IEEE P802.11
Wireless LANs

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| IEEE 802.11Minutes of TGax CRC Teleconferences June 2020 |
| Date: 2020-06-17 |
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|  |  |  |  |  |

Abstract

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

Revision History:

* R0: Initial version.
	+ Minutes of TGax CRC call on June 2nd, 2020.
* R1: Included the minutes from TGax CRC teleconference on June 4th, 2020.
* R2: Included the minutes from TGax CRC teleconference on June 9th, 2020.
* R3: Included the minutes from TGax CRC teleconference on June 11th, 2020.
* R4: Included the minutes from TGax CRC teleconference on June 16th, 2020.
* R5: Included the minutes from TGax CRC teleconference on June 18th, 2020.

**Tuesday, June 2nd, 2020, TGax CRC Teleconference (10:00 AM - 12:00 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 20/0538r26 is the working document (revision 25 is on the server).
2. **Attendees**
	1. Aboul-Magd, Osama (Huawei Technologies)
	2. Asterjadhi, Alfred (Qualcomm)
	3. Baron, Stephane (Canon)
	4. Cariou, Laurent (Intel)
	5. Chen, Xiaogang (Intel)
	6. Chu, Liwen (NXP)
	7. Coffey, John (RealTek)
	8. Derham, Thomas (Broadcom)
	9. Fischer, Matthew (Broadcom)
	10. Herveu, Lili (CableLabs)
	11. Inoue, Yasuhiko (NTT)
	12. Jones, VK (Qualcomm)
	13. Kim, Youhan (Qualcomm)
	14. Kneckt, Jarkko (Apple)
	15. Petrick, Albert (InterDigital)
	16. Rison, Mark (Samsung)
	17. Sun, Bo (ZTE)
	18. Tian, Bin (Qualcomm)
	19. Yang, Rui (InterDigital)
	20. Yu, Mao (NXP)
	21. Zhang, Yan (NXP)
3. **Agenda Setting**
	1. Proposed agenda for the TGax CRC teleconference on June 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. CR Submissions
			1. <https://mentor.ieee.org/802.11/dcn/20/11-20-0792-00-00ax-crs-on-miscellaneous-phy-cids.docx> - Bin Tian
			2. <https://mentor.ieee.org/802.11/dcn/20/11-20-0833-00-00ax-cr-smoothing.docx> - Ron Porat
			3. <https://mentor.ieee.org/802.11/dcn/20/11-20-0717-07-00ax-cr-misc-phy.docx> - Xiaogang Chen
			4. <https://mentor.ieee.org/802.11/dcn/20/11-20-0822-00-00ax-miscellaneous-6ghz-channelization-cids.docx> - Thomas Derham
		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 June 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. The duration of this conference call is 2 hours.
	2. Attendance @ imat.ieee.org. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
6. **CR submissions**
	1. **Bin Tian (Qualcomm) presented “CRs on Miscellaneous PHY CIDs,” based on the submission doc.11-20-0792-00.**
		1. Summary
			1. Resolution for the comments with following CIDs related to the PHY specification of the IEEE 802.11ax D6.0 are proposed.
				1. CIDs: • 24046, 24502, 24560, 24561.
		2. Discussion
			1. CID 24502: The commenter mentioned that the discussion during the WG letter ballot phase is not valid reason for the rejection since we are in the IEEE-SA ballot phase. 🡪 We can have the same straw poll as we had during the WG letter ballot phase. The group discussed the cases for HEMUBeamformerOptionImplemented is true and HESUBeamformerOptionImplemented is true. As a result of the discussion, the text in the resolution column will be updated.
			2. CID 24561: A participant asked for the reason why some forms of L-STF and L-LTT are still needed even in green field design as described in the resolution column. The answer was that those fields are needed for packet detection and identification of PHY format.
		3. Next Step
			1. Bin will update the document incorporating the result of discussion.
7. **AoB**
	1. No other CR submission is available today.
	2. Chairperson asked for the need for puncturing discussion during the next teleconference (Thusday).
		1. A participant prefers to have the discussion next week.
8. **Adjournment**
	1. TGax CRC teleconference has adjourned @ 10:37 AM (ET).

**Thursday, June 4th, 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 20/0538r27 is the working document (revision 26 is on the server).
2. **Attendees**
	1. Aboul-Magd, Osama (Huawei Technologies)
	2. An, Song-Haur (Independent)
	3. Asterjadhi, Alfred (Qualcomm)
	4. Baron, Stephane (Canon)
	5. Chen, Xiaogang (Intel)
	6. Chu, Liwen (NXP)
	7. Coffey, John (RealTek)
	8. Derham, Thomas (Broadcom)
	9. Fischer, Matthew (Broadcom)
	10. Huang, Po-Kai (Intel)
	11. Inoue, Yasuhiko (NTT)
	12. Kandala, Srinivas (Samsung)
	13. Kim, Jeongki (LG Electronics)
	14. Kim, Youhan (Qualcomm)
	15. Kneckt, Jarkko (Apple)
	16. Kumar, Manish (NXP)
	17. Lu, Kaiying (MediaTek)
	18. Patil, Abhishek (Qualcomm)
	19. Petrick, Albert (InterDigital)
	20. Rison, Mark (Samsung)
	21. Rosdahl, Jon (Qualcomm)
	22. Stacey, Robert (Intel)
	23. Sun, Bo (ZTE)
	24. Wang, Xiaofei (InterDigital)
	25. Wentink, Menzo (Qualcomm)
	26. Yang, Rui (InterDigital)
3. **Agenda Setting**
	1. Proposed agenda for the TGax CRC teleconference on June 4th, 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. CR Submissions
			1. <https://mentor.ieee.org/802.11/dcn/20/11-20-0833-00-00ax-cr-smoothing.docx> - Ron Porat
			2. <https://mentor.ieee.org/802.11/dcn/20/11-20-0851-00-00ax-comment-resolution-related-to-qtp.docx> - Kaiying Lu
			3. <https://mentor.ieee.org/802.11/dcn/20/11-20-0717-07-00ax-cr-misc-phy.docx> - Xiaogang Chen
		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 June 4th, 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. The chairperson reminded to record attendance @ imat.ieee.org.
	2. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
6. **CR submissions**
	1. **Kaiying Lu (MediaTek) presented “Proposed resolution for CIDs Related to Quiet Time Period,” based on the submission doc.11-20-0851-00.**
		* 1. Summaryｇclauses 26.17.5, B.4.33.1, and C.3 of the IEEE 802.11ax D6.0 with following CIDs are proposed.
				1. CIDs: 24016, 24158, 24159, 24160
		1. Discussion
			1. CID 24158: Kaiying added a new entry in B.4.33.1 (PICS – HE MAC features).
			2. CID 24160: (Re: dot11QTPOptionActivated) A member commented that he is not sure whether “<something>Activated” is correct naming of MIB entry. Need to check with ARC SC. The group discussed requirement related to Quiet Time Period setup.
		2. Next Step
			1. Kaiying to have offline discussion and update the submission. The plan is to approve the proposed resolutions during the teleconference on next Thursday.
	2. **Xiaofei Wang (InterDigital) presented “CR for BSS Color Related CIDs,” based on the submission doc.11-20-0852-03.**
		1. Summary
			1. Resolutions for the comments related to BSS Color defined in the IEEE 802.11ax D6.0 with following CIDs are proposed.
				1. CIDs: 24375 and 24376.
		2. Discussion
			1. The BSS Color related CIDs were resolved in doc.11-20-0316, however, the CIDs 24375 and 24376 are not included.
			2. CID 24376: Some offline work was suggested.
		3. Next Step
			1. There will be a motion to approve the proposed resolutions on Thursday next week.
	3. **Youhan Kim (Qualcomm) presented “SA1 PHY CR,” based on the submission doc.11-20-0862-01.**
		1. Summary
			1. Resolutions for the comments related to PHY specification defined in the IEEE 802.11ax D6.0 with following CIDs are proposed.
				1. CIDs: 24447, 24544, 24448, 24476, 24188, 24190, 24263, 24264, 24279, 24519
		2. Discussion
			1. There were some discussion but basically all the resolutions seems to be good.
		3. Next Step
			1. There will be a motion to approve the proposed resolutions on Thursday next week.
7. **Updates on CR submission**
	1. **Doc.11-20-0717, “CR for MISC. PHY,” by Xiaogang Chen (Intel)**
		1. Summary
			1. Xiaogang presented the updates on remaining CIDs in 20/717.
				1. Remaining CIDs: 24297, 24326 and 24407
		2. Discussion
			1. The group discussed consistency between the proposed change and HE-SIG-A1 related spec.
		3. Next Step
			1. There will be a motion to approve the proposed resolutions on Thursday next week.
	2. **Doc.11-20-0581, “CR for BSS Color Related CIDs,” by Xiaofei Wang (InterDigital)**
		1. Summary
			1. Xiaofei updated the doc.11-20-0581 during this teleconference.
		2. Discussion
			1. A participant discussed possibility of extension/further change of BSS Color related spec.
		3. Next Step
			1. Xiafei to have offline discussion. There will be a motion to approve the proposed resolutions on Thursday next week.
8. **AoB**
	1. No other business for today.
9. **Adjournment**
	1. TGax CRC teleconference on June 4th, 2020 has adjourned @ 11:13 AM (ET).

**Tuesday, June 9th, 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 20/0538r28 is the working document (revision 27 is on the server).
2. **Attendees**
	1. Aboul-Magd, Osama (Huawei Technologies)
	2. Asterjadhi, Alfred (Qualcomm)
	3. Cao, Rui (NXP)
	4. Chen, Xiaogang (Intel)
	5. Chu, Liwen (NXP)
	6. Derham, Thomas (Broadcom)
	7. Hamilton, Mark (CommScope)
	8. Huang, Po-Kai (Intel)
	9. Inoue, Yasuhiko (NTT)
	10. Kandala, Srinivas (Samsung)
	11. Kim, Youhan (Qualcomm)
	12. Kneckt, Jarkko (Apple)
	13. Liu, Jianhan (MediaTek)
	14. Lu, Kaiying (MediaTek)
	15. Petrick, Albert (InterDigital)
	16. Porat, Ron (Broadcom)
	17. Rison, Mark (Samsung)
	18. Schelstraete, Sigurd (Quantenna)
	19. Segev, Jonathan (Intel)
	20. Seok, Yongho (MediaTek)
	21. Stacey, Robert (Intel)
	22. Tian, Bin (Qualcomm)
	23. Wang, Xiaofei (InterDigital)
	24. Yang, Rui (InterDigital)
	25. Zhang, Yan (NXP)
3. **Agenda Setting**
	1. Proposed agenda for the TGax CRC teleconference on June 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. Motion
			1. Doc.11-20-0792: CIDs 24046, 24502, 24560, 24561
			2. Doc.11-20-0851: CIDs 24016, 24158, 24159, 24160
			3. Doc.11-20-0852: CIDs 24375, 24376
		5. CR Submissions
			1. <https://mentor.ieee.org/802.11/dcn/20/11-20-0833-00-00ax-cr-smoothing.docx> - Ron Porat
			2. <https://mentor.ieee.org/802.11/dcn/20/11-20-0857-00-00ax-sa-ballot-cr-for-ftm-related.docx> - Jonathan Segev
			3. <https://mentor.ieee.org/802.11/dcn/20/11-20-0874-00-00ax-some-phy-cids-for-d6-0.docx> **- Jianhan Liu**
		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 June 9th, 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. The duration of this conference call is 2 hours.
	2. Attendance @ imat.ieee.org. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
6. **Motion**
	1. **Doc.11-20-0792-01, “CRs on Miscellaneous PHY CIDs,” by Bin Tian (Qualcomm).**
		1. Summary
			1. Bin presented the updates from previous version of the document.
				1. CIDs: • 24046, 24502, 24560, 24561.
		2. Discussion
			1. CID 24502: A member is hot happy since there are two places where the spec related to this comment are described. However it will need a huge work to re-organize the draft and Bin proposed to keep current style.
		3. **CR Motion #1050: Move to accept resolutions to CIDs 24046, 24502, 24560, 24561 in doc 11-20/0792r1.**
			1. **Moved by Bin Tian, Seconded by Youhan Kim.**
			2. **Discussion – no discussion**
			3. **Result: Approved by unanimous consent.**
	2. **Doc.11-20-0851-03, “Proposed resolution for CIDs Related to Quiet Time Period,” by Kaiying Lu (MediaTek).**
		1. Summary
			1. Kaiying presented the updates from previous version of the document.
				1. CIDs: 24016, 24158, 24159, 24160.
		2. Discussion
			1. CID 24158 relates to the PICS. Kaiying consulted with experts to confirm the proposed changes are good.
		3. **CR Motion #1051: Move to accept resolutions to CIDs 24016, 24158, 24159, 24160 in doc 11-20/0851r3.**
			1. **Moved by Kaiying Lu, Seconded by Jarkko Kneckt.**
			2. **Discussion – no discussion**
			3. **Result: Approved by unanimous consent.**
	3. **Doc.11-20-0852-05, “CR for BSS Color Related CIDs,” by Xiaofei Wang (InterDigital).**
		1. Summary
			1. Xiaofei presented the updates from previous version of the document.
				1. CIDs: 24375, 24376.
		2. Discussion
			1. A member proposed minor change to the proposed text. 🡪 Xiaofei updated the text.
		3. **CR Motion #1052: Move to accept resolutions to CIDs 24375 and 24376 in doc 11-20/0852r5.**
			1. **Moved by Xiaofei Wang, Seconded by Rui Yang.**
			2. **Discussion – no discussion**
			3. **Result: Approved by unanimous consent.**
7. **CR submissions**
	1. **Jonathan Segev (Intel) presented “SA Ballot Comments Resolutions for FTM CIDs,” based on the submission doc.11-20-0857-00.**
		1. Summary
			1. Resolutions for the comments on FTM related spec defined in the IEEE 802.11ax D6.0 with following CIDs are proposed.
				1. CIDs: • 24487, 24489.
		2. Discussion
			1. CID 24487: A member commented that the first sentence in the resolution column saying that “this is a duplicate of LB 244 CID 22322 receiving same resolution” may not be appropriate since this is the initial SA ballot. Also the member mentioned that the comment should be accepted. This CID needs more time to be resolved.
			2. CID 24489: Although Jonathan mentioned that this is the same comment, a member commented that the proposed change is different.
		3. Next Step
			1. Jonathan will update the document after offline discussion.
	2. **Ron Porat (Broadcom) presented “CR – Smoothing,” based on the submission doc.11-20-0833-00.**
		1. Summary
			1. Resolution for the comment with CID 24508 on the smoothing feature defined in the IEEE 802.11ax D6.0 is proposed.
		2. Discussion
			1. CID 24487: A member questioned the benefit of having this feature. 🡪 Ron replied that smoothing actually has some benefit for lower MCSes. Ros position is supported by another PHY expert.
		3. Next Step
			1. There will be a motion to approve the proposed resolution in next teleconference.
	3. **Jianhan Liu (MediaTek) presented “Some PHY CIDs for D6.0,” based on the submission doc.11-20-0874-01.**
		1. Summary
			1. Resolutions for the comment on the PHY specification of the IEEE 802.11ax D6.0 are proposed.
				1. CIDs: 24091，24185, 24186, 24300, 24301, 24500, 24501.
		2. Discussion
			1. CID 24185: Regarding the STF, a member commented that it would be better to have a separate statement for preamble puncturing mode and continuous mode. The group had related discussion.
			2. CID 24186: A member mentioned that he was confused with the proposed text. The group discussed how to clarify the spec text.
			3. CID 24300, 24301: Transferred to another volunteer (Mark Rison).
			4. CID 24500, 24501: This CID is also transferred to Mark Rison.
		3. Next Step
			1. Jianhan to update the text incorporating the result of discussion. Mark Rison to make proposals on the transferred comments.
8. **AoB**
	1. We only have three minutes.
	2. There will be TGax CRC teleconference on Thursday.
9. **Adjournment**
	1. TGax CRC teleconference on June 9th, 2020 has adjourned @ 18:58 (ET).

**Thursday, June 11th, 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 20/0538r30 is the working document (revision 29 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. Chen, Xiaogang (Intel)
	6. Derham, Thomas (Broadcom)
	7. Ghosh, Chittabrata (Intel)
	8. Hamilton, Mark (CommScope)
	9. Huang, Po-Kai (Intel)
	10. Inoue, Yasuhiko (NTT)
	11. Jones, VK (Qualcomm)
	12. Kim, Youhan (Qualcomm)
	13. Kneckt, Jarkko (Apple)
	14. Lou, Hui-Ling (NXP)
	15. Patil, Abhishek (Qualcomm)
	16. Petrick, Albert (InterDigital)
	17. Rison, Mark (Samsung)
	18. Rosdahl, Jon (Qualcomm)
	19. Schelstraete, Sigurd (Quantenna)
	20. Seok, Yongho (MediaTek)
	21. Yang, Rui (InterDigital)
	22. Zhang, Yan (NXP)
3. **Agenda Setting**
	1. Proposed agenda for the TGax CRC teleconference on June 11th, 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.11-20-0792: CIDs 24046, 24502, 24560, 24561
		5. CR Submissions
			1. <https://mentor.ieee.org/802.11/dcn/20/11-20-0884-00-00ax-resolution-for-cids-related-to-uora.docx> - Chittabrata Ghosh
		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 June 11th, 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.

1. **CR Status**
	1. The group reviewed comment resolution status based on the email sent by Robert Stacey, the TGax technical editor, the day before.
2. **Motion**
	1. **Doc.11-20-0862-02, “SA1 PHY CR,” by Youhan Kim (Qualcomm).**
		1. Summary
			1. Youhan presented the updates from previous version of the document.
				1. CIDs: 24375, 24376.
		2. Discussion
			1. CID 24279: A participant identified an issue and he would submit a comment in the next round of ballot. Another member commented on the terminology of BSS Bandwidth which Youhan is aware of.
			2. CID 24264: The group discusses the PE field.
		3. **CR Motion #1053: Move to accept resolutions to CIDs 24447, 24544, 24448, 24476, 24188, 24190, 24263, 24264, 24519 in doc 11-20/0862r3.**
			1. **Moved by Youhan Kim, Seconded by Abhishek Patil.**
			2. **Discussion – no discussion**
			3. **Result: Approved by unanimous consent.**
		4. Next Step
			1. Youhan to work on CID 24279.
3. **CR submissions**
	1. **Chttabrata Ghosh (Intel) presented “Resolution for CIDs Related to UORA,” based on the submission doc.11-20-0884-01.**
		1. Summary
			1. Resolutions for the comments on UORA defined in the IEEE 802.11ax D6.0 with following CIDs are proposed.
				1. CIDs: 24018, 24019, 24391, 24392.
		2. Discussion
			1. CID 24019: This CID is deferred. A participant send a suggestion y email.
			2. CID 24391: A participant commented that he once took a look at the comment and the suggested text is necessary.
			3. CID 24392: Chitto will update the resolution based on the discussion of CID 24391.
		3. Next Step
			1. There will be a motion to approve the proposed resolutions next week.
4. **AoB**
	1. **Discussion on the remaining CID in doc.11-20-0862.**
		1. Youhan updated his submission 11-20-0862 “SA1 PHY CR” during the teleconference. Now, the document is rev 5.
		2. Discussion
			1. CID 24279 (Re: INACTIVE\_SUBCHANNELS): Now the resolution looks good.
		3. **CR Motion #1054: Move to accept resolution to CID 24279 in doc 11-20/0862r5.**
			1. **Moved by Youhan Kim, Seconded by Abhishek Patil**
			2. **Discussion – no discussion**
			3. **Result: Approved with unanimous consent.**
	2. We only have three minutes.
	3. There will be TGax CRC teleconference on Tuesday.
5. **Adjournment**
	1. TGax CRC teleconference on June 11th, 2020 has adjourned @ 21:06 (ET).

**Tuesday, June 16th, 2020, TGax CRC Teleconference (10:00 – 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 20/0538r31 is the working document (revision 30 is on the server).
2. **Attendees**
	1. Aboul-Magd, Osama (Huawei Technologies)
	2. Asterjadhi, Alfred (Qualcomm)
	3. Boldy, David (Broadcom)
	4. Chen, Xiaogang (Intel)
	5. Chu, Liwen (NXP)
	6. Coffey, Sean (RealTek)
	7. Huang, Po-Kai (Intel)
	8. Inoue, Yasuhiko (NTT)
	9. Kim, Youhan (Qualcomm)
	10. Liu, Yong (Apple)
	11. Patil, Abhishek (Qualcomm)
	12. Petrick, Albert (InterDigital)
	13. Rison, Mark (Samsung)
	14. Rosdahl, Jon (Qualcomm)
	15. Schelstraete, Sigurd (Quantenna)
	16. Stacey, Robert (Intel)
	17. Wentink, Menzo (Qualcomm)
	18. Yang, Rui (InterDigital)
	19. Zhang, Yan (NXP)
3. **Agenda Setting**
	1. Proposed agenda for the TGax CRC teleconference on June 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. Status of Comment Resolution
		5. Minutes Approval
		6. CR Motion
			1. Doc.11-20-0833: CIDs 24508
		7. CR Submissions
			1. <https://mentor.ieee.org/802.11/dcn/20/11-20-0818-01-00ax-resolution-for-cid-24114.docx> - Abhishek Patil
			2. <https://mentor.ieee.org/802.11/dcn/20/11-20-0894-00-00ax-sa1-phy-cr-part-2.docx> - Youhan Kim
		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 June 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. **CR Status**
	1. The group reviewed comment resolution status.
	2. We still have to resolve hundreds of CIDs. The chairperson asked the assignee to resolve comments.
7. **Motion for Minutes Approval**

* 1. **Motion: Move to approve minutes of TG teleconferences in doc: <https://mentor.ieee.org/802.11/dcn/20/11-20-0704-08-00ax-minutes-of-tgax-teleconferences-may-2020.docx>**
* **11-20-0704-08 contains minutes from TGax CRC teleconference held in May 2020.**
	+ 1. **Moved by Yasuhiko Inoue, Seconded by Alfred Asterjadhi**
		2. **Discussion – no discussion**
		3. **Result: Approved by unanimous consent.**
1. **CR Motion**
	1. **Doc.11-20-0833-00, “CR – Smoothing,” by Ron Porat (Broadcom).**
		1. Summary
			1. The author of the submission is not on the call, but the document has not been changed since we discussed last time.
				1. CIDs: 24508.
		2. Discussion
			1. A member commented that we can approve the proposed resolution.
		3. **CR Motion #1055: Move to accept resolution to CIDs 24508 in doc 11-20/0833r0.**
			1. **Moved by Youhan Kim, Seconded by Alfred Asterjadhi.**
			2. **Discussion**
				1. **A member mentioned he would like to abstain for more time to review.**
			3. **Result: Y/N/A = 15/0/1, motion passes.**
2. **CR submissions**
	1. **Abhishek Patil (Qualcomm) presented “Resolution for CID 24114,” based on the submission doc.11-20-0818-03.**
		1. Summary
			1. Resolution for the comment with CID 24114 related to NRN element defined in the IEEE 802.11ax D6.0 is proposed.
				1. Abhi explained the resolution and proposed text changes.
		2. Discussion
			1. A member asked if we need to change related MLME primitives.
		3. Next Step
			1. There will be a motion to approve the proposed resolutions next week.
	2. **Youhan Kim (Qualcomm) presented “SA1 PHY CR Part 2,” based on the submission doc.11-20-0894-01.**
		1. Summary
			1. Resolution for the comment with following CIDs related to PHY specifications defined in the IEEE 802.11ax D6.0 are proposed.
				1. CIDs: 24191, 24192, 24291, 24414, 24415, 24416, 24477, 24205, 24206, 24327.
		2. Discussion
			1. CID 24291: (Re: eqn 27-125) A member commented that a subtraction between values with different unit does not make sense. 🡪 Youhan updated the related text. Another member commented that his resolution related to the antenna connector may have some relation with this CID.
			2. CID 24205: A member commented on MCS 7 and TxPWR.
			3. CID 24206: There was a comment that “upper” is not a correct term to indicate a frequency region. The group also discussed combination of non-punctured spectrum mask and punctured spectrum mask.
		3. Next Step
			1. There will be a motion to approve the proposed resolutions next week.
3. **AoB**
	1. We are at the end of our agenda for today.
	2. Next teleconference is on Thursday.
4. **Adjournment**
	1. TGax CRC teleconference on June 16th has adjourned @ 11:13 AM (ET).

**Thursday, June 18th, 2020, TGax CRC Teleconference (10:00 – 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 20/0538r32 is the working document (revision 30 is on the server).
2. **Attendees**
	1. Aboul-Magd, Osama (Huawei Technologies)
	2. An, Song-Haur (Independent)
	3. Asterjadhi, Alfred (Qualcomm)
	4. Baron, Stephane (Canon Research)
	5. Boldy, David (Broadcom)
	6. Chen, Xiaogang (Intel)
	7. Chu, Liwen (NXP)
	8. Coffey, John (RealTek)
	9. Derham Thomas (Broadcom)
	10. Huang, Po-Kai (Intel)
	11. Inoue, Yasuhiko (NTT)
	12. Jiang, Feng (Apple)
	13. Kang, Sugbong (Apple)
	14. Kim, Youhan (Qualcomm)
	15. Liu, Yong (Apple)
	16. Nandagopalan, Sai Shankar (Cypress)
	17. Patil, Abhishek (Qualcomm)
	18. Petrick, Albert (InterDigital)
	19. Raissinia, Ali (Qualcomm)
	20. Rison, Mark (Samsung)
	21. Rosdahl, Jon (Qualcomm)
	22. Schelstraete, Sigurd (Quantenna)
	23. Serafimovski, Nikola (pureLiFi)
	24. Wentink, Menzo (Qualcomm)
	25. Yang, Rui (InterDigital)
	26. Yu, Mao (NXP)
3. **Agenda Setting**
	1. Proposed agenda for the TGax CRC teleconference on June 18th, 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. CR Submissions
			1. <https://mentor.ieee.org/802.11/dcn/20/11-20-0912-00-00ax-resolutions-to-miscellaneous-cids.docx> - Osama Aboul-Magd
			2. <https://mentor.ieee.org/802.11/dcn/20/11-20-0822-01-00ax-miscellaneous-6ghz-channelization-cids.docx> - Thomas Derham (a new revision will be uploaded)
		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 June 18th, 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. **Submissions**
	1. **Osama Aboul-Magd (Huawei Technologies) presented “Resolutions to Miscellaneous CIDs,” based on the submission doc.11-20-0912-00.**
		1. Summary
			1. Resolutions for the miscellaneous comments with following CIDs related to the IEEE 802.11ax D6.0 are proposed.
				1. CIDs: 24237, 24241, 24566, and 24567.
			2. Osama requested PHY experts to see if the resolutions are okay.
		2. Discussion
			1. CID 24237: (Re: Fig. 27-12) Some people agree with the comment that the caption. The group discussed the new caption.
			2. CID 24567: A member suggested rejection as the resolution for this comment. Osama agrees.
		3. Next Step
			1. There will be a motion to approve the proposed resolutions next week.
	2. **Thomas Derham (Broadcom) presented “Miscellaneous 6 GHz Channelization CIDs,” based on the submission doc.11-20-0822-02.**
		1. Summary
			1. Resolutions for the comments related to 6 GHz channelization defined in the IEEE 802.11ax D6.0 with following CIDs are proposed.
				1. CIDs: 24036, 24558, 24559.
		2. Discussion
			1. The group discussed specific terms for 6 GHz band operation such as LPI and SP.
		3. Next Step
			1. Basically, people need more time for review.
			2. There will be a motion to approve the proposed resolutions next week.
	3. **Laurent Cariou (Intel) presented “Proposal for TWT Wide Range Parameters,” based on the submission doc.11-20-0913-02.**
		1. Summary
			1. Laurent explained the document. This is not a comment resolution, but a proposal to extend current TWT feature.
			2. Currently, a TWT request can provide only one value for each TWT parameter. It 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. Discussion
			1. A member discussed the relation with the broadcast TWT.
			2. Another member commented that there are a number of new items and we need more time for review.
		3. Next Step
			1. Basically, people need more time for review.
7. **AoB**
	1. We are at the end of our agenda for today.
	2. Next teleconference is on Tuesday next week.
8. **Adjournment**
	1. TGax CRC teleconference on June 16th has adjourned @ 12:02 (ET).