IEEE P802.11
Wireless LANs

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| IEEE 802.11Minutes of TGax CRC Weekly Teleconferences May 2020 |
| Date: 2020-05-06 |
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Abstract

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

Revision History:

* R0: Initial version.
	+ Minutes of TGax CRC call on May 5th, 2020.
* R1: Included the minutes from TGax CRC teleconference on May 7th, 2020.

**Tuesday, May 5th, 2020, TGax CRC Teleconference (10:00 AM - 12:00 ET)**

1. **The meeting called to order at 10:02 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
	1. Introduction of TGax chairperson and secretary.
	2. The agenda document 20/0538r13 is the working document (revision 12 is on the server).
2. **Attendees**
	1. Aboul-Magd, Osama (Huawei Technologies)
	2. Asterjadhi, Alfred (Qualcomm)
	3. Au, Kwok Shum (Huawei technologies)
	4. Baron, Stephane (Canon)
	5. Cherian, George (Qualcomm)
	6. Chu, Liwen (NXP)
	7. Coffey, John (RealTek)
	8. Hamilton, Mark (ARRIS/Ruckus)
	9. Herveu, Lili (CableLabs)
	10. Huang, Po-Kai (Intel)
	11. Inoue, Yasuhiko (NTT)
	12. Jones, VK (Qualcomm)
	13. Kim, Youhan (Qualcomm)
	14. Kneckt, Jarkko (Apple)
	15. Nezou, Patrice (Canon)
	16. Patil, Abhishek (Qualcomm)
	17. Petrick, Albert (InterDigital)
	18. Rison, Mark (Samsung)
	19. Roshadl, Jon (Qualcomm)
	20. Schelstraete, Sigurd (Quantenna)
	21. Smith, Graham (SR Technologies)
	22. Stacey, Robert (Intel)
	23. Sun, Roy (CableLabs)
	24. Wentink, Menzo (Qualcomm)
3. **Agenda Setting**
	1. Proposed agenda for the TGax CRC teleconference on May 5th, 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/20/11-20-0549-00-00ax-d6-0-comment-resolution-9-7-3.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-0549-00-00ax-d6-0-comment-resolution-9-7-3.docx) **- Liwen Chu**
			2. [**https://mentor.ieee.org/802.11/dcn/20/11-20-0594-00-00ax-11ax-d6-0-comment-resolution-of-misc-cids.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-0594-00-00ax-11ax-d6-0-comment-resolution-of-misc-cids.docx) **– Liwen Chu**
			3. **11-20/0494;** CR for out of band discovery – Laurent Cariou – to be uploaded
			4. [**https://mentor.ieee.org/802.11/dcn/20/11-20-0665-00-00ax-comment-resolution-on-mibs-and-pics.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-0665-00-00ax-comment-resolution-on-mibs-and-pics.docx) **- Edward Au**
			5. [**https://mentor.ieee.org/802.11/dcn/20/11-20-0703-00-00ax-cr-for-nav-part-ii.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-0703-00-00ax-cr-for-nav-part-ii.docx) **- Po-Kai Huang**
		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 May 5th, 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
6. **CR submissions**
	1. **Liwen Chu (NXP) presented “11ax D6.0 comment resolution of misc CIDs,” based on the submission doc.11-20-0594-01.**
		1. Summary
			1. Resolution for the comments with following CIDs related to the MAC layer specification of the IEEE 802.11ax D6.0 are proposed.
				1. CIDs: 24432, 24345, 24353, 24136, 24378, 24379, 24380.
		2. Discussion
			1. CID 24345: A member suggested a minor modification to the resolution, however, another member opposed to it. The chairperson suggested some offline work for this CID.
			2. CID 24378: The group discussed what the “successfully acknowledged frame” exactly means.
			3. CID 24379 and 24380: A member mentioned that the resolution did not address the comments. Another member also objected to reject the comments since some more work seem to be needed. Related definition in REVmd draft was referred to.
		3. Next Step
			1. Liwen will have offline discussion for the deferred CIDs.
	2. **Liwen Chu (NXP) presented “11ax D6.0 comment resolution9.7.3” based on the submission doc.11-20-0549-01.**
		1. Summary
			1. Resolution for the comments with following CIDs related to the MAC layer specification of the IEEE 802.11ax D6.0 are proposed.
				1. CIDs: 24004, 24085, 24086, 24087, 24088, 24468, 24509, 24510.
		2. Discussion
			1. CID 24085: There was a comment that the proposed resolution did not address the comment. A participant will send a new reason for the rejection.
			2. CID 24086: The proposed resolution was updated. BQRP related description is added to the Table 9-531.
			3. CID 24087: The same resolution with CID 24085.
			4. CID 24468: Deferred for more discussion..
		3. Next Step
			1. Liwen will have offline discussion for the deferred CIDs.
	3. **Edward Au (Huawei Technologies) presented “Comment resolution on MIBs and PICS,” based on the submission doc.11-20-0665-00.**
		1. Summary
			1. Resolution for the comments with following CIDs related to the MIB and PICS specification of the IEEE 802.11ax D6.0 are proposed.
				1. CIDs: 24212, 24210, 24539, 24536, 24534, 24532, 24533, 24359, 24333, 24531.
		2. Discussion
			1. CID 24212: The group discussed whether we need Yes, No, N/A checkbox for the mandatory features.
			2. CID 24539: A participant asked for consistency with the baseline.
			3. CID 24532: The group discussed this CID and the resolution was updated.
			4. CID 24539: Deferred - Edward to bring a new resolution.
			5. Presentation was stopped due to the time.
		3. Next Step
			1. Continue discussion in the future teleconference.
7. **AoB**
8. **Adjournment**
	1. TGax CRC teleconference has adjourned @ 11:57 AM (ET).

**Thursday, May 7th, 2020, TGax CRC Teleconference (10:00 AM - 13:00 ET)**

1. **The meeting called to order at 10:02 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
	1. Introduction of TGax chairperson and secretary.
	2. The agenda document 20/0538r14 is the working document (revision 13 is on the server).
2. **Attendees**
	1. Aboul-Magd, Osama (Huawei Technologies)
	2. An, Song-Haur (Independent)
	3. Asterjadhi, Alfred (Qualcomm)
	4. Au, Kwok Shum (Huawei technologies)
	5. Baron, Stephane (Canon)
	6. Cao, Rui (NXP)
	7. Chen, Xiaogang (Intel)
	8. Chu, Liwen (NXP)
	9. Coffey, John (RealTek)
	10. Derham, Thomas (Broadcom)
	11. Fischer, Matthew (Broadcom)
	12. Herveu, Lili (CableLabs)
	13. Huang, Po-Kai (Intel)
	14. Inoue, Yasuhiko (NTT)
	15. Jones, VK (Qualcomm)
	16. Kandala, Srinivas (Samsung)
	17. Kim, Youhan (Qualcomm)
	18. Kumar, Manish (NXP)
	19. Kneckt, Jarkko (Apple)
	20. Li, Yunbo (Huawei Technologies)
	21. Lou, Hui-Ling (NXP)
	22. Lu, Kaiying (MediaTek)
	23. Monajemi, Pooya (Cisco Systems)
	24. Patil, Abhishek (Qualcomm)
	25. Petrick, Albert (InterDigital)
	26. Rison, Mark (Samsung)
	27. Rosdahl, Jon (Qualcomm)
	28. Schelstraete, Sigurd (Quantenna)
	29. Smith, Graham (SR Technologies)
	30. Stacey, Robert (Intel)
	31. Sun, Bo (ZTE)
	32. Sun, Roy (CableLabs)
	33. Wentink, Menzo (Qualcomm)
	34. Yan, Aiguo (Oppo)
	35. Yu, Ross Jian (Huawei Techonologies)
	36. Yu, Mao (NXP)
	37. Zhang, Yan (NXP)
3. **Agenda Setting**
	1. Proposed agenda for the TGax CRC teleconference on May 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. Puncturing Discussion
		5. Motions
			1. Doc.11-20-0491: 24334, 24335, 24336, 24337, 24338, 24339, 24340, 24393, 24394, 24472, 24537
			2. Doc.11-20-0492: 24459, 24460, 24462
			3. Doc.11-20-0493: 24025, 24475
		6. Review submissions from May 5th teleconference
			1. [**https://mentor.ieee.org/802.11/dcn/20/11-20-0549-00-00ax-d6-0-comment-resolution-9-7-3.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-0549-00-00ax-d6-0-comment-resolution-9-7-3.docx) **- Liwen Chu**
			2. [**https://mentor.ieee.org/802.11/dcn/20/11-20-0594-00-00ax-11ax-d6-0-comment-resolution-of-misc-cids.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-0594-00-00ax-11ax-d6-0-comment-resolution-of-misc-cids.docx) **– Liwen Chu**
		7. **CR Submissions**
			1. **11-20/0494;** CR for out of band discovery – Laurent Cariou – to be uploaded
			2. [**https://mentor.ieee.org/802.11/dcn/20/11-20-0703-00-00ax-cr-for-nav-part-ii.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-0703-00-00ax-cr-for-nav-part-ii.docx) **- Po-Kai Huang**
			3. [**https://mentor.ieee.org/802.11/dcn/20/11-20-0705-01-00ax-cr-for-cid-24292.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-0705-01-00ax-cr-for-cid-24292.docx) **- Po-Kai Huang**
			4. [**https://mentor.ieee.org/802.11/dcn/20/11-20-0716-00-00ax-sa1-sounding-comments.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-0716-00-00ax-sa1-sounding-comments.docx) **- Menzo Wentink**
		8. AoB
		9. Adjourn
	2. Chair asked if there is any objection to proceed with this agenda.
		1. Discussion – Some participants have time constraint and the order of the agenda items may be changed.
		2. **The agenda for TGax CRC teleconference on May 7th, 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 3 hours.
	2. Attendance @ imat.ieee.org
6. **Review of CR submissions discussed in previous teleconference**
	1. **Doc.11-20-0665-01 “Comment resolutions on MIBs and PICS,” by Edward Au (Huawei Technologies)**
		1. Summary
			1. Edward presented the updates.
		2. Discussion
			1. CID 24333: This CID seems to be ready for motion.
			2. CID 24531: There was a comment that other people are working on BSSColor Collision and CID 24249 will be related to this CID. 🡪 Edward to check the status of BSSColor Collision related comment resolution.
			3. CID 24212, 24359 and 24531 are deferred for more discussion.
		3. Next Step
			1. This document will be revisited in a future teleconference.
7. **Discussion on Preamble Puncturing**
	1. Mark Rison (Samsung) lead the discussion reviewing the results of SPs during previous teleconference and related email on allowed puncturing patterns.
	2. Discussion
		1. The group discussed details of the allowed puncturing pattern.
		2. There was a comment to consider consistency with the discussion in TGbe.
		3. Some people opposed to have such a big change in the spec at this stage of standardization.
		4. Group considered straw poll and discussed the wording of SP.
	3. **Straw Poll #5 (continued from previous discussion): Do you agree that for 160M/80+80MHz**
		* **Allow either zero, one, or two 20 MHz subchannels to be punctured in the secondary 80 MHz channel**
		* **when two 20 MHz subchannels are punctured in the secondary 80 MHz channel, they are adjacent to each other and are either the lower 40 MHz or upper 40 MHz**
		* **Allow only a maximum of two adjacent 20 MHz subchannels to be punctured across the entire PPDU bandwidth**
		1. Discussion on the SP
			1. Some people still opposed to this straw poll since it is too late to consider such a big change in the spec.
		2. **Result: Y/N/A = 11/11/9, still does not give clear direction.**
	4. Next Step
		1. Mark Rison will prepare for the proposal.
8. **Motions**
	1. **Doc.11-20-0491-04 “CR for MU EDCA,” by Laurent Cariou (Intel)**
		1. Summary
			1. Laurent gave updates on the deferred CIDs 24472 and 24537.
		2. Discussion
			1. CID 24394: A participant disagreed with the rejection. 🡪 The comment is covered by existing text and it is okay to reject it.
			2. CID 24336: New resolution.
		3. **CR Motion #1032: Move to accept resolutions to CIDs 24334, 24335, 24337, 24338, 24339, 24340, 24393, 24394, 24472, 24537 in doc 11-20/0491r5.**
			1. **Moved by Laurent Cariou, Seconded by Po-Kai Huang**
			2. **Discussion**
			3. **Result: Approved with unanimous consent.**
	2. **Doc.11-20-0493-01 “CR for SR,” by Laurent Cariou (Intel)**
		1. Summary
			1. Laurent gave updates.
		2. Discussion
			1. CID 24025: A participant commented that the issue is in TPC part. It is not proven technique. Another member suggested separation of the technical components and additional NOTE. 🡪 We have a volunteer to work on this (Graham Smith).
			2. CID 24475: A member commented that the rejection does not address the issue. This CID relates to CID 24025. We have a volunteer to work on this part (Sean Cofffey).
		3. Next Step
			1. Discussion will be continued in the subsequent teleconference.
	3. **Doc.11-20-0492-01 “CR for OPS,” by Laurent Cariou (Intel)**
		1. Summary
			1. Laurent gave updates.
		2. Discussion
			1. No discussion.
			2. CID 24460, 24462 seem to be ready for motion
		3. **CR Motion #1033: Move to accept resolutions to CIDs 24460, 24462 in doc 11-20/0492r1.**
			1. **Moved by Laurent Cariou, Seconded by Jarkko Kneckt**
			2. **Discussion - No discussion.**
			3. **Result: Approved with unanimous consent.**
9. **CR Submissions**
	1. **Po-Kai Huang (Intel) presented “11ax D6.0 NAV Part II,” based on the submission doc.11-20-703r0.**
		1. Summary
			1. Resolutions for the comments with CIDs 24027 and 24419 related to NAV defined in the IEEE 802.11ax D6.0 are proposed.
		2. Discussion
			1. CID 24027: The group discussed relation between NAV and preamble puncturing.
			2. CID 24419: The group discussed the need for a new NAV reset mechanism and conducted a straw poll.
		3. **Straw Poll: Do you support send CF-END frame in non-HT duplicate PPDU with inactive channels?**
			1. **Result: Y/N/A = 8/12/9**
		4. Further discussion
			1. CID 24419: The group discussed clarification of inter-BSS and intra-BSS PPDU, inter-BSS and intra-BSS frame.
		5. Next Step
			1. Discussion will be continued in the next teleconference.
	2. **Po-Kai Huang (Intel) presented “11ax D6.0 CR for CID 24292,” based on the submission doc.11-20-705r0.**
		1. Summary
			1. Resolution to the comment with CID 24292 related to HE TB PPDU related sequence defined in the IEEE 802.11ax D6.0 is proposed.
		2. Discussion
			1. A participant will send his comment by email. 🡪 Po-Kai to consider it.
		3. Next Step
			1. This submission will be revisited in a subsequent teleconference.
	3. **Menzo Wentink (Qualcomm) presented “11ax SA1 sounding comments,” based on the submission doc.11-20-716r0.**
		1. Summary
			1. Resolutions to the comments with following CIDs related to the sounding specification defined in the IEEE 802.11ax D6.0 are proposed.
				1. CIDs: 24009, 24042, 24221, 24262, 24473, 24474, 24495, 24496, 24503, 24504, 24505 and 24511
		2. Discussion
			1. CID 24009:
			2. CID 24042: The resolution seems to be good. The presentation was suspended due to the time.
		3. Next Step
			1. To be continued in the next teleconference.
10. **Adjournment**
	1. **TGax CRC teleconference has adjourned @ 12:59 (ET)**