
      1. Summary
         1. Resolution for the comments related to the defined by the IEEE 802.11ax D6.0 with following CIDs are proposed.
            1. CIDs: 24222, 24223, 24224.
      2. Discussion
         1. No discussion.
      3. Next Step
         1. There will be a motion to approve the proposed resolution in the next teleconference.
   2. **Ming Gan (Huawei Technologies) presented “MAC CR MU Cascading,” based on the submission doc.11-20-0980-01.**
      1. Summary
         1. Resolution for the comments related to the defined by the IEEE 802.11ax D6.0 with following CIDs are proposed.
            1. CIDs: 20732, 20733, 21450.
      2. Discussion
         1. CID 21450: The group discussed the definition of MU Cascading. Some people mentioned that an introductory text is not consistent with what are described in other parts of the draft. The group also discussed the mechanism to solicit an acknowledgment. A member commented he would like to see exactly permitted MU Cascading sequence.
      3. Next Step
         1. Need more discussion.
   3. **Ming Gan (Huawei Technologies) presented “MAC CR Fragmentation,” based on the submission doc.11-20-0981-01.**
      1. Summary
         1. Resolution for the comments related to the defined by the IEEE 802.11ax D6.0 with following CIDs are proposed.
            1. CIDs: 24364, 24553, 24554, 24557.
      2. Discussion
         1. CID 24364: A member commented that the proposed resolution (to add “in a PSDU”) does not help. Another member discussed receiver behavior of Dynamic Fragmentation Level 1. There was a request for offline discussion on this CID.
         2. CID 24554: Deferred for more discussion.
         3. CID 24557: A member mentioned that the proposed resolution should be fine but needs double check.
      3. Next Step
         1. CIDs 24364 and 24554 are deferred for more offline discussion.
8. **AoB**
   1. No other CR submission is available today.
   2. Potential agenda item for the next teleconference includes puncturing discussion.
9. **Adjournment**
   1. TGax CRC teleconference has adjourned @ 11:09 AM (ET).

**Tuesday, July 7th, 2020, TGax CRC Teleconference (17:00 - 19:00 ET)**

1. **The meeting called to order at 17:02 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax chairperson and secretary.
   2. The agenda document 20/0538r40 is the working document (revision 39 is on the server).
2. **Attendees**
   1. Aboul-Magd, Osama (Huawei Technologies)
   2. An, Song-Haur (Independent)
   3. Asterjadhi, Alfred (Qualcomm)
   4. Derham, Thomas (Broadcom)
   5. Hunag, Po-Kai (Intel)
   6. Inoue, Yasuhiko (NTT)
   7. Kim, Youhan (Qualcomm)
   8. Nandagopalan, Sai Shankar (Cypress)
   9. Patil, Abhishek (Qualcomm)
   10. Petrick, Albert (InterDigital)
   11. Rai, Kapil (Qualcomm)
   12. Rison, Mark (Samsung)
   13. Rosdahl, Jon (Qualcomm)
   14. Stacey, Robert (Intel)
   15. Yang, Rui (InterDigital)
   16. Yu, Mao (NXP)
3. **Agenda Setting**
   1. Proposed agenda for the TGax CRC teleconference on July 7th, 2020.
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Attendance Reminder – Please record your attendance on IMAT (imat.ieee.org)
      4. Comment Resolution Status – Robert Stacey
      5. CR Motion
         1. Doc.11-20-0951: CID 24525
      6. CR Submissions
         1. <https://mentor.ieee.org/802.11/dcn/20/11-20-0958-00-00ax-rnr-filtered-neighbor-ap-subfield.docx> - Abhishek Patil (Qualcomm)
      7. AoB
      8. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda.
      1. Discussion – No discussion
      2. **The agenda for TGax CRC teleconference on July 7th, 2020 was approved.**
4. **IEEE 802 and 802.11 IPR policy and procedure**
   1. Patent Policy:
   2. Participants have a duty to inform the IEEE - done.
      * Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
      * Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims
   3. 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.
         1. **No potentially essential patent reported.**
   4. Other guidelines for IEEE WG meetings – done
   5. Patent-related information – 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. **Announcement**
   1. Attendance @ imat.ieee.org. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
6. **CR Motion**
   1. [**Doc.11-20-0951**](https://mentor.ieee.org/802.11/dcn/20/11-20-0951-01-00ax-cr-for-cid-24525.docx)**, “Proposed resolution for CID 24525,” by Kaiying Lu (MediaTek)**
      1. Kaiying was not on the call.
      2. Next Step
         1. Motion will be conducted during the next teleconference.
   2. [**Doc.11-20-0819-06**](https://mentor.ieee.org/802.11/dcn/20/11-20-0819-06-00ax-mac-cr-miscellaneous-cids-in-subclause-26dot8.docx)**, “Comment resolutions for miscellaneous CIDs in clause 26.8,” by Alfred Asterjadhi (Qualcomm).**
      1. Summary
         1. Alfred presented the resolutions to the remaining CIDs 24104 and 24569 in doc.11-20-0819-06.
      2. Discussion – No discussion.
      3. **CR Motion #1068: Move to accept resolutions to CIDs 24104, 24569 in doc 11-20/0819r6.**
         1. **Moved by Alfred Asterjadhi, Seconded by Abhishek Patil**
         2. **Discussion – no discussion**
         3. **Result: Approved with unanimous consent.**
7. **CR submissions**
   1. **Abhishek Patil (Qualcomm) presented “Filtered Neighbor AP subfield in Reduced Neighbor Report element,” based on the submission** [**doc.11-20-0958-00**](https://mentor.ieee.org/802.11/dcn/20/11-20-0958-00-00ax-rnr-filtered-neighbor-ap-subfield.docx)**.**
      1. Summary
         1. This submission proposes to undo any changes to Filtered Neighbor AP subfield in sub-clause 9.4.2.170.2 to align with recent updates to REVmd.
      2. Discussion
         1. A member asked if Abhi is proposing the TGmd to do changes. 🡪 No. TGmd will approve the changes and TGax will follow the decision.
      3. Next Step
         1. There will be a motion to approve the proposed changes in the next teleconference.
   2. **Thomas Derham (Broadcom) presented “6 GHz capabilities (HT, VHT) CIDs,” based on the submission** [**doc.11-20-1003-00**](https://mentor.ieee.org/802.11/dcn/20/11-20-1003-00-00ax-6-ghz-capabilities-ht-vht-cids.docx)**.**
      1. Summary
         1. Resolutions for the comments related to 26.17.2 HE BSS operation in the 6 GHz band with following CIDs are proposed.
            1. CIDs: 24058, 24059, 24060, 24061, 24062, 24063, 24064, 24065, 24066, 24067, 24068, 24069, 24070, 24071, 24072, 24073, 24074, 24075, 24076, 24077, 24078, 24079.
      2. Discussion
         1. There was no big discussion.
      3. Next Step
         1. There will be a motion to approve the proposed resolution in the next teleconference.
   3. **Thomas Derham (Broadcom) presented “6 GHz RNR PSD clarification,” based on the submission** [**doc.11-20-1004-00**](https://mentor.ieee.org/802.11/dcn/20/11-20-1004-00-00ax-6-ghz-rnr-psd-clarification.docx)**.**
      1. Summary
         1. Thomas presented the doc.11-20-1004-00 that is basically a clarification for the resolution to CID 24558 proposed in doc.11-20-0822-06.
         2. Text in subclause 9.4.2.170.2 was updated.
      2. Discussion
         1. Some minor edits were suggested. The document was updated to r1.
      3. Next Step
         1. There will be a motion to approve the proposed changes in the next teleconference.
8. **AoB**
   1. Potential agenda item for the next teleconference:
      1. Preamble Puncturing
9. **Adjourn**
   1. TGax CRC teleconference on July 7th, 2020 has adjourned @ 17:40 (ET)

**Thursday, July 9th, 2020, TGax CRC Teleconference (20:00 - 23:00 ET)**

1. **The meeting called to order at 20:03 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax chairperson and secretary.
   2. The agenda document 20/0538r42 is the working document (revision 41 is on the server).
2. **Attendees**
   1. Aboul-Magd, Osama (Huawei Technologies)
   2. Adachi, Tomoko (Toshiba)
   3. Asterjadhi, Alfred (Qualcomm)
   4. Cherian, George (Qualcomm)
   5. Chu, Liwen (NXP)
   6. Derham, Thomas (Broadcom)
   7. Hamilton, Mark (CommScope/Ruckus)
   8. Inoue, Yasuhiko (NTT)
   9. Kim, Youhan (Qualcomm)
   10. Patil, Abhishek (Qualcomm)
   11. Petrick, Albert (InterDigital)
   12. Rosdahl, Jon (Qualcomm)
   13. Schelstraete, Sigurd (Quantenna)
   14. Wu, Tianyu (Apple)
   15. Yang, Rui (InterDigital)
3. **Agenda Setting**
   1. Proposed agenda for the TGax CRC teleconference on July 9th, 2020.
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Attendance Reminder – Please record your attendance on IMAT (imat.ieee.org)
      4. Comment Resolution Status – Robert Stacey
      5. Motion
         1. Doc.11-20-0951: CID 24525
         2. Doc.11-20-1003: CIDs 24058, 24059, 24060, 24061, 24062, 24063, 24064, 24065, 24066, 24067, 24068, 24069, 24070, 24071, 24072, 24073, 24074, 24075, 24076, 24077, 24078, 24079
         3. Doc.11-20-1004: Text changes
      6. CR Submissions
         1. <https://mentor.ieee.org/802.11/dcn/20/11-20-1022-00-00ax-11ax-d6-0-comment-resolution-of-misc-cids.docx> - Liwen Chu (NXP)
      7. AoB
      8. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda.
      1. Discussion – No discussion
      2. **The agenda for TGax CRC teleconference on July 9th, 2020 was approved.**
4. **IEEE 802 and 802.11 IPR policy and procedure**
   1. Patent Policy:
   2. Participants have a duty to inform the IEEE - done.
      * Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
      * Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims
   3. 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.
         1. **No potentially essential patent reported.**
   4. Other guidelines for IEEE WG meetings – done
   5. Patent-related information – 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. **Announcement**
   1. Attendance @ imat.ieee.org. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
6. **CR Motion**
   1. [**Doc.11-20-0951**](https://mentor.ieee.org/802.11/dcn/20/11-20-0951-01-00ax-cr-for-cid-24525.docx)**, “Proposed resolution for CID 24525,” by Kaiying Lu (MediaTek)**
      1. Discussion
         1. No discussion.
      2. **CR Motion #1069: Move to accept resolution to CID 24525 in doc 11-20/0951r1**
         1. **Moved by Kaiying Lu, Seconded by Alfred Asterjadhi**
         2. **Discussion – no discussion**
         3. **Result: Approved by unanimous consent.**
   2. [**Doc.11-20-1003-00**](https://mentor.ieee.org/802.11/dcn/20/11-20-1003-00-00ax-6-ghz-capabilities-ht-vht-cids.docx)**, “6 GHz capabilities (HT, VHT) CIDs,” by Thomas Derham (Broadcom).**
      1. There is no change since the resolutions were presented during the last teleconference.
      2. Discussion – No discussion.
      3. **CR Motion #1070: Move to accept resolutions to CIDs 24058, 24059, 24060, 24061, 24062, 24063, 24064, 24065, 24066, 24067, 24068, 24069, 24070, 24071, 24072, 24073, 24074, 24075, 24076, 24077, 24078, 24079 in doc 11-20/1003r0.**
         1. **Moved by Thomas Derham, Seconded by Youhan Kim**
         2. **Discussion – no discussion**
         3. **Result: Approved with unanimous consent.**
   3. [**Doc.11-20-1004-02**](https://mentor.ieee.org/802.11/dcn/20/11-20-1004-02-00ax-6-ghz-rnr-psd-clarification.docx)**, “6 GHz RNR PSD clarification,” by Thomas Derham (Broadcom).**
      1. There are minor update to be consistent with the base standard.
      2. Discussion – No discussion.
      3. **MAC Motion #133: Move to accept text change in doc 11-20/1004r2.**
         1. **Moved by Thomas Derham, Seconded by Youhan Kim**
         2. **Discussion – no discussion**
         3. **Result: Approved with unanimous consent.**
7. **CR submissions**
   1. **Liwen Chu (NXP) presented “11ax D6.0 comment resolution of misc CIDs,” based on the submission** [**doc.11-20-1022-01**](https://mentor.ieee.org/802.11/dcn/20/11-20-1022-01-00ax-11ax-d6-0-comment-resolution-of-misc-cids.docx)**.**
      1. Summary
         1. Resolutions for the comments with following CIDs related to the IEEE 802.11ax D6.0 are proposed.
            1. CIDs: 24381, 24389, 24403, 24470, 24565.
      2. Discussion
         1. CID 24381: A participant suggested editorial changes to the proposed text.
         2. Resolutions for other CIDs in this document seemed to be okay.
      3. Next Step
         1. There will be a motion to approve the proposed changes in the next teleconference.
8. **Plans for next week**
   1. There will be IEEE 802 virtual plenary meeting next week.
   2. TGax plans to have two teleconferences and the one on Tuesday counts for attendance of the plenary session.
9. **AoB**
   1. No other business to conduct during this teleconference.
10. **Adjournment**
    1. TGax CRC teleconference on July 9th, 2020 has adjourned @ 20:32 (ET).

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**Thursday, July 16th, 2020, TGax CRC Teleconference (20:00 - 23:00 ET)**

1. **The meeting called to order at 20:03 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax chairperson and secretary.
   2. The agenda document 20/0538r48 is the working document (revision 47 is on the server).
2. **Attendees**
   1. Aboul-Magd, Osama (Huawei Technologies)
   2. Adachi, Tomoko (Toshiba)
   3. An, Song-Haur (Independent)
   4. Asterjadhi, Alfred (Qualcomm)
   5. Cao, Rui (NXP Semiconductors)
   6. Chen, Xiaogang (Intel)
   7. Cherian, George (Qualcomm)
   8. Chu, Liwen (NXP)
   9. Derham, Thomas (Broadcom)
   10. Fischer, Matthew (Broadcom)
   11. Hamilton, Mark (CommScope/Ruckus)
   12. Inoue, Yasuhiko (NTT)
   13. Kim, Youhan (Qualcomm)
   14. Kneckt, Jarkko (Apple)
   15. Lindskog, Erik (Samsung)
   16. Liu, Jianhan (MediaTek)
   17. Lu, Kaiying (MediaTek)
   18. Murphy, Rick (vLogic)
   19. Nandagoparan, Sai Shankar (Cypress)
   20. Suh, Jung Hoon (Huawei Technologies)
   21. Pare, Thomas (MediaTek)
   22. Patil, Abhishek (Qualcomm)
   23. Petrick, Albert (InterDigital)
   24. Rison, Mark (Sumsung)
   25. Rosdahl, Jon (Qualcomm)
   26. Schelstraete, Sigurd (Quantenna)
   27. Srinivasa, Sudhir (NXP Semiconductors)
   28. Tian, Bin (Qualcomm)
   29. Wu, Tianyu (Apple)
   30. Xue, Qi (Qualcomm)
   31. Yang, Rui (InterDigital)
   32. Yi, Yongjianjohn (Futurewei Technologies)
   33. Zhang, Hongyuan (NXP Semiconductors)
   34. Zhang, Yan (NXP Semiconductors)
3. **Agenda Setting**
   1. Proposed agenda for the TGax CRC teleconference on July 16th, 2020.
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Attendance Reminder – Please record your attendance on IMAT (imat.ieee.org)
      4. Submission
         1. <https://mentor.ieee.org/802.11/dcn/20/11-20-1070-00-00ax-proposed-resolution-for-cid-24001.docx> – Andrew Myles
      5. Motion
         1. Doc.11-20-1068: CID 24168, 24420, 24424
         2. Doc.11-20-1054: CIDs 24093, 24094, 24095, 24096, and 24097
         3. Doc.11-20-0716: CIDs 24511, 24010, 24011, 24012, 24013
      6. CR Submissions
         1. <https://mentor.ieee.org/802.11/dcn/20/11-20-1029-00-00ax-phy-capability-he-mu-ppdu-rx-max-nhe-ltf-proposal.docx> - Yan Zhang
         2. <https://mentor.ieee.org/802.11/dcn/20/11-20-1022-03-00ax-11ax-d6-0-comment-resolution-of-misc-cids.docx> - Liwen Chu (NXP)
      7. AoB
      8. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda.
      1. Discussion – No discussion
      2. **The agenda for TGax CRC teleconference on July 16th, 2020 was approved.**
4. **IEEE 802 and 802.11 IPR policy and procedure**
   1. Patent Policy:
   2. Participants have a duty to inform the IEEE - done.
      * Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
      * Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims
   3. 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.
         1. **No potentially essential patent reported.**
   4. Other guidelines for IEEE WG meetings – done
   5. Patent-related information – 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. **Announcement**
   1. Attendance @ imat.ieee.org. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
6. **Submission**
   1. **Andrew Myles (Cisco Systems) presented “Proposed resolution for CID 24001,” based on the submission** [**doc.11-20-1070-01**](https://mentor.ieee.org/802.11/dcn/20/11-20-1070-01-00ax-proposed-resolution-for-cid-24001.docx)**.**
      1. Summary
         1. Resolution to a comment with CID 24001 related to the ED threshold defined in the IEEE 802.11ax D6.0 is proposed.
      2. Discussion
         1. A member asked what consequence would be to the 802.11 side. 🡪 The issue is vendors may not follow the standard.
         2. Another member mentioned that the ED only @ -72 dBm could be future scenario, however, was concerned about the compatibility with the devices today.
         3. Q: What will be the violation of standard? 🡪 -82/-72 dBm of PD/ED threshold does not violate the standard.
      3. **CR Motion #1072: Move to accept resolution to CID 24001 in doc 11-20/1070r2.**
         1. **Moved by Andrew Myles, Seconded by Alfred Asterjadhi**
         2. **Discussion**
         3. **Result: Approved by unanimous consent.**
7. **CR Motion**
   1. [**Doc.11-20-1068**](https://mentor.ieee.org/802.11/dcn/20/11-20-1068-00-00ax-sa1-misc-cr.docx)**, “SA1 Miscellaneous CR,” by Youhan Kim (Qualcomm)**
      1. No change from the previous presentation of this document.
      2. Discussion
         1. No discussion.
      3. **CR Motion #1073: Move to accept resolution to CID 24168, 24420, 24424 in doc 11-20/1068r0.**
         1. **Moved by Youhan Kim, Seconded by Bin Tian**
         2. **Discussion – no discussion**
         3. **Result: Approved by unanimous consent.**
   2. [**Doc.11-20-1054**](https://mentor.ieee.org/802.11/dcn/20/11-20-1054-01-00ax-resolutions-to-cids-24093-24097.docx)**, “Resolutions to CIDs 24093-24097,” by Tomoko Adachi (Toshiba).**
      1. There is no change since the resolutions were presented during the last teleconference.
      2. Discussion – No discussion.
      3. **CR Motion #1074: Move to accept resolution to CIDs 24093, 24094, 24095, 24096, and 24097 in doc 11-20/1054r1.**
         1. **Moved by Tomoko Adachi, Seconded by Yasuhiko Inoue**
         2. **Discussion – no discussion**
         3. **Result: Approved with unanimous consent.**
   3. [**Doc.11-20-0716**](https://mentor.ieee.org/802.11/dcn/20/11-20-0716-05-00ax-sa1-sounding-comments.docx)**, “11ax SA1 sounding comments,” by Menzo Wentink (Qualcomm).**
      1. Menzo is not on the call. The document has not been changed from what was presented during the previous teleconference.
      2. Discussion – No discussion.
      3. **CR Motion #1075: Move to accept resolution to CIDs 24511, 24010, 24011, 24012, 24013 in doc 11-20/0716r5.**
         1. **Moved by Youhan Kim, Seconded by Bin Tian**
         2. **Discussion – no discussion**
         3. **Result: Approved with unanimous consent.**
8. **CR submissions**
   1. **Yan Zhang (NXP) presented “PHY capability “HE MU PPDU *NHE-LTF* Rx” proposal,” based on the submission** [**doc.11-20-1029-01**](https://mentor.ieee.org/802.11/dcn/20/11-20-1029-01-00ax-phy-capability-he-mu-ppdu-rx-max-nhe-ltf-proposal.docx)**.**
      1. Summary
         1. This is not a CR submission but, is a proposal to add a new information in PHY Capabilities.
      2. Discussion
         1. Some people mentioned current spec is good enough and disagreed to have a new field in the PHY Capabilities. 🡪 Yan believes this information is necessary.
         2. The group had a long discussion on the effect of this change and impact to the implementation.
      3. **Straw Poll: Do you accept the changes proposed in doc 11-20/1029r1?**
         1. **Discussion – no discussion.**
         2. **Result: Y/N/A: 11/2/14**
      4. Next Step
         1. Yan will continue the discussion by email reflector.
   2. **Liwen Chu (NXP) presented “11ax D6.0 comment resolution of misc CIDs,” based on the submission** [**doc.11-20-1022-03**](https://mentor.ieee.org/802.11/dcn/20/11-20-1022-03-00ax-11ax-d6-0-comment-resolution-of-misc-cids.docx)**.**
      1. Summary
         1. Resolutions for the comments with following CIDs related to the IEEE 802.11ax D6.0 are proposed.
            1. CIDs: 24381, 24389, 24403, 24470, 24565.
      2. Discussion
         1. CID 24381: Again, group had a discussion on this CID. Due to time constraint, the discussion will be continued in the next teleconference.
      3. Next Step
         1. There will be further discussion in the next teleconference.
9. **AoB**
   1. No other business to conduct during this teleconference.
10. **Adjournment**
    1. TGax CRC teleconference on July 16th, 2020 has adjourned @ 20:57 (ET).

**Tuesday, July 21st, 2020, TGax CRC Teleconference (17:00 - 19:00 ET)**

1. **The meeting called to order at 17:02 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax chairperson and secretary.
   2. The agenda document 20/0538r49 is the working document (revision 48 is on the server).
2. **Attendees**
   1. Aboul-Magd, Osama (Huawei Technologies)
   2. Asterjadhi, Alfred (Qualcomm)
   3. Bei, Jianwei (NXP Semiconductors)
   4. Cao, Rui (NXP Semiconductors)
   5. Chu, Liwen (NXP Semiconductors)
   6. Derham, Thomas (Broadcom)
   7. Duan, Ruchen (Samsung)
   8. Grandhe, Niranjan (NXP Semiconductors)
   9. Hamilton, Mark (CommScope/Ruckus)
   10. Huang, Po-Kai (Intel)
   11. Inoue, Yasuhiko (NTT)
   12. Kim, Youhan (Qualcomm)
   13. Kneckt, Jarkko (Apple)
   14. Kwon, Young Hoon (NXP Semiconductors)
   15. Lee, Wookbong (Samsung)
   16. Liu, Jianhan (MediaTek)
   17. Lou, Hui-Ling (NXP Semiconductors)
   18. Patil, Abhishek (Qualcomm)
   19. Petrick, Albert (InterDigital)
   20. Rison, Mark (Samsung)
   21. Rosdahl, Jon (Qualcomm)
   22. Roy, Sayak (NXP Semiconductors)
   23. Schelstraete, Sigurd (Quantenna)
   24. Srinivasa, Sudhir (NXP Semiconductors)
   25. Suh, Jung Hoon (Huawei Technologies)
   26. Yi, Yongjiajohn (Futurewai Technologies)
   27. Wu, Tianyu (Apple)
   28. Yang, Rui (InterDigital)
   29. Zhang, Hongyuan (NXP Semiconductors)
   30. Zhang, Yan (NXP Semiconductors)
   31. Zheng, Xiayu (NXP Semiconductors)
3. **Agenda Setting**
   1. Proposed agenda for the TGax CRC teleconference on July 21st, 2020.
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Attendance Reminder – Please record your attendance on IMAT (imat.ieee.org)
      4. Motion to approve TG teleconference minutes
      5. Motion
         1. Doc.11-20-1022: CID 24381, 24389, 24403, 24470, 24565
      6. CR Submissions
         1. <https://mentor.ieee.org/802.11/dcn/20/11-20-0912-03-00ax-resolutions-to-miscellaneous-cids.docx> - Osama Aboul-Magd
      7. Review the remaining comments
      8. AoB
      9. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda.
      1. Discussion – No discussion
      2. **The agenda for TGax CRC teleconference on July 21st, 2020 was approved.**
4. **IEEE 802 and 802.11 IPR policy and procedure**
   1. Patent Policy:
   2. Participants have a duty to inform the IEEE - done.
      * Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
      * Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims
   3. 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.
         1. **No potentially essential patent reported.**
   4. Other guidelines for IEEE WG meetings – done
   5. Patent-related information – 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. **Announcement**
   1. Attendance @ imat.ieee.org. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
6. **Motion to approve the TG teleconference minutes**
   1. **Motion: Move to approve minutes of TG teleconferences in doc:**

* **TGax CRC Teleconference minutes during June 2020 (June 4, 9, 11, 16, 18, 23, and 30)**
  + [**https://mentor.ieee.org/802.11/dcn/20/11-20-0849-08-00ax-minutes-of-tgax-teleconferences-june-2020.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-0849-08-00ax-minutes-of-tgax-teleconferences-june-2020.docx)
* **TGax meeting during July 2020 electronic plenary week (July 14)**
  + [**https://mentor.ieee.org/802.11/dcn/20/11-20-1103-00-00ax-tgax-july-2020-meeting-minutes.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-1103-00-00ax-tgax-july-2020-meeting-minutes.docx)
    1. **Moved by Yasuhiko Inoue, Seconded by Alfred Asterjadhi**
    2. **Discussion – No discussion.**
    3. **Result: Approved by unanimous consent.**

1. **Motion**
   1. [**Doc.11-20-1029**](https://mentor.ieee.org/802.11/dcn/20/11-20-1029-03-00ax-phy-capability-he-mu-ppdu-rx-max-nhe-ltf-proposal.docx)**, “SA1 Miscellaneous CR,” by Youhan Kim (Qualcomm)**
      1. Yan presented the changes from the previous version of the document discussed in the last teleconference.
      2. Discussion
         1. A participant appreciated the changes from the previous version and expressed his support for this proposal.
         2. There were editorial changes suggested.
         3. A member is still not understand why this new field is needed.
      3. **PHY Motion #216: Move to accept text changes in doc 11-20/1029r4 and add to the TG draft specification.**
         1. **Moved by Yan Zhang, Seconded by Hongyuan Zhang**
         2. **Discussion – no discussion**
         3. **Result: Approved by unanimous consent.**
   2. [**Doc.11-20-1022**](https://mentor.ieee.org/802.11/dcn/20/11-20-1022-04-00ax-11ax-d6-0-comment-resolution-of-misc-cids.docx)**, “11ax D6.0 comment resolution of misc CIDs,” by Liwen Chu (NXP).**
      1. Liwen presented updates from the previous version based on 11-20-1022-04.
      2. Discussion
         1. CID 24565: A member suggested editorial changes. 🡪 r5 was created.
         2. CID 24403:
            1. The Single-TID BlockAck is also referred to.
            2. There was a comment that a MU-BAR does have preferred AC field and need more discussion. As a result, CID 24403
      3. **CR Motion #1074: Move to accept resolutions to CIDs 24381, 24389, 24470, 24565 in doc 11-20/1022r5.**
         1. **Moved by Liwen Chu, Seconded by Alfred Asterjadhi**
         2. **Discussion – no discussion**
         3. **Result: Approved with unanimous consent.**
      4. Next Step: Further offline work to resolve CID 24403.
2. **CR submissions**
   1. **Osama Aboul-Magd (Huawei Technologies) presented “Resolutions to Miscellaneous CIDs” proposal,” based on the submission** [**doc.11-20-0912**](https://mentor.ieee.org/802.11/dcn/20/11-20-0912-03-00ax-resolutions-to-miscellaneous-cids.docx)**.**
      1. Summary
         1. Resolutions for the comments with following CIDs related to the IEEE 802.11ax D6.0 are proposed.
            1. CIDs: 24237, 24241, 24566, and 24567
         2. The group had further discussion on CID 24566 and 24567.
      2. Discussion
         1. A participant commented that the resolution claims there is a need but, does not justify that claim. It's not clear which 20M subchannels the STA reports on. Although there is a related text in clause 9 but, the actual behavior is not specified.
         2. Another participant was confused by the discussion and would like to have more time to think about the issue.
      3. Next Step
         1. Need more feedback from the members.
3. **Review the remaining comments**
   1. Robert Stacey (Intel), the TGax technical editor, has sent out current CR status by email on July 16th.
   2. The plan is to finish current round of comment resolution by the end of this month.
   3. The TGax chairperson encouraged the assignee to submit proposed resolutions as soon as possible.
4. **AoB**
   1. No other business to conduct during this teleconference.
5. **Adjournment**
   1. TGax CRC teleconference on July 21st, 2020 has adjourned @ 18:22 (ET).

**Thursday, July 23rd, 2020, TGax CRC Teleconference (10:00 AM - 13:00 ET)**

1. **The meeting called to order at 10:02 AM (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax chairperson and secretary.
   2. The agenda document 20/0538r51 is the working document (revision 50 is on the server).
2. **Attendees**
   1. Aboul-Magd, Osama (Huawei Technologies)
   2. Adachi, Tomoko (Toshiba)
   3. An, Song-Haur (Independent)
   4. Asterjadhi, Alfred (Qualcomm)
   5. Au, Kwok Shum (Huawei Technologies)
   6. Bei, Jianwei (NXP Semiconductors)
   7. Cao, Rui (NXP Semiconductors)
   8. Chen, Xiaogang (Intel)
   9. Chu, Liwen (NXP Semiconductors)
   10. Derham, Thomas (Broadcom)
   11. Dong, Xiadong (Xiaomi)
   12. Duan, Ruchen (Samsung)
   13. Erceg, Vinko (Broadcom)
   14. Grandhe, Niranjan (NXP Semiconductors)
   15. Hamilton, Mark (CommScope/Ruckus)
   16. Hervieu, Lili (CableLabs)
   17. Huang, Po-Kai (Intel)
   18. Inoue, Yasuhiko (NTT)
   19. Kandala, Srinivas (Samsung)
   20. Kim, Youhan (Qualcomm)
   21. Kim, Youn-Kwan (Catholic University of Korea)
   22. Kneckt, Jarkko (Apple)
   23. Kwon, Young Hoon (NXP Semiconductors)
   24. Lee, Wookbong (Samsung)
   25. Li, Yunbo (Huawei Technologies)
   26. Lindskog, Erik (Samsung)
   27. Liu, Jianhan (MediaTek)
   28. Lou, Hui-Ling (NXP Semiconductors)
   29. Pare, Thomas (MediaTek)
   30. Patil, Abhishek (Qualcomm)
   31. Petrick, Albert (InterDigital)
   32. Rison, Mark (Samsung)
   33. Rosdahl, Jon (Qualcomm)
   34. Roy, Sayak (NXP Semiconductors)
   35. Schelstraete, Sigurd (Quantenna)
   36. Srinivasa, Sudhir (NXP Semiconductors)
   37. Stacey, Robert (Intel)
   38. Stanley, Dorothy (HPE Aruba)
   39. Suh, Jung Hoon (Huawei Technologies)
   40. Sun, Bo (ZTE)
   41. Viger, Pascal (Canon Research)
   42. Wentink, Menzo (Qualcomm)
   43. Wu, Tianyu (Apple)
   44. Xin, Yan (Huawei Technologies)
   45. Yang, Rui (InterDigital)
   46. Yi, Yongjiajohn (Futurewei Technologies)
   47. Yu, Jian Ross (Huawei Technologies)
   48. Yu, Mao (NXP Semiconductors)
   49. Zhang, Hongyuan (NXP Semiconductors)
   50. Zhang, Yan (NXP Semiconductors)
   51. Zheng, Xiayu (NXP Semiconductors)
   52. Zou, Tristan (Qualcomm)
3. **Agenda Setting**
   1. Proposed agenda for the TGax CRC teleconference on July 23rd, 2020.
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Attendance Reminder – Please record your attendance on IMAT (imat.ieee.org)
      4. Puncturing discussion
         1. Revisit 24194 resolution
         2. <https://mentor.ieee.org/802.11/dcn/20/11-20-0497-09-00ax-misc-cr-on-d6-0.doc>
         3. <https://mentor.ieee.org/802.11/dcn/20/11-20-0618-03-00ax-cr-for-cid-24101-preamble-puncture.docx> - Lili Hervieu
      5. CR Submissions
         1. [https://mentor.ieee.org/802.11/dcn/20/11-20-1121-00-00ax-misc-cids.xlsx](https://mentor.ieee.org/802.11/dcn/20/11-20-0912-03-00ax-resolutions-to-miscellaneous-cids.docx) - Laurent Cariou
         2. <https://mentor.ieee.org/802.11/dcn/20/11-20-0913-00-00ax-twt-wide-range.docx> - Laurent Cariou
         3. <https://mentor.ieee.org/802.11/dcn/20/11-20-0665-02-00ax-comment-resolution-on-mibs-and-pics.docx> - Edward Au - r3 is to be uploaded.
         4. <https://mentor.ieee.org/802.11/dcn/20/11-20-1129-00-00ax-cids-24211-24212.docx> - Sigurd Schelstraete
         5. <https://mentor.ieee.org/802.11/dcn/20/11-20-1127-00-00ax-he-stf-equation-correction-for-he-tb-ppdu.docx> - Yan Zhang
         6. <https://mentor.ieee.org/802.11/dcn/20/11-20-1128-00-00ax-resolution-for-cid-24040.docx> - Abhishek Patil
      6. AoB
      7. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda.
      1. Discussion – No discussion
      2. **The agenda for TGax CRC teleconference on July 23rd, 2020 was approved.**
4. **IEEE 802 and 802.11 IPR policy and procedure**
   1. Patent Policy:
   2. Participants have a duty to inform the IEEE - done.
      * Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
      * Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims
   3. 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.
         1. **No potentially essential patent reported.**
   4. Other guidelines for IEEE WG meetings – done
   5. Patent-related information – 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. **Announcement**
   1. Attendance @ imat.ieee.org. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
6. **Puncturing Discussion**
   1. **Joss Jian Yu (Huawei Technologies) presented “Misc CR on D6.0,” based on the submission** [**doc.11-20-497-09**](https://mentor.ieee.org/802.11/dcn/20/11-20-0497-09-00ax-misc-cr-on-d6-0.doc)**.**
      1. Summary
         1. Ross presented updates from the previous version.
      2. Discussion
         1. Main difference from Lili’s proposal is that puncturing in primary 80 MHz is not allowed. A participant is concerned by that.
         2. An accurate notification of which 20 MHz channel is punctured in primary 80 is desired.
   2. **Lili Hervieu presented (CableLabs) presented “Proposed Resolution for CID 24101, 24105, 24106, 24107,” based on the submission** [**doc.11-20-0618-03**](https://mentor.ieee.org/802.11/dcn/20/11-20-0618-03-00ax-cr-for-cid-24101-preamble-puncture.docx)**.**
      1. Summary
         1. Lili presented the latest version of the doc.11-20-0618 (r3).
      2. Discussion
         1. The group discussed the limitation of 20 MHz and 40 MHz channel puncturing. There was a proposal to amend Lili’s proposal to allow no puncturing in primary 80.
         2. Lili wanted much tighter spectrum mask.
         3. The TGax chair proposed straw polls for each of two proposals. If neither of them achieved 75% support, the comment should be rejected.
   3. **Straw Polls**
      1. **Straw Poll #1: Do you agree with the proposed resolutions to CIDs 24105, 24106, 24107 in doc 11-20/0497r10?**
         1. **Result: Y/N/A = 15/17/4**
      2. **Straw Poll #2: Do you agree with the proposed resolutions to CIDs 24101, 24105, 24106, 24107 in doc 11-20/0618r3 with the modifications to allow no puncturing on the primary 80 for the value of 7 for the Bandwidth field in HE-SIG-A?**
         1. **Result: Y/N/A = 21/8/9**
   4. **Next Step**
      1. Lili asked for one more week for offline discussion. The plan is to conclude the discussion on next Tuesday.
   5. **Joss Jian Yu (Huawei Technologies) presented “Misc CR on D6.0,” based on the submission doc.11-20-497-10.**
      1. **Summary**
         1. The CID 24194 which was discussed and the resolution was approved on April 8th was revisited.
      2. **Discussion**
         1. A member commented that the bandwidth should also be described. 🡪 The relevant text was updated.
      3. **CR Motion #1077: Move to approve resolution to CID 24194 in doc 11-20/0497r11.**
         1. **Moved by Ross Jian Yu, Seconded by Youhan Kim**
         2. **Discussion – no discussion**
         3. **Result: Approved with unanimous consent.**
7. **Submissions**
   1. **Laurent Cariou (Intel) presented “Proposal for TWT Wide Range Parameters,” based on the submission** [**doc.11-20-0913**](https://mentor.ieee.org/802.11/dcn/20/11-20-0913-01-00ax-twt-wide-range.docx)**.**
      1. Summary
         1. This is not a comment resolution. The background is that Current a TWT request can provide only a value for each TWT parameter. Seems to be desirable to specify that the TWT request can also provide a range of values from which the peer STA can chose to select the TWT parameters.
         2. Laurent went through the changes from previous version.
      2. Discussion
         1. A member asked for some editorial changes.
         2. A participant commented that there is a missing element and proposed to add it. The participant also discussed the importance of Stating Time while other parameters are also important.
         3. There was a question if the proposed field is effective for both individual and broadcast TWT. 🡪 The intension was for the individual TWT but, need to look at the broadcast TWT case.
      3. Next Step
         1. Need more offline work..
   2. **Laurent Cariou (Intel) presented “Misc CIDs,” based on the submission** [**doc.11-20-1121**](https://mentor.ieee.org/802.11/dcn/20/11-20-1121-00-00ax-misc-cids.xlsx)**.**
      1. Summary
         1. Resolutions for the two comments with CIDs 24116 and 24459 are proposed.
      2. Discussion
         1. CID 24459: The reason for rejection saying “the resolution proposed here did not receive sufficient support” may not be valid.
      3. Next Step
         1. Need more offline works.
   3. **Edward Au (Huawei Technologies) presented “Comment resolution on MIBS and PICS,” based on the submission** [**doc.11-20-0665**](https://mentor.ieee.org/802.11/dcn/20/11-20-0665-03-00ax-comment-resolution-on-mibs-and-pics.docx)**.**
      1. Summary
         1. Edward presented the proposed resolutions for the remaining comments.
         2. There are additional CIDs:
            1. 24209, 24411, 24412, 24538, 24443, 24445
      2. Discussion
         1. CID 24359: This comment related to the puncturing discussion.
      3. Next Step
         1. Discussion on CID 24359 which is related to the puncturing discussion.
   4. **Sigurd Schelstraete (Quantenna Communications) presented “CIDs 24211, 24212,” based on the submission** [**doc.11-20-1129**](https://mentor.ieee.org/802.11/dcn/20/11-20-1129-01-00ax-cids-24211-24212.docx)**.**
      1. Summary
         1. Resolutions for the comments with CIDs 24211 and 24212 are proposed.
         2. Time was up before the end of presentation,
      2. Next Step
         1. Sigurd to continue his presentation during the next teleconference.
8. **AoB**
   1. No other business to conduct during this teleconference.
9. **Adjournment**
   1. TGax CRC teleconference on July 23rd, 2020 has adjourned @ 23:00 (ET)..

**Tuesday, July 28th, 2020, TGax CRC Teleconference (10:00 AM - 13:00 ET)**

1. **The meeting called to order at 10:02 AM (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax chairperson and secretary.
   2. The agenda document 20/0538r53 is the working document (revision 52 is on the server).
2. **Attendees**
   1. Aboul-Magd, Osama (Huawei Technologies)
   2. An, Song-Haur (Independent)
   3. Ansley, Carol (CommScope)
   4. Asterjadhi, Alfred (Qualcomm)
   5. Au, Kwok Shum (Huawei Technologies)
   6. Chu, Liwen (NXP Semiconductors)
   7. Coffey, John (RealTek)
   8. Dong, Xiadong (Xiaomi)
   9. Hedayat, Ahmadreza (Charter Communications)
   10. Hervieu, Lili (CableLabs)
   11. Huang, Po-Kai (Intel)
   12. Inoue, Yasuhiko (NTT)
   13. Kandala, Srinivas (Samsung)
   14. Kim, Jeongki (LG Electronics)
   15. Kim, Youhan (Qualcomm)
   16. Kneckt, Jarkko (Apple)
   17. Lee, Wookbong (Samsung)
   18. Ozbakis, Basak (VESTEL)
   19. Patil, Abhishek (Qualcomm)
   20. Petrick, Albert (InterDigital)
   21. Ramesh, Sridhar (Maxlinear)
   22. Rison, Mark (Samsung)
   23. Rosdahl, Jon (Qualcomm)
   24. Schelstraete, Sigurd (Quantenna)
   25. Smith, Luther (CableLabs)
   26. Viorel, Dorin (CableLabs)
   27. Yang, Rui (InterDigital)
   28. Yi, Yongjiajohn (Futurewei Technologies)
   29. Yu, Jian Ross (Huawei Technologies)
   30. Zhang, Yan (NXP Semiconductors)
3. **Agenda Setting**
   1. Proposed agenda for the TGax CRC teleconference on July 28th, 2020.
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Attendance Reminder – Please record your attendance on IMAT (imat.ieee.org)
      4. Motion
         1. [Doc.11-20-0618](https://mentor.ieee.org/802.11/dcn/20/11-20-0618-05-00ax-cr-for-cid-24101-preamble-puncture.docx): CIDs 24101, 24105, 24106, 24107, 24359
         2. [Doc.11-20-0665](https://mentor.ieee.org/802.11/dcn/20/11-20-0665-05-00ax-comment-resolution-on-mibs-and-pics.docx): CIDs 24534, 24531, 24532, 24411, 24412, 24538, 24443, 24444, 24445
         3. [Doc.11-20-1121](https://mentor.ieee.org/802.11/dcn/20/11-20-1121-01-00ax-misc-cids.xlsx): CIDs 24030, 24165, 24166, 24459
         4. [Doc.11-20-1129](https://mentor.ieee.org/802.11/dcn/20/11-20-1129-02-00ax-cids-24211-24212.docx): CIDs 24211, 24212
      5. Submission
         1. <https://mentor.ieee.org/802.11/dcn/20/11-20-0665-05-00ax-comment-resolution-on-mibs-and-pics.docx> - Edward Au
         2. <https://mentor.ieee.org/802.11/dcn/20/11-20-1127-00-00ax-he-stf-equation-correction-for-he-tb-ppdu.docx> - Yan Zhang
         3. <https://mentor.ieee.org/802.11/dcn/20/11-20-1128-00-00ax-resolution-for-cid-24040.docx> - Abhishek Patil
         4. <https://mentor.ieee.org/802.11/dcn/20/11-20-1142-00-00ax-resolution-for-cid-24019.docx> - Abhishek Patil
      6. AoB
      7. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda.
      1. Discussion – No discussion
      2. **The agenda for TGax CRC teleconference on July 28th, 2020 was approved.**
4. **IEEE 802 and 802.11 IPR policy and procedure**
   1. Patent Policy:
   2. Participants have a duty to inform the IEEE - done.
      * Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
      * Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims
   3. 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.
         1. **No potentially essential patent reported.**
   4. Other guidelines for IEEE WG meetings – done
   5. Patent-related information – 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. **Announcement**
   1. Attendance @ imat.ieee.org. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
6. **Submission & Motion**
   1. [**Doc.11-20-0618**](https://mentor.ieee.org/802.11/dcn/20/11-20-0618-05-00ax-cr-for-cid-24101-preamble-puncture.docx)**, “Proposed Resolution for CID 24101, 24105, 24106, 24107, 24359,” by Lili Hervieu (CableLabs)**
      1. Summary
         1. Lili presented updates from the previous version focusing on the preamble puncturing feature.
      2. Discussion
         1. A member appreciated to cover the contents of doc.11-20-497.
         2. The group discussed the preamble puncturing for the 80+80 MHz and 160 MHz cases.
      3. **CR Motion #1078: Move to accept resolutions to CIDs CIDs 24101, 24105, 24106, 24107, 24359 in doc 11-20/0618r5.**
         1. **Moved by Lili Hervieu, Seconded by Youhan Kim.**
         2. **Discussion**
            1. .
         3. **Result: Approved by unanimous consent.**
   2. [**Doc.11-20-1129**](https://mentor.ieee.org/802.11/dcn/20/11-20-1129-02-00ax-cids-24211-24212.docx)**, “CIDs 24211, 24212,” by Sigurd Schelstraete (Quantenna Communications)**
      1. Summary
         1. Sigurd presented updates from the previous version focusing on the preamble puncturing feature.
      2. Discussion
         1. The group discussed missing items of the table B.4.33.2. It will be good to make some arrangement to this table.
      3. **CR Motion #1079: Move to accept resolutions to CIDs CIDs 24101, 24105, 24106, 24107, 24359 in doc 11-20/0618r5.**
         1. **Moved by Sigurd Schelstraete, Seconded by .**
   3. **Doc.11-20-0665, “Comment resolution on MIBS and PICS,” by Edward Au (Huawei Technologies).**
      1. **Summary**
         1. Edward presented the updates from the previous version.
      2. **Discussion**
         1. CID 24209: The group discussed the need to define 6 GHz related quiet time.
      3. **CR Motion #1080: Move to accept resolutions to CIDs 24534, 24531, 24532, 24411, 24412, 24538, 24443, 24444, 24445 in doc11-20/0665r4.**
         1. **Moved by Edward Au, Seconded by Alfred Asterjadhi**
         2. **Discussion – no discussion**
         3. **Result: Approved with unanimous consent.**
   4. **Yan Zhang (NXP Semiconductors) presented “HE-STF Equation Correction for HE TB PPDU,” based on the submission** [**doc.11-20-1127-00**](https://mentor.ieee.org/802.11/dcn/20/11-20-1127-00-00ax-he-stf-equation-correction-for-he-tb-ppdu.docx)**.**
      1. Summary
         1. This is not a comment resolution.
         2. Yan presented the proposed change to current text.
         3. The proposed changes are basically editorial.
      2. Discussion
         1. No discussion.
      3. **PHY Motion #217: Move to accept the text change in doc 11-20/1127r1 and include it in the next revision of the TG draft**
         1. **Moved by Yan Zhang, Seconded by Youhan Kim.**
         2. **Discussion – no discussion.**
         3. **Result: Approved by unanimous consent.**
   5. **Abhishek Patil (Qualcomm) presented “Resolution for CID 24040,” proposal,” based on the submission** [**doc.11-20-1128-00**](https://mentor.ieee.org/802.11/dcn/20/11-20-1128-00-00ax-resolution-for-cid-24040.docx)**.**
      1. Summary
         1. Resolution for the comment with CID 24040 related to the Multiple BSSID Configuration element defined in the IEEE 802.11ax D6.0 is proposed.
      2. Discussion
         1. No discussion.
      3. **CR Motion #1081: Move to accept resolution to CID 24040 in doc 11-20/1128r0**
         1. **Moved by Abhishek Patil, Seconded by Alfred Asterjadhi**
         2. **Discussion – no discussion**
         3. **Result: Approved by unanimous consent.**
   6. **Abhishek Patil (Qualcomm) presented “Resolution for CID 24019,” based on the submission** [**doc.11-20-1142-00**](https://mentor.ieee.org/802.11/dcn/20/11-20-1142-00-00ax-resolution-for-cid-24019.docx)**.**
      1. Summary
         1. Resolution for the comment with CID 24019 related to the eligible RA-RU of UORA defined in the IEEE 802.11ax D6.0 is proposed.:
      2. Discussion
         1. The group discussed which frame carry the UORA Parameter Set element. 🡪 Beacon and Probe Response frames. A trigger frame does not carry the element.
         2. A member commented that the note in the proposed text should be normative. He also mentioned that the concept of eligible RA-RU is confusing.
      3. Next Step
         1. Time is up. To be revisited during the next teleconference.
7. **Adjournment**
   1. TGax CRC teleconference on July 28th, 2020 has adjourned @ 13:00 (ET)..

**Thursday, July 30th, 2020, TGax CRC Teleconference (20:00 - 23:00 ET)**

1. **The meeting called to order at 20:01 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
   1. Introduction of TGax chairperson and secretary.
   2. The agenda document 20/0538r54 is the working document.
2. **Attendees**
   1. Aboul-Magd, Osama (Huawei Technologies)
   2. Adachi, Tomoko (Toshiba)
   3. An, Song-Haur (Independent)
   4. Asterjadhi, Alfred (Qualcomm)
   5. Chen, Xiaogang (Intel)
   6. Chu, Liwen (NXP Semiconductors)
   7. Coffey, John (RealTek)
   8. Dong, Xiadong (Xiaomi)
   9. Huang, Po-Kai (Intel)
   10. Inoue, Yasuhiko (NTT)
   11. Kim, Youhan (Qualcomm)
   12. Kneckt, Jarkko (Apple)
   13. Patil, Abhishek (Qualcomm)
   14. Petrick, Albert (InterDigital)
   15. Rosdahl, Jon (Qualcomm)
   16. Seok, Yongho (MediaTek)
   17. Sun, Bo (ZTE)
   18. Yang, Rui (InterDigital)
   19. Yu, Mao (NXP Semiconductors)
   20. Zhang, Yan (NXP Semiconductors)
3. **Agenda Setting**
   1. Proposed agenda for the TGax CRC teleconference on July 30th, 2020.
      1. Call meeting to order
      2. IEEE-SA IPR policy and Procedure
      3. Attendance Reminder – Please record your attendance on IMAT (imat.ieee.org)
      4. Submission and Motion
         1. <https://mentor.ieee.org/802.11/dcn/20/11-20-1123-00-00ax-resolution-for-cid24207.docx> - Jianhan Liu
         2. <https://mentor.ieee.org/802.11/dcn/20/11-20-1063-00-00ax-sa1-cr-mac-miscellaneous.docx> - Yongho Seok
         3. [https://mentor.ieee.org/802.11/dcn/20/11-20-0665-05-00ax-comment-resolution-on-mibs-and-pics.docx](https://mentor.ieee.org/802.11/dcn/20/11-20-0665-02-00ax-comment-resolution-on-mibs-and-pics.docx) - Edward Au - CID 24209
         4. <https://mentor.ieee.org/802.11/dcn/20/11-20-1142-00-00ax-resolution-for-cid-24019.docx> - Abhishek Patil
         5. <https://mentor.ieee.org/802.11/dcn/20/11-20-0717-08-00ax-cr-misc-phy.docx> - Xiaogang Chen
         6. <https://mentor.ieee.org/802.11/dcn/20/11-20-1147-00-00ax-cid-24031.docx> - Jarkko Kneckt
      5. AoB
      6. Adjourn
   2. Chair asked if there is any objection to proceed with this agenda.
      1. Discussion – No discussion
      2. **The agenda for TGax CRC teleconference on July 30th, 2020 was approved.**
4. **IEEE 802 and 802.11 IPR policy and procedure**
   1. Patent Policy:
   2. Participants have a duty to inform the IEEE - done.
      * Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
      * Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims
   3. 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.
         1. **No potentially essential patent reported.**
   4. Other guidelines for IEEE WG meetings – done
   5. Patent-related information – 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. **Announcement**
   1. Attendance @ imat.ieee.org. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
6. **Submission and Motion**
   1. **Jianhan Liu (MediaTek) presented “Resolution for CID 24207,” based on the submission doc.11-20-1123-00.**
      1. Summary
         1. A resolution for the comment with CID 24207 related to the requirement for 1024-QAM constellation error defined in the IEEE 802.11ax D6.0 is proposed.
      2. Discussion
         1. No discussion.
      3. **CR Motion #1082: Move to accept resolution to CID 24207 in doc 11-20/1123r0.**
         1. **Moved by Jianhan Liu, Seconded by Yongho Seok**
         2. **Discussion – no discussion.**
         3. **Result: Approved by unanimous consent.**
   2. **Yongho Seok (MediaTek) presented “SA1 CR MAC Miscellaneous,” based on the submission doc.11-20-1063-00.**
      1. Summary
         1. Resolutions for the comment with CID 24402 and 24465 related to UL MU specification defined in the IEEE 802.11ax D6.0 are proposed.
            1. CID 24402: default value for OCWmin and OCWmax
            2. CID 24465: UL MU Power Capabilities
      2. Discussion
         1. CID 24402: Proposed text is modified based on the comment from a member. 🡪 the document becomes r1.
         2. CID 24465: The group discussed the definition of UL Power Capabilities and confirmed that there is no technical change.
      3. Next Step
         1. The TGax chairperson would like to wait until next Tuesday to run a motion to approve the proposed resolution.
   3. **Abhishek Patil (Qualcomm) presented “Resolution for CID 24019,” based on the submission doc.11-20-1142-01.**
      1. Summary
         1. The submission discussed during the last teleconference was revisited.
            1. CID 24019 relates to the eligible RA-RU.
            2. Basically, a STA does not need to care for the RA-RUs outside the ones assigned to it.
      2. Discussion
         1. No discussion.
      3. **CR Motion #1083: Move to accept resolution to CID 24019 in doc 11-20/1142r1.**
         1. **Moved by Abhishek Patil, Seconded by Alfred Asterjadhi**
         2. **Discussion – no discussion.**
         3. **Result: Approved by unanimous consent.**
   4. **Xiaogang Chen (Intel) presented “CR for MISC. PHY,” based on the submission doc.11-20-0717-08.**
      1. Summary
         1. Resolutions for the remaining CIDs in doc.11-20-0717 are proposed.
            1. CIDs: 24297 and 24037
      2. Discussion
         1. CID 24297: There was a comment that the issue had already been resolved in doc.11-20-0894-03. However, there is additional discussion on the reflector. The TGmd handles the issue of antenna connector/antenna connectors and no change is needed in TGax.
         2. CID 24037: There was a comment that the blocking performance is covered by the requirements of adjacent channel rejection and alternate adjacent channel rejection.
         3. A member referred to a submission for TGmd, doc.11-19-0396.
      3. Next Step
         1. Motion will be on next Tuesday.
   5. **Jarkko Kneckt (Apple) presented “CID 24031 Resolution,” based on the submission doc.11-20-1147-01.**
      1. Summary
         1. A resolution for the comment with CID 24301 related to the 6 GHz PPDU MCS selection specified in the IEEE 802.11ax D6.0 is proposed.
         2. The proposed resolution is REJECTED since the existing minimum rate mechanism provides more precise control.
      2. Discussion
         1. No discussion.
      3. **CR Motion #1084: Move to accept resolution to CID 24031 in doc 11-20/1147r1.**
         1. **Moved by Jarkko Kneckt, Seconded by Abhishek Patil**
         2. **Discussion – no discussion.**
         3. **Result: Approved by unanimous consent.**
7. **AoB**
   1. We are at the end of today’s agenda.
   2. No other business to conduct.
8. **Adjournment**
   1. TGax CRC teleconference on July 30th, 2020 has adjourned @ 20:58 (ET)..