IEEE P802.11
Wireless LANs

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| IEEE 802.11TGax CRC Teleconferences Minutes October 2020 |
| Date: 2020-10-08 |
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Abstract

This document contains the minutes from the TGax teleconferences during October 2020.

Revision History:

* R0: Initial version.
	+ Minutes of TGax CRC call on October 1st and 6th, 2020.

**Thursday, October 1st, 2020, TGax CRC Teleconference (19:00 - 21:00 ET)**

1. **The meeting called to order at 19:02 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
	1. Introduction of TGax chairperson and secretary.
	2. The agenda document doc.11-20/1552r1 (<https://mentor.ieee.org/802.11/dcn/20/11-20-1552-01-00ax-tgax-crc-teleconference-agendas-october-november-december-2020.pptx>) 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. Bims, Harry (Bims Laboratories, Inc.)
	6. Chu, Liwen (NXP Semiconductor)
	7. Coffey, Sean (RealTek)
	8. Derham, Thomas (Broadcom)
	9. Duan, Ruchen (Samsung)
	10. Haasz, Jodi (IEEE-SA)
	11. Hamilton, Mark (CommScope)
	12. Hunag, Po-Kai (Intel)
	13. Inoue, Yasuhiko (NTT)
	14. Kandala, Srinivas (Samsung)
	15. Kim Youhan (Qualcomm)
	16. Kwon, Young Hoon (NXP Semiconductor)
	17. Lee, Wookbong (Samsung)
	18. Nandagopalan, Sai Shankar (Cypress)
	19. Petrick, Albert (InterDigital)
	20. Rison, Mark (Samsung)
	21. Rosdahl, Jon (Qualcomm)
	22. Schelstraete, Sigurd (Quantenna/ON)
	23. Sosac, Robert (Qualcomm)
	24. Stacey, Robert (Intel)
	25. Sun, Bo (ZTE)
	26. Zhang, Yan (NXP Semiconductor)
3. **Agenda Setting**
	1. Proposed agenda for the TGax CRC teleconference on October 1st, 2020.
		1. Call meeting to order
		2. IEEE-SA IPR policy and Procedure
		3. Attendance – Please record your attendance on IMAT (imat.ieee.org)
		4. Comment Resolution and Motion
			1. Cascading discussion
			2. <https://mentor.ieee.org/802.11/dcn/20/11-20-1530-02-00ax-sa2-clause-10-comment-resolution.docx> - Osama Aboul-Magd
			3. <https://mentor.ieee.org/802.11/dcn/20/11-20-1559-02-00ax-capability-indication-for-he-sm-power-save.docx> - Po-Kai Huang
			4. <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-00-00ax-mac-cr-miscellaneous-cids-for-sa2.docx> - Alfred Asterjadhi
			5. <https://mentor.ieee.org/802.11/dcn/20/11-20-1531-01-00ax-cr-for-miscellaneous-cids-in-sa2.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 October 1st, 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
		* All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.
			+ Don’t discuss the interpretation, validity, or essentiality of patents/patent claims.
			+ Don’t discuss specific license rates, terms, or conditions.
				- Relative costs of different technical approaches that include relative costs of patent licensing terms January be discussed in standards development meetings.

Technical considerations remain the primary focus

* + - * Don’t discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.
			* Don’t discuss the status or substance of ongoing or threatened litigation.
			* Don’t be silent if inappropriate topics are discussed … do formally object.
	1. Patent-related information – done
		+ The patent policy and the procedures used to execute that policy are documented in the:
		+ *IEEE-SA Standards Board Bylaws* (http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6)
		+ *IEEE-SA Standards Board Operations Manual* (http://standards.ieee.org/develop/policies/opman/sect6.html#6.3)
		+ Material about the patent policy is available at
		+ [*http://standards.ieee.org/about/sasb/patcom/materials.html*](http://standards.ieee.org/about/sasb/patcom/materials.html)
	2. Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct - done
	3. Participants in the IEEE-SA “individual process” shall act independently of others, including employers - done
	4. IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints - done
1. **Attendance**
	1. <https://imat.ieee.org/>
		1. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
2. **Comment Resolution and Motion**
	1. **Cascading discussion (based on the email exchanges)**
		1. Summary
			1. The TGax chairperson summarized the email discussion on cascading as in slide 14 of the agenda file (https://mentor.ieee.org/802.11/dcn/20/11-20-1552-01-00ax-tgax-crc-teleconference-agendas-october-november-december-2020.pptx).
		2. Discussion
			1. People expressed their preference. Some members think no change is needed.
		3. **Straw Poll: Which option do you prefer?**
* **Option 1: change the first sentence in 26.5.3 MU cascading sequence to “An MU cascading sequence is a frame exchange sequence between an AP and one or more non-AP STAs in which the AP, within a single PPDU, acknowledges one or more frames from a STA, and triggers the STA for a further UL transmission.",**

**-      add a sentence, “The MU cascading sequence may include one or more QoS Data frames with ack policy HTPE Ack and/or Management frame soliciting acknowledgement together with a triggering frame.”, at the beginning of the paragraph that starts with “The MU cascading sequence may have a different set of transmitters in HE TB PPDUs …” in 26.5.3, and**

**-      delete “The A-MPDU may contain other MPDUs, subject to the rules in 26.6 (A-MPDU operation in an HE PPDU).” in 26.5.3.  ß I am open with this.**

* **Option 2: change the first sentence in 26.5.3 MU cascading sequence to “An MU cascading sequence is a frame exchange sequence between an AP and one or more non-AP STAs in which the AP, within a single PPDU, acknowledges one or more frames from a STA, and triggers the STA for a further UL transmission.",**

**-      add “NOTE—An A-MPDU sent by an AP in an MU cascading sequence typically includes, in addition to the acknowledgement and triggering frames, one or more QoS Data frames with ack policy HETP Ack and/or a Management frame soliciting acknowledgement, subject to the rules in 26.6.” (probably between the last 3rd and 2ndparagraph) in 26.5.3, and -8**

**-      delete “The A-MPDU may contain other MPDUs, subject to the rules in 26.6 (A-MPDU operation in an HE PPDU).” in 26.5.3.**

* **Option 3: no change**
	+ - 1. **Result: Option 1/Option 2/Option 3 = 1/8/3, the option 2 will be the way to go.**
		1. **CR Motion #1108: Move to approve “Revised” as the resolution to CID 25005. TGax Editor please make the changes:**

**change the first sentence in 26.5.3 MU cascading sequence to “An MU cascading sequence is a frame exchange sequence between an AP and one or more non-AP STAs in which the AP, within a single PPDU, acknowledges one or more frames from a STA, and triggers the STA for a further UL transmission.",**

**-      add “NOTE—An A-MPDU sent by an AP in an MU cascading sequence typically includes, in addition to the acknowledgement and triggering frames, one or more QoS Data frames with ack policy HETP Ack and/or a Management frame soliciting acknowledgement, subject to the rules in 26.6.” between the last 3rd and 2ndparagraph in 26.5.3, and**

**-      delete “The A-MPDU may contain other MPDUs, subject to the rules in 26.6 (A-MPDU operation in an HE PPDU).” in 26.5.3.**

* + - 1. **Mover: Mark Rison, Second: Tomoko Adachi**
			2. **Discussion – no discussion**
			3. **Result: Y/N/A = 10/1/1, motion passes.**
	1. **Osama Aboul-Magd (Huawei Technologies) presented “SA2 Clause 10 Comment Resolution,” based on the submission doc.11-20-1530-02.**
		1. URL of the document: <https://mentor.ieee.org/802.11/dcn/20/11-20-1530-02-00ax-sa2-clause-10-comment-resolution.docx>
		2. Summary
			1. Osama gave updates from the previous version.
		3. Discussion
			1. CID 25044: A member asked for more time to think about the resolution. 🡪 This CID will be discussed in the next call.
			2. CID 25118: A participant commented to make sure the wording is okay for everybody.
		4. **CR Motion #1109: Move to approve resolutions to CIDs 25043, 25044, 25118 in doc.** [**https://mentor.ieee.org/802.11/dcn/20/11-20-1530-02-00ax-sa2-clause-10-comment-resolution.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-1530-02-00ax-sa2-clause-10-comment-resolution.docx)
			1. **Moved by Po-Kai Huang, Second: Liwen Chu**
			2. **Discussion – no discussion.**
			3. **Result: Approved with unanimous consent.**
	2. **Po-Kai Huang (Intel) presented “11ax D7.0 Capability Indication for HE SM Power save,” based on the submission doc.11-20-1559-02.**
		1. URL of the document: <https://mentor.ieee.org/802.11/dcn/20/11-20-1559-02-00ax-capability-indication-for-he-sm-power-save.docx>
		2. Summary
			1. A fix for HE Capability Indication is proposed. This is not related to any CID.
		3. Discussion
			1. The group discussed how to proceed with this proposal since we are in the SA recirculation phase. The chairperson mentioned that it was good to correct an error if there is. Of course, it’s much better if there’s a CID that could be related.
		4. Next Step
			1. There will be a motion to approve the proposed changes in the next call.
	3. **Alfred Asterjadhi (Qualcomm) presented “Comment resolutions for miscellaneous CIDs for SA2,” based on the submission doc.11-20-1541-01.**
		1. URL of the document: <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-01-00ax-mac-cr-miscellaneous-cids-for-sa2.docx>
		2. Summary
			1. Resolutions for the miscellaneous comments received for the IEEE 802.11ax D7.0 with following CIDs are proposed.
				1. CIDs: 25015, 25018, 25035, 25046, 25049, 25063, 25066, 25094, 25121, 25126, 25127, 25128, 25129, 25130, 25131
		3. Discussion
			1. CID 25035: A participant commented that he agreed with the resolution (REJECTED), however, he also agreed with the comment.
			2. CID 25049: The group discussed the expression of the related text and consistency with other part of the draft.
			3. CID 25121: A member commented that the resolution does not address the issue. 🡪 Alfred to work with Mark Rison.
			4. CID 25126: The changes related to this CID can affect other text in the draft using the same expression.
			5. CID 25130: The commenter will provide detailed information on this CID. A member agreed with the resolution to reject this comment, however, he also agreed with the commenter.
			6. CID 25131: A member recommended just to accept the comment. Another member discussed related MIB variable.
		4. Next Step
			1. Some CIDs need more work. To be discussed on Tuesday again.
	4. **Po-Kai Huang (Intel) presented “11ax D7.0 CR for Miscellaneous CIDs in SA2,” based on the submission doc.11-20-1531-04.**
		1. URL of the document: <https://mentor.ieee.org/802.11/dcn/20/11-20-1531-04-00ax-cr-for-miscellaneous-cids-in-sa2.docx>
		2. Summary
			1. Po-Kai gave updates from the previous version of this document.
		3. Discussion – no discussion
		4. **CR Motion #1110: Move to approve resolutions to CIDs 25045, 25048, 25065, 25070, 25093 in doc.** [**https://mentor.ieee.org/802.11/dcn/20/11-20-1531-04-00ax-cr-for-miscellaneous-cids-in-sa2.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-1531-04-00ax-cr-for-miscellaneous-cids-in-sa2.docx)
			1. **Moved by Po-Kai Huang, Second: Liwen Chu**
			2. **Discussion – no discussion.**
			3. **Result: Approved with unanimous consent.**
1. **AoB -** No other business.
2. **Adjournment**
	1. TGax CRC teleconference on October 1st, 2020 has adjourned @ 20:51 (ET).

**Tuesday, October 6th, 2020, TGax CRC Teleconference (10:00 - 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 doc.11-20/1552r3 (<https://mentor.ieee.org/802.11/dcn/20/11-20-1552-03-00ax-tgax-crc-teleconference-agendas-october-november-december-2020.pptx>) is the working document (r2 is on the server).
2. **Attendees**
	1. Aboul-Magd, Osama (Huawei Technologies)
	2. An, Song-Haur (Independent)
	3. Chu, Liwen (NXP Semicondctor)
	4. Duan, Ruchen (Samsung)
	5. Huang, Po-Kai (Intel)
	6. Inoue, Yasuhiko (NTT)
	7. Kim, Jeongki (LG Electronics)
	8. Kneckt, Jarrko (Apple)
	9. Petrick, Albert (InterDigital)
	10. Rison, Mark (Samsung)
	11. Rosdahl, Jon (Qualcomm)
	12. Sosac, Robert (Qualcomm)
	13. Stacey, Robert (Intel)
	14. Wentink, Menzo (Qualcomm)
	15. Yang, Rui (InterDigital)
3. **Agenda Setting**
	1. Proposed agenda for the TGax CRC teleconference on October 6th, 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 and Motions
			1. [https://mentor.ieee.org/802.11/dcn/20/11-20-1523-01-00ax-11ax-sa2-draft-7-0-comment-resolutions.docx](https://mentor.ieee.org/802.11/dcn/20/11-20-1523-00-00ax-11ax-sa2-draft-7-0-comment-resolutions.docx) - Menzo Wentink
			2. <https://mentor.ieee.org/802.11/dcn/20/11-20-1530-02-00ax-sa2-clause-10-comment-resolution.docx> - Osama Aboul-Magd
			3. <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-00-00ax-mac-cr-miscellaneous-cids-for-sa2.docx> - Alfred Asterjadhi
			4. <https://mentor.ieee.org/802.11/dcn/20/11-20-1571-00-00ax-sa2-comment-resolution-25076-25077.docx> - Liwen Chu
		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 October 6th, 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
		* All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.
			+ Don’t discuss the interpretation, validity, or essentiality of patents/patent claims.
			+ Don’t discuss specific license rates, terms, or conditions.
				- Relative costs of different technical approaches that include relative costs of patent licensing terms January be discussed in standards development meetings.

Technical considerations remain the primary focus

* + - * Don’t discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.
			* Don’t discuss the status or substance of ongoing or threatened litigation.
			* Don’t be silent if inappropriate topics are discussed … do formally object.
	1. Patent-related information – done
		+ The patent policy and the procedures used to execute that policy are documented in the:
		+ *IEEE-SA Standards Board Bylaws* (http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6)
		+ *IEEE-SA Standards Board Operations Manual* (http://standards.ieee.org/develop/policies/opman/sect6.html#6.3)
		+ Material about the patent policy is available at
		+ [*http://standards.ieee.org/about/sasb/patcom/materials.html*](http://standards.ieee.org/about/sasb/patcom/materials.html)
	2. Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct - done
	3. Participants in the IEEE-SA “individual process” shall act independently of others, including employers - done
	4. IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints - done
1. **Attendance**
	1. <https://imat.ieee.org/>
		1. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
2. **Comment Resolution and Motions**
	1. **Menzo Wentink (Qualcomm) presented “11ax SA2 draft 7.0 comment resolutions,” based on the submission doc.11-20-1523-01.**
		1. URL of the document: <https://mentor.ieee.org/802.11/dcn/20/11-20-1523-01-00ax-11ax-sa2-draft-7-0-comment-resolutions.docx>
		2. Summary
			1. Resolutions to the comments received for the IEEE 802.11ax D7.0 with following CIDs are proposed.
				1. CIDs: 25038, a, 25044
		3. Discussion
			1. CID a: The related baseline text had been changed by TGmd. The group agreed that we should align with the IEEE 802.11REVmd D5.0. A note was added for the editor.
			2. CID 25044: A member commented that this CID was in doc.11-20-1530-02 (<https://mentor.ieee.org/802.11/dcn/20/11-20-1530-02-00ax-sa2-clause-10-comment-resolution.docx>). The chairperson mentioned that comment was discussed when he presented doc.11-20-1530-02, however, it was not resolved at that time. He is happy with the resolution in this document.
		4. **CR Motion #1111: Move to approve resolutions to CIDs 25038 and 25044 and the text change related to CID a in doc.** [**https://mentor.ieee.org/802.11/dcn/20/11-20-1523-02-00ax-11ax-sa2-draft-7-0-comment-resolutions.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-1523-02-00ax-11ax-sa2-draft-7-0-comment-resolutions.docx)
			1. **Mover: Menzo Wentink, Second: Yasuhiko Inoue.**
			2. **Discussion: no discussion.**
			3. **Result: Approved with unanimous consent.**
	2. **Liwen Chu (NXP Semiconductor) presented “11ax D6.0 comment resolution of CID 25076, 25077,” based on the submission doc.11-20-1571-00**
		1. URL of the document: <https://mentor.ieee.org/802.11/dcn/20/11-20-1571-00-00ax-sa2-comment-resolution-25076-25077.docx>
		2. Summary
			1. Resolution for the comments with CID 25076 and 25077 received for the IEEE 802.11ax D7.0 are proposed.
		3. Discussion
			1. CID 25076: A member commented that the proposed text (new paragraph) could produce more comments. Another member mentioned that the text for MSDU selection is not complete. The chairperson mentioned that people need more time to think about this issue.
		4. Next Step
			1. There will be a motion to approve the proposed resolutions possibly in the next call.
3. **AoB**
	1. No other business.
4. **Adjournment**
	1. TGax CRC teleconference on October 6th, 2020 has adjourned @ 11:01 AM (ET).