IEEE P802.11
Wireless LANs

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| Minutes of the IEEE P802.11 Full Working Group |
| Date: 2021-05-20 |
| Author(s): |
| Name | Company | Address | Phone | email |
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Abstract

This document constitutes the minutes of the IEEE 802.11 full working group for the May 2021 meeting.

Please note that all affiliations at this meeting are shown in Annex A.

**IEEE 802.11 Plenary Meeting – Session #187**

**May 10th – 18th, 2021**

**IEEE 802.11 Opening Plenary, Monday 10th May 2021**

Presiding chair: Dorothy Stanley (Hewlett Packard Enterprise) opened the meeting at 09:00 Eastern Daylight Time (EDT) and declared quorum for the session.

2nd Vice-chair (VC2): Robert Stacey Intel Corporation

1st Vice-chair (VC1): Jon Rosdahl Qualcomm

Secretary: Stephen McCann Huawei Technologies Co., Ltd

There are 442 voting members and 11 Ex Officio voters of IEEE 802.11\*

There were 264 people present in the meeting.

\*who ask to be recognized as such in the 802.11 voters list.

1. **Notices** (11-21-0588r0 slide #3)
	1. Chair: Are there any members of the press present.
		1. None.
	2. IEEE Staff present
		1. Christy Bahn
2. **Approve/modify working group agenda** (11-21-0587r2)
	1. This is a summary of the meeting today. Please note the schedule for this session on the separate tab “Schedule”.
	2. Chair: I suggest we approve this agenda.
	3. **Move to approve the agenda 11-21-0587r2**
		1. Moved: Marc Emmelmann, 2nd: Al Petrick
		2. No objection to approving by unanimous consent
3. **March 2021 WG Minutes**
	1. **Move to approve the March 2021 WG minutes document 11-21-0388r1**
	2. Moved: Stephen McCann, 2nd: Stuart Kerry
	3. Following neither discussion nor dissent the minutes were approved by unanimous consent.
4. **New Attendees** (11-21-0637r0 slide #4)
	1. Straw Poll:
	2. **Are you a new attendee to IEEE 802.11?**
		1. Yes: 5, No: 100
	3. There is a new members’ meeting on Tuesday May 9th at 09:00 ET. This is a useful tutorial for those 5 new members to learn about IEEE 802.11.
5. **Call for essential Patents** (11-21-0625r1)
	1. VC2: read out the current PatCom rules, and then called for essential patents information, as shown by:
	2. <https://development.standards.ieee.org/myproject/Public/mytools/mob/patut.pdf>
		1. There were no issues raised regarding the call for essential patents.
		2. There was no response to the call for essential patents.
6. **Participation and Attendance** (11-21-0625r1)
	1. The slides about IEEE 802 meeting participation and IEEE SA copyright were also read.
	2. Expected participant behavior was also announced.
	3. VC2: Please note the slide about the valid abstain response in ballots and also all voting members’ obligations to respond to ballots.
7. **Announcements** (11-21-0588r0)
	1. **Liaisons** (slide #4)
		1. Chair: There are three liaisons:
		2. Liaison from WBA re: Device identification issues when Randomized MAC addresses are used, assigned to TGbh, see <https://mentor.ieee.org/802.11/dcn/21/11-21-0703-00-0000-2021-april-liaison-from-wba.doc>
		3. Liaison from ITU-T Focus Group on Vehicular Multimedia (FG-VM) re: FG status and technical report “Architecture of Vehicle Multimedia Systems”, assigned to TGbd, see <https://mentor.ieee.org/802.11/dcn/21/11-21-0711-00-0000-liaison-from-itu-t-fgvm-vehicular-multimedia.docx>
		4. Communication from WFA Hotspot Marketing TG, assigned to TGme, see <https://mentor.ieee.org/802.11/dcn/21/11-21-0787-00-0000-communication-from-wfa-hotspot-marketing-tg-re-anqp.docx>
	2. **EC and standard board decisions** (slides #5 and #6)
		1. Chair: The EC approved the items on the slides.
8. **Logistics and Key events/activities**
	1. **Working group session documents** (11-21-0588r0 slide #7)
	2. **Joint meetings & reciprocal credit with IEEE 802 groups** (slide #8)
		1. Reminder that there are topics relevant to IEEE 802.11 to be covered in IEEE 802.18, IEEE 802.19, IEEE 802.24, NENDICA and some of the other IEEE 802 groups.
		2. Reciprocal credit may also be given as indicated on the slides.
		3. Chair: Although this meeting does not count towards voting right credits, I will grant access to email reflectors and the members’ area, for those new people who attend sessions for the 1st time this week.
		4. Chair: Please remember to record your attendance for each meeting during this session.
	3. **M3.3 Other WG meeting plans** (11-21-0631r1 slide #5)
		1. This slide shows information about other WG meetings, future meetings and logistics during this plenary.
		2. Please use the online schedule at the IEEE 802 website for the online meeting times during this plenary. It can be adjusted to show times in your own time zone.
		3. Please remember to record your attendance for each slot during this plenary, using the IMAT tool: <https://imat.ieee.org/802.11>
	4. **Audio Visual Etiquette** (11-21-0631r1 slide #7)
		1. VC1: Please remember this advice when you are presenting during online calls.
	5. **M3.7 Recording attendance** (slide #9)
		1. VC1: Please note the rules about recording attendance at each IEEE 802.11 meeting during this plenary.
9. **Status of all groups** (11-21-0588r0)
	1. **Group summary** (slide #12)
		1. Chair: This is a review of the current IEEE 802.11 groups.
	2. **Sub-Group Officer Status** (slide #16)
		1. Chair: Please note the changes to sub-group officers for this plenary. I would also like to thank all the technical editors and secretaries who do a lot of work.
	3. **Summary of Ballots** (slide #19)
		1. There was one comment collection (P802.11REVme D0.0), between the March 2021 meeting and now.
10. **Membership** (11-21-0588r0 slide #20)
	* 1. These slides show the IEEE 802.11 membership numbers, by affiliation and whether members have been recently active.
		2. Question(Q): There is an incorrect date on Slide #20 of 588.
		3. Answer(A): Yes, thanks, will post a revision of the document.
		4. Q: Are there voting rights this time?
		5. Chair: There are no voting right credits during this session.
11. **Timelines**
	1. At the moment, there are no major changes to the timeline chart:
	2. <https://www.ieee802.org/11/Reports/802.11_Timelines.htm>
	3. No questions
12. **Group Summaries** (11-21-0626r0)
	1. Special notes were mentioned for the following groups:
	2. **Editors’ meeting and ANA** (slide #3)
		1. There is an editors’ meeting later today at 16:00 ET, as per the online schedule. Other topics include the ANA status (11-11-0270r54).
		2. No questions
	3. **AANI** SC (slide #5)
		1. There are 4 meetings for this session. The work will be to
			1. a) prepare a liaison for the WBA regarding how fine grain QoS for 5G flows can be provided by 802.11ax.
			2. b) progress the 5G interworking report.
		2. No questions
	4. **ARC SC** (slide #6)
		1. There have been several teleconferences since the March 2021 meeting, basically discussing various architecture topics and P802.11be architecture options.
		2. No questions
	5. **Co-ex** **SC** (slide #8)
		1. This standing committee will meet twice this session.
		2. Some topics will be of interest to participants in both 802.11me and 802.11be.
		3. No questions
	6. **PAR SC** (slide #9)
		1. There is no meeting this session
		2. No questions
	7. **WNG** (slide #10)
		1. There are 2 presentations for today’s meeting at 11:15 ET.
		2. No questions
	8. **JTC1** (slide #11)
		1. There is 1 meeting during this session.
		2. No questions
	9. **REVme** (slide #14)
		1. The objective for this session is to consider comments from the D0.0 comment collection.
		2. There is also a liaison from the WFA Hotspot marketing group that will be discussed.
		3. No questions
	10. **TGax** (slide #15)
		1. This task group has now finished its work and P802.11ax has been approved as a new amendment. There are no meetings this session.
		2. An award presentation is scheduled for the closing plenary on May 18th.
		3. No questions
	11. **TGay** (slide #16)
		1. This task group has now finished its work and P802.11ay was approved by SASB in March 2021. There are no meetings this session.
		2. No questions
	12. **TGaz** (slide #18)
		1. The group is working on resolving comments from Letter Ballot 253 on P802.11az D3.0..
		2. No questions
	13. **TGba** (slide #19)
		1. This task group has now finished its work and P802.11ba was approved by SASB in March 2021. There are no meetings this session.
		2. No questions
	14. **TGbb** (slide #20)
		1. The group is meeting several times during this session.
		2. No questions.
	15. **TGbc** (slide #21)
		1. The goals are to continue resolution of the comments received in the recent comment collection.
		2. No questions
	16. **TGbd** (slide #23)
		1. The group is also working on comment resolution this session and has 4 meetings. The group will also consider the liaison from the ITU-R Focus Group on Vehicular Multimedia.
		2. No questions
	17. **TGbe** (slide #27)
		1. The group produced a draft 0.4 and has been having many teleconferences since the March 2021 session. It is hoped to produce a D1.0 this session.
		2. No questions
	18. **TGbf** (slide #30)
		1. There have been 4 teleconference calls since the March 2021 meeting on various topics.
		2. No questions
	19. **TGbh (Random and Changing MAC address)** (slide #32)
		1. There are two meetings during this session. The group will also consider the liaison from the WBA.
		2. No questions.
	20. **TGbi (Enhanced Data Privacy)** (slide #33)
		1. There are two meetings during this session.
		2. No questions.
	21. **ITU ad-hoc** (slide #34)
		1. There will be 1 session during this session to review the results of the recent ITU-R Working Party 5A meetings related to M1450 and M.1801.
		2. No questions.
13. **IEEE 802.18 Liaison** (11-21-0784r0)
	1. This document shows the details of the IEEE 802.18 meeting this session.
	2. There is a typo on slide 2 related to the meeting dates, so there will be an 11-21-0784r1.
	3. No questions.
14. **IEEE 802.19 Liaison** (11-21-0800r1)
	1. There is no meeting of IEEE 802.19 in May.
	2. No questions.
15. **DirectVoteLive update** (11-21-0631r0 slide #10)
	1. Everyone will have received a test email just prior to this meeting. I hope you have been able to check the motions throughout the meeting.
	2. Many of the issues that were raised in the March meeting have hopefully been resolved.
	3. Q: It is still confusing that the tool says “submitted: no”.
	4. A: This means you have not voted in any motion.
	5. Q: An option of “not submitted” would also be useful.
	6. A: That has already been suggested to the tool developer but not implemented yet.
	7. Q: Which tool was used for the poll on the September session meeting format?
	8. A: This was the usual ePoll and not the DirectVoteLive tool.
	9. Q: I opened the DirectVoteLive late, so the update question had already occurred. How do I answer that question?
	10. A: Just answer “yes”.
16. **AoB**
	1. Chair: Please remember to look at the meeting schedule within the agenda tab and record your attendance for each meeting of this session.
	2. The next CAC meeting is on next Monday June 7th at 09:00 ET.
	3. The next IEEE 802.11 plenary meeting will be on Monday July 12th.
17. **Recess**
	1. Meeting recessed at 10:38 EDT.

**Tuesday, 18th May 2021**

**IEEE 802.11 Closing Plenary**

Call to order at 09:00 Eastern Daylight Time (EDT) by Dorothy Stanley (HPE).

205 people present in the meeting.

1. **Approve/modify working group agenda** (11-21-0587r4)
	1. Chair: There have been some minor changes to the agenda since the opening plenary.
	2. **Approve the agenda for the Tuesday meeting as shown in 11-21-0587r4**
		1. Moved: Allan Jones, 2nd: Stuart Kerry
		2. No objection to approving by unanimous consent.
2. **Announcements** (11-21-0589r0)
	1. **Participation** (slides #4 - #6)
		1. Please can you all remember to read this slide and understand that everyone is here as an individual subject matter expert.
	2. **Patents** (slides #7)
		1. This is the Call for Essential Patents
		2. No statements
		3. No questions
	3. **Chair’s minutes, reports and web pages**
		1. Please can you ensure that the sub-group minutes are on the server within 30 days after the close of this meeting. Please can you also send web-page and timeline updates to the secretary.
		2. Please be aware of the future chair’s committee meetings (CAC), the first one of which will be on June 7th 09:00 ET. Please note the deadline for the sub-group agendas.
	4. **Next Meeting**
		1. The next meeting of the IEEE 802.11 working group is from July 12th - 20th 2021 and will be an electronic meeting.
	5. **Letters of Assurance (LoA)** (slide #11)
		1. Chair: please remember about the LoA requirements.
		2. There is one LoA request open at the moment.
	6. **IEEE Store and ISO SC6** (slides #12 and #13)
		1. Chair: The publication date for IEEE 802.11ax-2021 is the end of May 2021. IEEE 802.11ay and IEEE 802.11ab will also be published in the summer.
		2. Chair: There will be later motions to liaise these three amendments (when published) to ISO.
		3. Q: It appears that 802.11-2016 is no longer available in the IEEE store.
		4. Chair: I will check that.
		5. Q: Other items also appear to be wrong on the Get 802 website.
		6. Chair: Ok, I will also look at that.
	7. **Press Releases** (slide #14)
		1. There has been a recent blog posted for TGbh and TGbi, as shown in the links on the slide.
	8. **Public Visibility Standing Committee** (slides #15 & #16)
		1. This IEEE 802 group is designed to increase the external visibility of IEEE 802.
3. **Treasury Report** (ec-21-0093-00)
	1. VC1: This shows the treasurers’ report and is correct up to April 30th 2021. The banking system has changed from NetSuite to NextGen Banking on May 1st 2021.
	2. In the next few weeks, contracts will also migrate into NextGen Banking.
	3. No questions
4. **Upcoming Venues** (ec-21-0025-05)
	1. VC1: This slide shows the current status of future venues as of May 5th 2021.
	2. The result of the ePoll for the number of people who could attend a possible September 2021 meeting was low as shown on slide #12. The decision was taken by the IEEE 802 wireless chairs to make the September meeting online only. There will be a registration payment for this meeting.
	3. There is also a registration payment for the July 2021 plenary and the registration page is now available: <https://cvent.me/D5LYLq>.
	4. No questions
5. **Timelines**
	1. Updates have been made to the timelines for TGbb, TGbc and TGbd.
	2. No questions
6. **Attendance statistics** (11-21-0627r1 slide #4)
	1. VC2: These slides are a summary of the attendance statistics and sub-group activities during this session.
7. **WG Committee Reports** (11-21-0627r1)
	1. **Editors** (slide #10)
		1. Please remember to use MS Visio for figures within drafts.
		2. No amendment order change was made this time, as several drafts are currently immature. The ordering will be re-considered during the July meeting.
		3. No questions
	2. **AANI** (slide #19)
		1. No questions
	3. **ARC** (slide #24)
		1. The discussions about the TGbe architecture seems to be converging to a single solution.
		2. Please note the time changes for the future teleconferences.
		3. No questions
	4. **WNG SC** (slide #33)
		1. There were two presentations during the meeting:
		2. Proactive Spectrum Planning
		3. DeepBeam: Deep Waveform Learning for Coordination-Free Beam Management in mmWave Networks
		4. No questions
	5. **REVme** (slide #40)
		1. The work concerned the resolution of comments from the comment collection on REVme D0.0, which is essentially IEEE 802.11-2020.
		2. No questions
	6. **TGaz** (slide #43)
		1. The TG continued working on LB253 comments.
		2. No questions
	7. **TGbb** (slide #49)
		1. TG resolutions to comments from the comment collection were approved and changes were made to D0.4 to create a D0.5.
		2. No questions
	8. **TGbc** (slide #53)
		1. The work this session was concerned with resolving comments for LB252.
		2. No questions
	9. **TGbd** (slide #60)
		1. The work this session was concerned with resolving comments for LB251.
		2. No questions
	10. **TGbe** (slide #64)
		1. Several issues and topics were covered this meeting. The CC34 comment collection was completed and the creation of a D1.0 has been approved.
		2. No questions
	11. **TGbf** (slide #68)
		1. No questions
	12. **TGbh** (slide #73)
		1. Thanks to everyone for helping to create the blog page (in conjunction with TGbi) that was recently published.
		2. No questions
	13. **TGbi** (slide #79)
		1. No questions
	14. **ITU ad-hoc** (slide #82)
		1. No questions
	15. **COEX SC** (slide #30)
		1. A wide range of submissions related to 60 GHz, 5 and 6 GHz coexistence were discussed during this session.
		2. No questions
	16. **JTC1 SC** (slide #36)
		1. No questions
8. **Liaison Reports** (11-21-0627r1)
	1. **Wi-Fi Alliance** (slide #93)
		1. No questions
	2. **IETF** (slide #97)
		1. Q: TLS 1.3 appears to be maturing. When should IEEE 802.11 be looking at this.
		2. A: I would say now is the time. The draft is mature.
		3. Q: So, where could we do this work within IEEE 802.11?
		4. Chair: Could someone create a presentation please?
		5. Comment (C): I think this will affect EAP, so perhaps we should wait for IETF EMU to work on this?
		6. **Action**: Peter Yee to post an update to the reflector on whether there are any subsequent EAP implications for 802.11.
		7. C: TLS 1.3 also adds support for 1609.2 certificates which may impact 802.11p and 802.11bd.
		8. No questions
	3. **IEEE 1609**
		1. IEEE Std 1609.3-2020 has now been published (March 9, 2021). ASN.1 modules for WSM, WSA, extensions and WSA security, as well as a PICS template have been uploaded to the IEEE download site.
		2. The IEEE Registration Authority website’s public listing of PSIDs (globally unique application specification identifiers) has been updated to add a few new features and harmonization with the ISO registry for the same identifier space (called ITS-AIDs outside the US) has been achieved, for example ElectorGroupID and AcpcTreeID.
		3. IEEE 1609.2.1-2020 specifying management interfaces for end-entities was published in December 2020. Work on updates as a result of system testing is ongoing as is work on updates to the base standard IEEE 1602.
		4. No questions
9. **Break**
	1. Chair: At this point we will have a 5 minute recess
10. **Working Group Motions (Old Business)** (11-21-0637r2)
	1. **802.11ax to ISO** (slide #6)
		1. **Request IEEE 802 LMSC to submit IEEE Std 802.11ax-2021 to ISO/IEC JTC1/SC6 for adoption under the PSDO agreement.**
		2. Moved by Osama AboulMagd, 2nd: Yasuhiko Inoue
		3. Result: Yes: 117, No: 8, Abstain: 7 (Motion passes)
	2. **802.11ay to ISO** (slide #7)
		1. **Request IEEE 802 LMSC to submit IEEE Std 802.11ay-2021 to ISO/IEC JTC1/SC6 for adoption under the PSDO agreement.**
		2. Moved by Edward Au, 2nd: Allan Jones
		3. Result: Yes: 105, No: 1, Abstain: 10 (Motion passes)
	3. **TGaz PAR extension** (slide #8)
		1. **Believing that the PAR extension contained in the document referenced below meets IEEE-SA guidelines,**
		2. **Request that the PAR extension contained in 11-21-0750r2 be posted to the IEEE 802 Executive Committee (EC) agenda for approval to submit to NesCom**
		3. Moved by Jonathan Segev on behalf of TGaz, 2nd: Jerome Henry
		4. Result: Yes: 100, No: 1, Abstain: 11 (Motion passes)
		5. [TGaz result: Yes: 18, No: 0, Abstain: 0]
	4. **802.11ba to ISO** (slide #9)
		1. **Request IEEE 802 LMSC to submit IEEE Std 802.11ba-2021 to ISO/IEC JTC1/SC6 for adoption under the PSDO agreement.**
		2. Moved by Minyoung Park, 2nd: Po-Kai Huang
		3. Result: Yes: 100, No: 2, Abstain: 19 (Motion passes)
	5. **TGbe letter ballot** (slide #10)
		1. **Move to approve a 30-day Working Group Technical Letter Ballot asking the question “Understanding that development of features for P802.11be is ongoing, are the features that are defined in P802.11be D1.0 complete?”**
		2. **NOTE: This is not a ballot to forward to IEEE SA and does not affect voting rights.**
		3. Moved by Alfred Asterjadhi on behalf of TGbe, 2nd: Allan Jones
		4. Q: This is not a normal letter ballot. Can I submit a No vote with comments?
		5. Chair: Yes. The rules about invalid responses in a ballot series do not apply.
		6. C: I speak against this motion. The question about being “complete” does not make sense. The list of features that should be complete are not listed anywhere. In addition, the motion does not request any action, as there is no outcome for the D1.0 document.
		7. Q: Is this more like a comment collection, rather than a letter ballot. In other words, do all the comments need to be addressed? Additionally, will this draft be liaised to external organization?
		8. Chair: The comments will be treated like a comment collection. The draft cannot be liaised externally. That would have to be a 75% approved document achieved through a WG letter ballot.
		9. C: I speak against the motion. Usually a D1.0 indicates that the document is a final document. I’m not sure what the rest of the Wi-Fi industry will think about this. In the future, this may become an example of projects that do not go to letter ballot.
		10. Q: Why is this not called a comment collection?
		11. TGbe chair: All comments will be responded to. If you feel that any feature that is in the draft is complete, then you do not need to submit comments. This is what feature complete means.
		12. Q: In the March 2021 plenary, a statement was made that a comment collection would be made for D1.0. Why has the text been changed?
		13. TGbe chair: I took the wording from previous projects that made a similar step. It is a comment collection, but with more official wording.
		14. Q: I thought there would be another round of comment collection with D1.0.
		15. Chair: The intent is that in addition to collecting comments, members are asked to respond to the question within the motion.
		16. Q: I speak against the motion. It appears that this is a comment collection and not a technical letter ballot. I feel uncomfortable about this motion and I’m concerned that we can’t all agree what status D1.0 is in.
		17. C: This should be a normal letter ballot.
		18. C: I agree with the previous comment. I would like to call for a roll call vote.
		19. Chair: We will have a recorded vote within the minutes.
		20. C: If there appears to be no action from this motion, then it is not worth having this. I think one of the earlier comments was good. The motion is almost out of order and I speak against it.
		21. Chair: The motion asks whether the features in TGbe are complete or not.
		22. Chair: This is a technical motion.
		23. **Recorded Vote**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name, Given Affiliation** | **Yes** | **No** | **Abstain** |
|  Abhishek Patil, Qualcomm | X |  |  |
|  Akira Kishida, NTT |  | X |  |
|  Al Petrick, InterDigital |  | X |  |
|  Albert Bredewoud, Broadcom | X |  |  |
|  Alecsander Eitan, Qualcomm | X |  |  |
|  Alfred Asterjadhi, Qualcomm Inc. | X |  |  |
|  Alice Jialing Li Chen, Qualcomm | X |  |  |
|  Allan Jones, Activision | X |  |  |
|  AN NGUYEN, DHS | X |  |  |
|  Andreas Bluschke, Signify |  |  | X |
|  Anthony Pesin, InterDigital |  |  | X |
|  Antonio de la Oliva, InterDigital |  | X |  |
|  Arik Klein, Huawei |  | X |  |
|  Assaf Kasher, Qualcomm | X |  |  |
|  Bahar Sadeghi, Intel | X |  |  |
|  Basak Ozbakis, VESTEL | X |  |  |
|  Bill Carney, Sony |  | X |  |
|  BO SUN, ZTE |  | X |  |
|  Brian Hart, Cisco Systems |  | X |  |
|  Carl Kain, USDOT; Noblis |  |  | X |
|  Carol Ansley, Cox |  | X |  |
|  Chao-Chun Wang, MediaTek |  |  | X |
|  Chaoming Luo, OPPO |  |  | X |
|  Cheng Chen, Intel | X |  |  |
|  Chunyu Hu, FB | X |  |  |
|  Claudio da Silva, Intel | X |  |  |
|  Dave Cavalcanti, Intel | X |  |  |
|  Der-Zheng Liu, Realtek | X |  |  |
|  Dmitry Akhmetov, Intel | X |  |  |
|  Dmitry Bankov, IITP RAS | X |  |  |
|  Dongguk Lim, LGE | X |  |  |
|  Duncan Ho, Qualcomm | X |  |  |
|  Ebubekir Memişoğlu, IMU; Vestel |  | X |  |
|  Edward Au, Huawei |  |  | X |
|  Edward Harrison, Anritsu |  |  | X |
|  Emily Qi, Intel | X |  |  |
|  Evelyn Chen, Ericsson |  | X |  |
|  Ezer Melzer, Huawei |  |  | X |
|  Fumihide Goto, DENSO |  | X |  |
|  Gaurav Patwardhan, HPE |  | X |  |
|  Geert Awater, Qualcomm | X |  |  |
|  Genadiy Tsodik, Huawei |  |  | X |
|  Greg Geonjung Ko, WILUS |  |  | X |
|  Halise Turkmen, Vestel |  |  | X |
|  Hanqing Lou, InterDigital |  | X |  |
|  Hao Song, Intel |  |  |  |
|  Harry Bims, Bims Laboratories |  | X |  |
|  Harry Hao Wang, Tencent |  | X |  |
|  Hiroyuki Motozuka, Panasonic |  | X |  |
|  Hitoshi Morioka, SRC Software |  | X |  |
|  Huizhao Wang, ON Semi/Quantenna |  | X |  |
|  Ilya Levitsky, IITP RAS |  |  | X |
|  James Yee, MediaTek |  |  | X |
|  Jeff Jones, Qorvo | X |  |  |
|  Jeongki Kim, Self |  |  | X |
|  Jerome Henry, Cisco |  | X |  |
|  Jinsoo Choi, LG | X |  |  |
|  Joerg Robert, TU Ilmenau/Fraunhofer IIS |  |  | X |
|  John Wullert, Perspecta Labs |  |  | X |
|  Jon Rosdahl, Qualcomm |  |  | X |
|  Jonas Sedin, Ericsson |  | X |  |
|  Joseph Levy, InterDigital |  | X |  |
|  Jouni Malinen, Qualcomm | X |  |  |
|  Julia Shuling Feng, MediaTek |  |  | X |
|  Junghoon Suh, Huawei |  | X |  |
|  Kanke Wu, Qualcomm | X |  |  |
|  Kazuto Yano, ATR | X |  |  |
|  kiwin PALM, BRCM | X |  |  |
|  Klimakov Andrey, Huawei |  |  | X |
|  Kurt Lumbatis, CommScope |  |  |  |
|  laurent cariou, Intel | X |  |  |
|  Lei Huang, OPPO | X |  |  |
|  Lei Wang, Futurewei |  |  | X |
|  Leo Montreuil, Broadcom | X |  |  |
|  Lin Yang, Qualcomm | X |  |  |
|  Lisa Ward, Rohde & Schwarz |  |  | X |
|  Mahmoud Kamel, InterDigital |  | X |  |
|  Marc Emmelmann, Koden-TI |  | X |  |
|  Mark Hamilton, Ruckus/CommScope |  | X |  |
|  Mark RISON, Samsung |  |  | X |
|  Massinissa Lalam, Sagemcom |  |  | X |
|  Matthew Fischer, {Broadcom} | X |  |  |
|  Menzo Wentink, Qualcomm | X |  |  |
|  Michael Grigat, DT |  |  | X |
|  Mike Montemurro, Huawei |  | X |  |
|  Minyoung Park, Intel | X |  |  |
|  Muhammad Sohaib Solaija, IMU; Vestel |  |  | X |
|  Nancy Lee, Signify |  |  | X |
|  Naotaka Sato, Sony | X |  |  |
|  Naveen Kakani, Qualcomm | X |  |  |
|  Nehru Bhandaru, Broadcom | X |  |  |
|  Noel Stott, Keysight Technologies | X |  |  |
|  Oded Redlich, Huawei | X |  |  |
|  Osama Aboul-Magd, Huawei |  | X |  |
|  Pascal VIGER, Canon |  | X |  |
|  Patrice NEZOU, Canon |  | X |  |
|  Paul Nikolich, 802 Chairman |  |  | X |
|  Paul Strauch, Qualcomm | X |  |  |
|  Payam Torab, Facebook |  |  | X |
|  Peter Ecclesine, Cisco Systems |  | X |  |
|  Peter Yee, NSA-CSD |  | X |  |
|  Po-Kai Huang, Intel | X |  |  |
|  Prabodh Varshney, Nokia | X |  |  |
|  Richard Van Nee, Qualcomm | X |  |  |
|  Rob Davies, Signify |  | X |  |
|  Robert Sosack, Molex |  |  | X |
|  Robert Stacey, Intel | X |  |  |
|  Rolf de Vegt, Qualcomm | X |  |  |
|  Romain GUIGNARD, Canon |  |  | X |
|  Ross Jian Yu, Huawei |  |  | X |
|  Rui Yang, InterDigital |  | X |  |
|  Sam Oyama, ARIB |  |  | X |
|  Sang Kim, LGE | X |  |  |
|  Sebastian Max, Ericsson |  |  | X |
|  Shimi Shilo. Huawei |  |  | X |
|  Solomon Trainin, Qualcomm | X |  |  |
|  Srinivas Kandala, Samsung | X |  |  |
|  Stephan Sand, German Aerospace Center DLR | X |  |
|  Stephane Baron, Canon |  | X |  |
|  Steve Shellhammer, (Qualcomm) | X |  |  |
|  Stuart Kerry, OK-Brit; Self |  | X |  |
|  Subir Das, [Plabs] | X |  |  |
|  SunHee Baek, LGE | X |  |  |
|  Thomas Derham | X |  |  |
|  Thomas Pare, Mediatek | X |  |  |
|  Tomoko Adachi, Toshiba |  | X |  |
|  VK Jones, Qualcomm Inc | X |  |  |
|  Vyacheslav Loginov, IITP RAS |  |  | X |
|  Xiaofei Wang, InterDigital |  | X |  |
|  Xiaogang Chen, Intel | X |  |  |
|  Yan Xin, Huawei | X |  |  |
|  Yanjun Sun, Qualcomm | X |  |  |
|  Yasuhiko Inoue, self |  | X |  |
|  Yonggang Fang, MediaTek |  |  | X |
|  Yongho Seok, Mediatek | X |  |  |
|  Youhan Kim, Qualcomm | X |  |  |
|  Zhiqiang Han, ZTE |  |  | X |
| Bin Tian, Qualcomm | X |  |  |
| Boyce Bo Yang, Huawei |  | X |  |
| dibakar das, Intel | X |  |  |
| Graham Smith |  | X |  |
| Liuming Lu, OPPO | X |  |  |
| Mano Hiroshi, KDTI |  |  | X |
| Meriam Rezk, Qualcomm | X |  |  |
| Raja Banerjea, Qualcomm | X |  |  |
| Shoichi Kitazawa, Muroran IT |  |  | X |
| Simone Merlin, Qualcomm  | X |  |  |
| Tetsushi Ikegami, Meiji University | X |  |  |
| XIANDONG DONG, XIAOMI |  | X |  |
| Total | 66 | 42 | 39 |

* + 1. Result: Yes: 66, No: 42, Abstain: 39 (Motion fails)
		2. [TGbe: Similar motion results (Y/N/A): 129/12/16]
		3. TGbe Chair: I would like to suggest a new motion.
		4. C: I would like to add some words to ensure that all comments are considered before the next comment collection starts.
		5. C: I think the goal here is that this is essentially a letter ballot and comments should be considered.
	1. **TGbe comment collection** (slide #11)
		1. **Move to approve a 30-day comment collection and electronic ballot asking the question “Understanding that development of features for P802.11be is ongoing, are the features that are defined in P802.11be D1.0 complete?”**
		2. **NOTE: This is not a ballot to forward to IEEE SA and does not affect voting rights.**
		3. C: I don’t like creating motions on the fly. I would like to move on to the next agenda item.
		4. C: I would like to consider this motion as new business.
		5. **Not moved.**
		6. Chair: Ok, I can start a comment collection for the TGbe draft upon request from the TGbe chair, without a formal WG motion. Let’s move on.
	2. **TGbe coexistence assessment** (slide #12)
		1. **Include the P802.11be Coexistence Assessment document (11-21-0706r3), in the TGbe comment collection.**
		2. Q: Is this going to be the only motion for this document? Normally this motion is only moved when the initial letter ballot is ready?
		3. Chair: This motion will mean that the current coexistence document is included in the TGbe comment collection.
		4. C: I speak against this motion. Usually this type of motion comes at a later point in the lifecycle.
		5. Chair: How else should we ask for comments on the coexistence assessment doc?
		6. Q: I don’t see the purpose of this coexistence assessment
		7. Chair: Let’s update the motion text to say “include”
		8. Chair: Actually we don’t need this motion now as a formal WG motion is not required for an independent comment collection. Let’s move on.
		9. **Not moved**
		10. Chair: I will initiate a second comment collection for the P802.11be coexistence assessment document upon request from the TGbe Chair.
		11. Chair: I will also request that 802.19 provide comments on this coexistence assessment document.
1. **11ax Awards** (11-21-0855r3)
	1. This document contains a list of people who contributed to the TGax project which will result in IEEE Std 802.11ax-2021 due to be published later this month.
	2. Chair: Congratulations to all people mentioned in this document and thank you for all your hard work.
	3. C: I would like to thank Osama Aboulmagd for his great leadership through the 11ax project.
	4. C: I would also like to thank everyone in the 11ax project and it helped me develop as a technical expert.
	5. 802 chair: I would like to commend the entire 802.11 membership in completing this project and especially Osama.
	6. Chair: I would like to acknowledge Robert Stacey as editor and Yasuhiko Inoue as secretary.
2. **Wireless Chairs Meeting** (11-21-0168r0 slide #17)
	1. The next meeting will be on June 2nd at 15:00 ET.
	2. The proposed date of the next IEEE 802.11 meeting is July 12th – 20th, 2021. Please note that there is a registration fee for that meeting.
3. **Adjournment**
	1. Having completed the agenda, the chair announced that the meeting was adjourned at 11:57 EDT.

**Annex A: Attendance & Affiliation**

| **Name** | **Affiliation** | **Sessions Attended** | **Status** |
| --- | --- | --- | --- |
| Abdelaal, Rana | Broadcom Corporation | 5 | Voter |
| AbidRabbu, Shaima' | Istanbul Medipol University; Vestel | 9 | Voter |
| Abouelseoud, Mohamed | Sony Corporation | 4 | Voter |
| Aboulmagd, Osama | Huawei Technologies Co., Ltd | 14 | Voter |
| Abushattal, Abdelrahman | Istanbul Medipol university ;Vestel | 7 | Voter |
| Adachi, Tomoko | TOSHIBA Corporation | 12 | Voter |
| Adhikari, Shubhodeep | Broadcom Corporation | 3 | Voter |
| Agardh, Kare | Acconeer AB | 22 | Non-Voter |
| Agarwal, Peyush | Broadcom Corporation | 1 | Voter |
| Agrawal, abhishek | ON Semiconductor | 1 | Voter |
| Agrawal, Sandeep | C-DOT/Centre for Development of Telematics | 3 | Voter |
| Akhmetov, Dmitry | Intel Corporation | 13 | Voter |
| Al Falujah, Iyad | ON Semiconductor | 7 | Aspirant |
| Aldana, Carlos | Facebook | 14 | Potential Voter |
| Alexander, Danny | Intel Corporation | 1 | Potential Voter |
| Ambede, Abhishek | Ericsson AB | 1 | Potential Voter |
| An, Song-Haur | INDEPENDENT | 11 | Voter |
| Andersdotter, Amelia | None - Self-funded | 6 | Voter |
| Ansley, Carol | Cox Communications Inc. | 15 | Voter |
| Anwyl, Gary | MediaTek Inc. | 5 | Voter |
| Asterjadhi, Alfred | Qualcomm Incorporated | 13 | Voter |
| Au, Kwok Shum | Huawei Technologies Canada; Huawei Technologies Co., Ltd | 19 | Voter |
| Auluck, Vijay | Self | 8 | Voter |
| Avallone, Stefano | University of Napoli | 17 | Non-Voter |
| Awater, Geert | Qualcomm Incorporated | 4 | Voter |
| Aygul, Mehmet | Istanbul Medipol University; Vestel | 8 | Voter |
| B, Hari Ram | NXP Semiconductors | 4 | Voter |
| Baek, SunHee | LG ELECTRONICS | 6 | Voter |
| Bahn, Christy | IEEE STAFF | 8 | Aspirant |
| Baik, Eugene | Qualcomm Incorporated | 3 | Voter |
| Bajko, Gabor | MediaTek Inc. | 5 | Voter |
| Banerjea, Raja | Qualcomm Incorporated | 10 | Voter |
| Bankov, Dmitry | IITP RAS | 7 | Voter |
| baron, stephane | Canon Research Centre France | 8 | Voter |
| Barr, David | MaxLinear | 3 | Potential Voter |
| Batra, Anuj | Apple, Inc. | 2 | Voter |
| Baykas, Tuncer | Kadir Has University, Hyperion Technologies | 3 | Voter |
| BECHADERGUE, Bastien | OLEDCOMM | 7 | Voter |
| Beg, Chris | Cognitive Systems Corp. | 8 | Voter |
| Bei, Jianwei | NXP Semiconductors | 4 | Voter |
| Ben Arie, Yaron | toga networks(a huawei company) | 1 | Voter |
| Berens, Friedbert | FBConsulting Sarl | 3 | Non-Voter |
| Berger, Christian | NXP Semiconductors | 3 | Voter |
| Berkema, Alan | HP Inc. | 17 | Voter |
| Berner, Stephan | pureLiFi | 14 | Voter |
| Bhandaru, Nehru | Broadcom Corporation | 10 | Voter |
| Bims, Harry | Bims Laboratories, Inc. | 18 | Voter |
| Blandino, Steve | National Institute of Standards and Technology | 5 | Non-Voter |
| Bluschke, Andreas | Signify | 7 | Voter |
| Bober, Lennert | Fraunhofer Heinrich Hertz Institute | 2 | Voter |
| Boldy, David | Broadcom Corporation | 8 | Voter |
| Bravo, Daniel | Intel Corporation | 5 | Potential Voter |
| Bredewoud, Albert | Broadcom Corporation | 7 | Voter |
| Campos, Arturo | GiGaLiFi | 1 | Non-Voter |
| Cao, Rui | NXP Semiconductors | 9 | Voter |
| Cariou, Laurent | Intel Corporation | 5 | Voter |
| Carney, William | Sony Group Corporation | 15 | Voter |
| Cavalcanti, Dave | Intel corporation | 12 | Voter |
| CHAN, YEE | Facebook | 6 | Voter |
| Chayat, Naftali | Vayyar Imaging | 3 | Potential Voter |
| Chen, Cheng | Intel Corporation | 7 | Voter |
| Chen, Cheng-Ming | Qualcomm Incorporated | 7 | Voter |
| Chen, Evelyn | Ericsson AB | 2 | Voter |
| Chen, Na | Self | 1 | Voter |
| Chen, Xiaogang | Intel Corporation | 1 | Voter |
| Cheng, Paul | MediaTek Inc. | 6 | Voter |
| Cheng, Xilin | NXP Semiconductors | 1 | Voter |
| CHERIAN, GEORGE | Qualcomm Incorporated | 4 | Voter |
| Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. | 9 | Voter |
| Cho, Hanbyeog | Electronics and Telecommunications Research Institute (ETRI) | 3 | Non-Voter |
| Choi, Jinsoo | LG ELECTRONICS | 5 | Non-Voter |
| Choo, Seungho | Senscomm Semiconductor Co., Ltd. | 2 | Voter |
| Chu, Liwen | NXP Semiconductors | 14 | Voter |
| CHUN, JINYOUNG | LG ELECTRONICS | 5 | Voter |
| Chung, Bruce | Realtek Semiconductor Corp. | 1 | Voter |
| Chung, Chulho | SAMSUNG | 10 | Voter |
| Ciochina, Dana | Sony Corporation | 3 | Voter |
| Coffey, John | Realtek Semiconductor Corp. | 16 | Voter |
| Cordeiro, Carlos | Intel Corporation | 8 | Voter |
| da Silva, Claudio | Intel Corporation | 9 | Voter |
| Das, Dibakar | Intel corporation | 16 | Voter |
| Das, Subir | Perspecta Labs Inc | 13 | ExOfficio |
| Dash, Debashis | Apple, Inc. | 16 | Voter |
| Davies, Robert | Signify | 3 | Voter |
| de Vegt, Rolf | Qualcomm Incorporated | 5 | Voter |
| DeLaOlivaDelgado, Antonio | InterDigital, Inc. | 13 | Voter |
| Delaunay, Nicolas | EASII-IC | 2 | Non-Voter |
| Derham, Thomas | Broadcom Corporation | 17 | Voter |
| Di Taranto, Rocco | Ericsson AB | 1 | Potential Voter |
| Ding, Baokun | Huawei Technologies Co., Ltd | 3 | Voter |
| Ding, Yanyi | Panasonic Corporation | 2 | Voter |
| Dogukan, Ali | Vestel | 2 | Potential Voter |
| Dong, mingjie | Huawei Technologies Co., Ltd | 5 | Non-Voter |
| Dong, Xiandong | Xiaomi Inc. | 8 | Voter |
| Du, Rui | Huawei Technologies Co., Ltd | 5 | Voter |
| Du, Zhenguo | Huawei Technologies Co., Ltd | 5 | Voter |
| Duan, Ruchen | SAMSUNG | 5 | Voter |
| Ecclesine, Peter | Cisco Systems, Inc. | 8 | Voter |
| Edelmayer, Andras | Commsignia | 3 | Non-Voter |
| Edgar, Richard | Imagination Technologies Ltd. | 1 | Voter |
| Eitan, Alecsander | Qualcomm Incorporated | 5 | Voter |
| ElSherif, Ahmed | Qualcomm Incorporated | 2 | Voter |
| EMMELMANN, MARC | Self Employed / Koden-TI / Fraunhofer FOKUS | 10 | Voter |
| Erceg, Vinko | Broadcom Corporation | 4 | Voter |
| Fang, Juan | Intel Corporation | 9 | Potential Voter |
| Fang, Yonggang | MediaTek Inc. | 14 | Voter |
| feng, Shuling | MediaTek Inc. | 10 | Voter |
| Fischer, Matthew | Broadcom Corporation | 8 | Voter |
| Garg, Lalit | Broadcom Corporation | 1 | Voter |
| Ghaderipoor, Alireza | MediaTek Inc. | 11 | Potential Voter |
| Ghosh, Chittabrata | Intel Corporation | 13 | Voter |
| Godfrey, Tim | Electric Power Research Institute, Inc. (EPRI) | 2 | ExOfficio |
| Gong, Bo | Huawei Technologies Co., Ltd | 3 | Potential Voter |
| Goodall, David | Morse Micro | 3 | Non-Voter |
| Goto, Fumihide | DENSO | 7 | Voter |
| Grandhe, Niranjan | NXP Semiconductors | 1 | Voter |
| Grigat, Michael | Deutsche Telekom AG | 2 | Voter |
| Gu, Xiangxin | Unisoc/Vestel | 13 | Aspirant |
| GUIGNARD, Romain | Canon Research Centre France | 2 | Voter |
| Guo, Yuchen | Huawei Technologies Co., Ltd | 3 | Voter |
| Haasz, Jodi | IEEE Standards Association (IEEE-SA) | 2 | Non-Voter |
| Haider, Muhammad Kumail | Facebook | 12 | Voter |
| Hall, Robert | CONSULTANT | 2 | Voter |
| Hamilton, Mark | Ruckus/CommScope | 19 | Voter |
| HAN, CHONG | pureLiFi | 10 | Voter |
| Han, Jonghun | SAMSUNG | 7 | Voter |
| HAN, Xiao | Huawei Technologies Co., Ltd | 4 | Voter |
| Han, Zhiqiang | ZTE Corporation | 8 | Voter |
| Handte, Thomas | Sony Corporation | 5 | Voter |
| Handziski, Vlado | R3 - Reliable Realtime Radio Communications GmbH | 3 | Non-Voter |
| Harkins, Daniel | Hewlett Packard Enterprise (Aruba Networks) | 10 | Voter |
| Harrison, Edward | Anritsu Company | 20 | Voter |
| Hart, Brian | Cisco Systems, Inc. | 11 | Voter |
| Haskou, Abdullah | InterDigital, Inc. | 3 | Voter |
| hata, naoki | Yokohama National University | 1 | Non-Voter |
| Henry, Jerome | Cisco Systems, Inc. | 11 | Voter |
| Hernandez, Gerardo | Gigalifi | 3 | Non-Voter |
| Hernandez, Marco | National Institute of Information and Communications Technology (NICT) | 14 | Aspirant |
| Hervieu, Lili | Cable Television Laboratories Inc. (CableLabs) | 12 | Voter |
| Hiertz, Guido | Ericsson GmbH | 4 | Voter |
| Ho, Duncan | Qualcomm Incorporated | 11 | Voter |
| Holcomb, Jay | Itron Inc. | 3 | ExOfficio |
| Hsieh, Hung-Tao | MediaTek Inc. | 8 | Voter |
| Hsu, Chien-Fang | MediaTek Inc. | 2 | Voter |
| Hu, Chunyu | Facebook | 9 | Voter |
| Hu, Mengshi | Huawei Technologies Co., Ltd | 1 | Voter |
| Huang, Lei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | 6 | Voter |
| Huang, Po-Kai | Intel Corporation | 13 | Voter |
| Hwang, Sung Hyun | Electronics and Telecommunications Research Institute (ETRI) | 1 | Non-Voter |
| Ibrahim, Ahmed | [NV] Ahmed Ibrahim, Samsung Research America | 3 | Non-Voter |
| Ibrahim, Mostafa | SAMSUNG ELECTRONICS | 1 | Voter |
| Ikegami, Tetsushi | Meiji University | 11 | Voter |
| Inohiza, Hirohiko | Canon | 2 | Voter |
| Inoue, Yasuhiko | Self | 3 | Voter |
| Jamalabdollahi, Mohsen | Cisco Systems, Inc. | 4 | Non-Voter |
| Jang, Insun | LG ELECTRONICS | 8 | Voter |
| Jeffries, Timothy | Futurewei Technologies | 7 | Voter |
| Jeon, Eunsung | SAMSUNG ELECTRONICS | 5 | Voter |
| Jiang, Jinjing | Apple, Inc. | 1 | Voter |
| Joh, Hanjin | KT Corp. | 19 | Non-Voter |
| Jones, Allan | Activision | 6 | Voter |
| JONES, JEFFRUM | Qorvo | 18 | Voter |
| Jones, Vincent Knowles IV | Qualcomm Incorporated | 1 | Voter |
| Jung, hyojin | Hyundai Motor Company | 5 | Aspirant |
| JUNG, MYUNG CHEUL | Pantech Inc. | 2 | Non-Voter |
| Jungnickel, Volker | Fraunhofer Heinrich Hertz Institute | 7 | Voter |
| Kadampot, Ishaque Ashar | Qualcomm Incorporated | 3 | Voter |
| Kain, Carl | USDoT; Noblis Inc. | 12 | Voter |
| Kakani, Naveen | Qualcomm Incorporated | 5 | Voter |
| kamath, Manoj | Broadcom Corporation | 5 | Potential Voter |
| Kamel, Mahmoud | InterDigital, Inc. | 8 | Voter |
| Kandala, Srinivas | SAMSUNG | 10 | Voter |
| Kasher, Assaf | Qualcomm Incorporated | 8 | Voter |
| Kennedy, Richard | Self Employed/Huawei Technologies Co., Ltd | 6 | Aspirant |
| Kenney, John | TOYOTA InfoTechnology Center U.S.A. | 4 | Voter |
| Kerry, Stuart | OK-Brit; Self | 15 | Voter |
| Khan, Naseem | Leidos Engineering. LLC | 5 | Voter |
| Khorov, Evgeny | IITP RAS | 6 | Voter |
| Kim, Jeongki | Self | 2 | Voter |
| Kim, Myeong-Jin | SAMSUNG | 8 | Voter |
| kim, namyeong | LG ELECTRONICS | 6 | Voter |
| Kim, Sang Gook | LG ELECTRONICS | 16 | Voter |
| Kim, Sanghyun | WILUS Inc | 2 | Voter |
| Kim, Wonjung | LG Uplus | 7 | Non-Voter |
| Kim, Yongho | Korea National University of Transportation | 10 | Voter |
| Kim, Youhan | Qualcomm Incorporated | 17 | Voter |
| KIM, Youngjae | Telecommunications Technology Association (TTA) | 2 | Aspirant |
| Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) | 9 | Voter |
| Kitazawa, Shoichi | Muroran IT | 9 | Voter |
| Klein, Arik | Huawei Technologies Co., Ltd | 6 | Voter |
| Klimakov, Andrey | Huawei Technologies Co., Ltd | 10 | Voter |
| Kneckt, Jarkko | Apple, Inc. | 5 | Voter |
| Ko, Geonjung | WILUS Institute | 6 | Voter |
| Kondo, Yoshihisa | Advanced Telecommunications Research Institute International (ATR) | 3 | Voter |
| Koundourakis, Michail | Samsung Cambridge Solution Centre | 5 | Aspirant |
| Kumar, Manish | NXP Semiconductors | 4 | Voter |
| Kureev, Aleksey | IITP RAS | 1 | Voter |
| Kwon, Young Hoon | NXP Semiconductors | 12 | Voter |
| Lalam, Massinissa | SAGEMCOM BROADBAND SAS | 13 | Voter |
| Lan, Zhou | Broadcom Corporation | 3 | Voter |
| Lansford, James | Qualcomm Incorporated; University of Colorado at Boulder | 12 | Voter |
| Lee, Hong Won | LG ELECTRONICS | 3 | Aspirant |
| Lee, Hyeong Ho | Netvision Telecom Inc. | 3 | Voter |
| Lee, Il-Gu | Sungshin University | 9 | Potential Voter |
| Lee, Jae Seung | Electronics and Telecommunications Research Institute (ETRI) | 1 | Voter |
| Lee, Nancy | Signify | 9 | Voter |
| Lee, Wookbong | SAMSUNG | 5 | Voter |
| Leng, Shiyang | Samsung Research America | 4 | Non-Voter |
| Lepp, James | None - Self-funded | 1 | Voter |
| Levitsky, Ilya | IITP RAS | 6 | Voter |
| Levy, Joseph | InterDigital, Inc. | 22 | Voter |
| Li, Guoqing | Facebook | 2 | Voter |
| Li, Jialing | Qualcomm Technologies, Inc. | 5 | Voter |
| Li, Jianhui | Huawei Technologies Co., Ltd | 5 | Voter |
| Li, Qinghua | Intel Corporation | 3 | Voter |
| li, yun | ZTE Corporation | 2 | Non-Voter |
| Li, Yunbo | Huawei Technologies Co., Ltd | 2 | Voter |
| Lim, Dong Guk | LG ELECTRONICS | 7 | Voter |
| lim, taesung | LG ELECTRONICS | 3 | Aspirant |
| Lin, Zinan | InterDigital, Inc. | 12 | Aspirant |
| Lindskog, Erik | SAMSUNG | 10 | Voter |
| LIU, CHENCHEN | Huawei Technologies Co., Ltd | 5 | Voter |
| Liu, Der-Zheng | Realtek Semiconductor Corp. | 7 | Voter |
| Liu, Jeff | Broadcom Corporation | 3 | Voter |
| Liu, Jianhan | MediaTek Inc. | 5 | Voter |
| Liu, Yong | Apple, Inc. | 9 | Voter |
| Loginov, Vyacheslav | IITP RAS | 5 | Voter |
| Lopez, Miguel | Ericsson AB | 9 | Voter |
| Lorgeoux, Mikael | Canon Research Centre France | 3 | Potential Voter |
| Lou, Hanqing | InterDigital, Inc. | 8 | Voter |
| Lou, Hui-Ling | NXP Semiconductors | 1 | Voter |
| Lu, kaiying | MediaTek Inc. | 14 | Voter |
| Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | 11 | Voter |
| LU, Yuxin | Huawei Technologies Co., Ltd | 3 | Aspirant |
| Lumbatis, Kurt | CommScope, Inc. | 15 | Aspirant |
| Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. | 8 | Voter |
| Lyakh, Mikhail | ON Semiconductor | 14 | Aspirant |
| Ma, Li | MediaTek Inc. | 7 | Voter |
| Madpuwar, Girish | Broadcom Corporation | 7 | Voter |
| Malinen, Jouni | Qualcomm Incorporated | 15 | Voter |
| Mano, Hiroshi | Koden Techno Info K.K. | 7 | Voter |
| Martinez Vazquez, Marcos | MaxLinear Corp | 2 | Voter |
| Max, Sebastian | Ericsson AB | 6 | Voter |
| McCann, Stephen | Huawei Technologies Co., Ltd | 14 | Voter |
| McGuire, Colin | The MathWorks, Inc. | 20 | Non-Voter |
| Mehrnoush, Morteza | Facebook | 1 | Voter |
| MELZER, Ezer | Toga Networks, a Huawei company | 3 | Voter |
| Memisoglu, Ebubekir | Istanbul Medipol University; Vestel | 7 | Voter |
| Merlin, Simone | Qualcomm Incorporated | 5 | Voter |
| Minotani, Jun | Panasonic Corporation | 4 | Voter |
| Mirfakhraei, Khashayar | Zeku/Self Employed | 2 | Voter |
| Mohanty, Bibhu | Qualcomm Incorporated | 4 | Voter |
| Monajemi, Pooya | Cisco Systems, Inc. | 3 | Voter |
| Montemurro, Michael | Huawei Technologies Co., Ltd | 23 | Voter |
| Montreuil, Leo | Broadcom Corporation | 8 | Voter |
| Moon, Juseong | Korea National University of Transportation | 9 | Potential Voter |
| Moran, Ashley | IEEE Standards Association (IEEE-SA) | 5 | Non-Voter |
| Morioka, Hitoshi | SRC Software | 13 | Voter |
| Motozuka, Hiroyuki | Panasonic Corporation | 6 | Voter |
| Mueller, Robert | Technische Universitaet Ilmenau/Fraunhofer IIS | 9 | Voter |
| Murti, Wisnu | SeoulTech | 6 | Non-Voter |
| Myles, Andrew | Cisco Systems, Inc. | 5 | Voter |
| Naik, Gaurang | Qualcomm Incorporated | 12 | Aspirant |
| Nakano, Hiroki | CAHI Corporation; Kyoto University | 1 | Voter |
| Nam, Junyoung | Qualcomm Incorporated | 5 | Voter |
| NANDAGOPALAN, SAI SHANKAR | Infineon Technologies | 20 | Voter |
| Nayak, Peshal | Samsung Research America | 6 | Non-Voter |
| Nezou, Patrice | Canon Research Centre France | 6 | Voter |
| Ng, Boon Loong | Samsung Research America | 14 | Aspirant |
| Nguyen, An | DHS/CISA/ECD | 8 | Voter |
| Nikolich, Paul | self employed/various | 4 | ExOfficio |
| noh, yujin | Senscomm | 7 | Voter |
| Nurani Krishnan, Neelakantan | Qualcomm Incorporated | 1 | Voter |
| Oh, Hyun Seo | Electronics and Telecommunications Research Institute (ETRI) | 6 | Voter |
| Orr, Stephen | Cisco Systems, Inc. | 6 | Potential Voter |
| Ouchi, Masatomo | Canon | 2 | Voter |
| Oyama, Satoshi | Association of Radio Industries and Businesses (ARIB) | 14 | Voter |
| Ozbakis, Basak | VESTEL Electronics Corp. | 8 | Voter |
| Palayur, Saju | Maxlinear Corp | 5 | Potential Voter |
| Palm, Stephen | Broadcom Corporation | 12 | Voter |
| Pare, Thomas | MediaTek Inc. | 11 | Voter |
| Park, Eunsung | LG ELECTRONICS | 7 | Voter |
| Park, Minyoung | Intel Corporation | 7 | Voter |
| Patil, Abhishek | Qualcomm Incorporated | 12 | Voter |
| Patwardhan, Gaurav | Hewlett Packard Enterprise | 11 | Voter |
| Perahia, Eldad | Hewlett Packard Enterprise | 3 | Voter |
| PESIN, ANTHONY | InterDigital, Inc. | 5 | Voter |
| Peterson, Bror | Qorvo | 15 | Non-Voter |
| Petrick, Albert | Jones-Petrick and Associates, LLC./Interdigital | 19 | Voter |
| Petry, Brian | Broadcom Corporation | 1 | Voter |
| Pettersson, Charlie | Ericsson AB | 5 | Voter |
| Pirhonen, Riku | NXP Semiconductors | 1 | Voter |
| porat, ron | Broadcom Corporation | 3 | Voter |
| Prabhakaran, Dinakar | Broadcom Corporation | 1 | Voter |
| Puducheri, Srinath | Broadcom Corporation | 2 | Voter |
| Pulikkoonattu, Rethnakaran | Broadcom Corporation | 6 | Non-Voter |
| Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. | 10 | Voter |
| Qi, Emily | Intel Corporation | 13 | Voter |
| Rafique, Saira | Istanbul Medipol University; Vestel | 7 | Voter |
| Rai, Kapil | Qualcomm Technologies, Inc. | 10 | Voter |
| Raissinia, Alireza | Qualcomm Incorporated | 10 | Voter |
| Ranganath, Ashok | SAMSUNG | 7 | Potential Voter |
| Rantala, Enrico-Henrik | Nokia | 2 | Voter |
| Ratnam, Vishnu | Samsung Research America | 4 | Non-Voter |
| Redlich, Oded | Huawei Technologies Co., Ltd | 4 | Voter |
| Rege, Kiran | Perspecta Labs | 5 | Potential Voter |
| Regev, Dror | Toga Networks (A Huawei Company) | 1 | Voter |
| REICH, MOR | Togan Networks, a Huawei Company | 2 | Voter |
| Reshef, Ehud | Intel Corporation | 1 | Aspirant |
| Restuccia, Francesco | Northeastern University | 3 | Non-Voter |
| Rezk, Meriam | Qualcomm Incorporated | 5 | Voter |
| Riegel, Maximilian | Nokia | 6 | Voter |
| RISON, Mark | Samsung Cambridge Solution Centre | 18 | Voter |
| Robert, Joerg | TU Ilmenau, Fraunhofer IIS | 2 | Voter |
| rocha, alessandra | Wimax forum | 1 | Non-Voter |
| Rolfe, Benjamin | Blind Creek Associates | 4 | Potential Voter |
| ROPITAULT, Tanguy | NIST, Prometheus Computing LLC | 2 | Non-Voter |
| Rosdahl, Jon | Qualcomm Technologies, Inc. | 24 | Voter |
| Roy, Richard | Self Employed/SRA International | 17 | Aspirant |
| Sadeghi, Bahareh | Intel Corporation | 8 | Voter |
| Salem, Mohamed | Huawei Technologies Co., Ltd | 1 | Voter |
| Salman, Hanadi | Istanbul Medipol University; VESTEL | 2 | Voter |
| Sambasivan, Sam | AT&T | 11 | Voter |
| Sand, Stephan | German Aerospace Center (DLR) | 15 | Voter |
| Sandhu, Shivraj | Qualcomm Incorporated | 10 | Voter |
| Sato, Naotaka | Sony Group Corporation | 2 | Voter |
| Schelstraete, Sigurd | MaxLinear | 6 | Voter |
| Sedin, Jonas | Ericsson AB | 4 | Voter |
| Segev, Jonathan | Intel corporation | 13 | Voter |
| Seok, Yongho | MediaTek Inc. | 4 | Voter |
| Serafimovski, Nikola | pureLiFi | 10 | Voter |
| Sevin, Julien | Canon Research Centre France | 2 | Voter |
| Shafin, Rubayet | Samsung Research America | 13 | Aspirant |
| Shah, Kunal | Itron Inc. | 9 | Voter |
| Shah, Tushar | Apple, Inc. | 2 | Non-Voter |
| Shalom, Hai | Google | 3 | Non-Voter |
| Shellhammer, Stephen | Qualcomm Incorporated | 12 | ExOfficio |
| Sherlock, Ian | Texas Instruments Inc. | 22 | Voter |
| Shilo, Shimi | Huawei Technologies Co., Ltd | 6 | Voter |
| Smely, Di Dieter | Kapsch TrafficCom AG | 3 | Potential Voter |
| Smith, Graham | SRT Wireless | 8 | Voter |
| Solaija, Muhammad Sohaib | Istanbul Medipol University; Vestel | 5 | Voter |
| Song, Hao | Intel Corporation | 2 | Non-Voter |
| Sosack, Robert | Molex Incorporated | 18 | Voter |
| Srinivasan, Shree Raman | Qualcomm Incorporated | 4 | Potential Voter |
| Stacey, Robert | Intel Corporation | 13 | Voter |
| Stanley, Dorothy | Hewlett Packard Enterprise | 16 | Voter |
| Startsev, Ivan | IITP RAS | 1 | Voter |
| Stavridis, Athanasios | Ericsson AB | 9 | Voter |
| Stephens, Adrian | Self | 2 | Voter |
| Stott, Noel | Keysight Technologies | 7 | Voter |
| Strauch, Paul | Qualcomm Incorporated | 7 | Voter |
| Strickland, Stuart | Hewlett Packard Enterprise (Aruba Networks) | 5 | Non-Voter |
| Su, Hang | Broadcom Corporation | 2 | Voter |
| SUH, JUNG HOON | Huawei Technologies Co., Ltd | 8 | Voter |
| Sumi, Takenori | Mitsubishi Electric Corporation | 5 | Voter |
| Sun, Bo | ZTE Corporation | 17 | Voter |
| Sun, Li-Hsiang | Sony Corporation | 6 | Voter |
| Sun, Yanjun | Qualcomm Incorporated | 7 | Voter |
| Sundman, Dennis | Ericsson AB | 6 | Voter |
| SURACI, FRANK | U.S. Department of Homeland Security | 4 | Voter |
| Takai, Mineo | Space-Time Engineering | 3 | Voter |
| Tan, Danny | Huawei Technologies Co., Ltd | 2 | Voter |
| Tanaka, Yusuke | Sony Group Corporation | 4 | Voter |
| Thompson, Tom | IEEE Standards Association (IEEE-SA) | 3 | Non-Voter |
| Tian, Bin | Qualcomm Incorporated | 5 | Voter |
| Tian, Tao | Unisoc Comm. | 15 | Voter |
| Tolpin, Alexander | Intel Corporation | 8 | Potential Voter |
| Torab Jahromi, Payam | Facebook | 12 | Voter |
| Trainin, Solomon | Qualcomm Incorporated | 5 | Voter |
| Tsai, Tsung-Han | MediaTek Inc. | 3 | Potential Voter |
| Tsodik, Genadiy | Huawei Technologies Co., Ltd | 7 | Voter |
| Tsujimaru, Yuki | Canon Inc. | 1 | Aspirant |
| Turkmen, Halise | Istanbul Medipol University; Vestel | 5 | Voter |
| Uln, Kiran | Cypress Semiconductor Corporation | 3 | Voter |
| Unterhuber, Paul | German Aerospace Center (DLR) | 2 | Voter |
| Urabe, Yoshio | Panasonic Corporation | 5 | Voter |
| Van Nee, Richard | Qualcomm Incorporated | 1 | Voter |
| Van Zelst, Allert | Qualcomm Incorporated | 3 | Voter |
| Varshney, Prabodh | Nokia | 11 | Voter |
| Venkatesan, Ganesh | Intel Corporation | 9 | Voter |
| Verenzuela, Daniel | Sony Corporation | 2 | Voter |
| Verma, Sindhu | Broadcom Corporation | 2 | Voter |
| Vermani, Sameer | Qualcomm Technologies, Inc. | 10 | Voter |
| VIGER, Pascal | Canon Research Centre France | 9 | Voter |
| Wang, Chao Chun | MediaTek Inc. | 11 | Voter |
| Wang, Hao | Tencent | 7 | Voter |
| Wang, Huizhao | Quantenna Communications, Inc. | 8 | Voter |
| Wang, Jue | ZTE Corporation | 4 | Aspirant |
| Wang, Lei | Futurewei Technologies | 18 | Voter |
| Wang, Pu | Mitsubishi Electric Research Labs (MERL) | 8 | Voter |
| Wang, Qi | Apple, Inc. | 4 | Non-Voter |
| Wang, Xiaofei | InterDigital, Inc. | 11 | Non-Voter |
| Wang, Xinrong | Intel Corporation | 2 | Non-Voter |
| Want, Roy | Google | 5 | Voter |
| Ward, Lisa | Rohde & Schwarz | 10 | Voter |
| Watanabe, Fujio | NTT DoCoMo, Inc. | 3 | Non-Voter |
| Wendt, Matthias | Signify | 8 | Voter |
| Wentink, Menzo | Qualcomm Incorporated | 5 | Voter |
| Wilhelmsson, Leif | Ericsson AB | 9 | Voter |
| Wu, Chung | TP-Link Corporation Limited | 3 | Non-Voter |
| Wu, Hao | XGIMI Technology Co.Ltd | 3 | Aspirant |
| Wu, Kanke | Qualcomm Incorporated | 3 | Voter |
| Wu, Tianyu | Apple, Inc. | 7 | Voter |
| Wullert, John | Perspecta Labs | 9 | Voter |
| Xiao, Bo | ZTE Corporation | 6 | Aspirant |
| Xin, Liangxiao | Sony Corporation | 3 | Voter |
| Xin, Yan | Huawei Technologies Co., Ltd | 9 | Voter |
| Xue, Qi | Qualcomm Incorporated | 5 | Voter |
| Xue, Ruifeng | Cisco Systems, Inc. | 4 | Voter |
| YAGHOOBI, HASSAN | Intel Corporation | 13 | Voter |
| Yan, Zhongjiang | Northwestern Polytechnical University | 1 | Voter |
| Yang, Bo | Huawei Technologies Co., Ltd | 2 | Voter |
| Yang, Jay | Nokia | 5 | Voter |
| YANG, RUI | InterDigital, Inc. | 9 | Voter |
| Yang, Steve TS | MediaTek Inc. | 5 | Voter |
| Yang, Xun | Huawei Technologies Co., Ltd | 3 | Voter |
| Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) | 11 | Voter |
| yaodong, zhang | ZTE Corporation | 1 | Non-Voter |
| Yee, James | MediaTek Inc. | 12 | Voter |
| Yee, Peter | NSA-CSD | 16 | Voter |
| yi, yongjiang | Futurewei Technologies | 13 | Voter |
| Yokoyama, Takahiro | Association of Radio Industries and Businesses (ARIB) | 3 | Aspirant |
| Yoo, Homin | LG ELECTRONICS | 1 | Aspirant |
| Yoon, Jeonghwan | LG ELECTRONICS | 1 | Aspirant |
| Young, Christopher | Broadcom Corporation | 10 | Voter |
| Yu, Heejung | Korea University | 7 | Potential Voter |
| Yu, Jian | Huawei Technologies Co., Ltd | 5 | Voter |
| Yu, Mao | NXP Semiconductors/Anyka | 7 | Non-Voter |
| Zaman, Malia | IEEE Standards Association (IEEE-SA) | 2 | Non-Voter |
| ZEGRAR, Salah Eddine | Istanbul Medipol University; Vestel | 10 | Voter |
| Zeng, Ruochen | NXP Semiconductors | 6 | Voter |
| Zhang, Hongyuan | NXP Semiconductors | 1 | Voter |
| Zhang, Meihong | Huawei Technologies Co., Ltd | 3 | Voter |
| Zhang, Yan | NXP Semiconductors | 8 | Voter |
| Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | 6 | Aspirant |
| Zou, Tristan | Qualcomm Incorporated | 2 | Voter |
| Zuniga, Juan Carlos | SIGFOX | 2 | Non-Voter |
| Zuo, Xin | Tencent | 2 | Voter |

**Annex B : Working Group Officers**

**Working Group**

|  |  |  |
| --- | --- | --- |
| Name (Affiliation) | Position | Contact Details |
| Dorothy Stanley(HP Enterprise) | IEEE 802.11 Working Group Chair | +1( 630) 363-1389 dstanley@ieee.org |
| Jon Rosdahl(Qualcomm) | 1st Vice Chair (Venues and meeting planning)Treasurer | +1 (801) 492-4023jrosdahl@ieee.org |
| Robert Stacey(Intel Corporation) | 2nd Vice Chair (Rules and reflectors)IEEE 802 (LMSC) EC delegate | +1 (503) 712 4447robert.stacey@intel.com |
| Stephen McCann(Huawei Technologies Co., Ltd) | Secretary | stephen.mccann@ieee.org |
| Peter Ecclesine(Cisco Systems, Inc.) | Co-Technical Editor | +1 (408) 710-3403petere@ieee.org |
| Robert Stacey(Intel Corporation) | Co-Technical Editor802.11 Assigned Numbers Authority | +1 (503) 712 4447robert.stacey@intel.com |

**Standing Committees**

|  |  |  |
| --- | --- | --- |
| Name (Affiliation) | Position | Contact Details |
| Jim Lansford(Qualcomm) | Wireless Next Generation (WNG) Chair | +1-719-286-8660jim.lansford@ieee.org |
| Joseph Levy (InterDigital Communications Inc.) | Advanced Access Network Interface (AANI) Chair | +1.631.622.4139jslevy@ieee.org  |
| Mark Hamilton(Ruckus Wireless) | Architecture (ARC) Chair | +1 (303) 818-8472mark.hamilton2152@gmail.com |
| Jon Rosdahl(Qualcomm) | Project Authorization Request (PAR) review Chair | +1 (801) 492-4023jrosdahl@ieee.org |
| Andrew Myles(Cisco) | Coexistence Standing Committee Chair | +61 418 656587amyles@cisco.com |

**Task Groups**

|  |  |  |
| --- | --- | --- |
| Name (Affiliation) | Position | Contact Details |
| Jonathan Segev (Intel Corporation) | TGaz ChairNext Generation Positioning (NGP) | +972-54-2403587jonathan.segev@intel.com |
| Nikola Serafimovski (pureLiFi) | TGbb ChairLight Communication (LC) | +44 131 516 1816nikola.serafimovski@purelifi.com  |
| Marc Emmelmann (Koden-TI) | TGbc ChairBroadcast Services (BCS) | marc.emmelmann@me.com |
| Bo Sun (ZTE) | TGbd ChairNext Generation V2X (NGV) | sun.bo1@zte.com.cn |
| Alfred Asterjadhi(Qualcomm) | TGbe ChairExtremely High Throughput (EHT) | aasterja@qti.qualcomm.com |
| Tony Xiao Han(Huawei Technologies Co., Ltd) | TGbf ChairWLAN Sensing (SENS) | tony.hanxiao@huawei.com  |
| Mark Hamilton(Ruckus/CommScope Wireless) | TGbh ChairRandom and Changing MAC address (RCM) | +1 (303) 818-8472mark.hamilton2152@gmail.com |
| Carol Ansley(Cox Communications) | TGbi ChairRandom and Changing MAC address (RCM) | carol@ansley.com  |
| Michael Montemurro (Huawei Technologies Co., Ltd) | TGme Chair802.11 revision project - P802.11REVme | montemurro.michael@gmail.com  |

|  |
| --- |
|  |

**Study Groups (SG) & Topic Interest Groups (TIG)**

|  |  |  |
| --- | --- | --- |
| Name (Affiliation)  | Position | Contact Details |

**Ad-Hoc Groups (AHG)**

|  |  |  |
| --- | --- | --- |
| Name (Affiliation)  | Position | Contact Details |
| Hassan YAGHOOBI(Intel) | ITU Ad-Hoc | hassan.yaghoobi@intel.com  |

**Liaison Officials to non-IEEE 802 organizations**

|  |  |  |
| --- | --- | --- |
| Name (Affiliation) | Position | Contact Details |
| Peter Yee(Akayla) | Liaison to IETF(Internet Engineering Task Force) | peter@akayla.com |
| Ian Sherlock(Texas Instruments Inc.) | Liaison to WFA(Wi-Fi Alliance) | +1-972-995-2011isherlock@ieee.org |

**Liaison Officials to IEEE 802 organizations**

|  |  |  |
| --- | --- | --- |
| Name (Affiliation) | Position | Contact Details |
| Jay Holcomb(Itron) | Liaison to IEEE 802.18 | +1 (509) 891-3281jay.holcomb@itron.com |
| Tuncer Baykas(Istanbul Medipol Universitesi) | Liaison to IEEE 802.19 | tbaykas@ieee.org  |
| Tim Godfrey(Electric Power Research Institute) | Liaison to IEEE 802.24 | +1 (650) 855-8584 (office)tim.godfrey@ieee.org |
| John Kenney(Toyota) | Liaison to IEEE 1609 | jkenney@us.toyota-itc.com  |

**Annex C : Minutes**

This Annex contains references to all IEEE 802.11 SC/TG/SG & Ad Hoc Committee (AHC) minutes from this meeting. Please note that they are NOT subject to the approval of these minutes, but are confirmed and approved by their individual group in the opening meeting at their next session.

|  |  |  |
| --- | --- | --- |
| WG | TE | 21-0674r1 |
| TGme | TG | 21-0840r0 |
| TGaz | TG | 21-0807r0 |
| TGbb | TG | 21-0847r0 |
| TGbc | TG | 21-0773r0 |
| TGbd | TG | 21-0806r0 |
| TGbe | TG | 21-0873r0 |
| TGbf | TG | 21-0870r2 |
| TGbh | TG | 21-0882r0 |
| TGbi | TG | 21-0898r1 |
| AANI | SC | 21-0818r0 |
| COEX | SC | 21-0973r0 |
| WNG | SC | 21-0805r0 |
| JTC 802 | SC | 21-0820r0 |
| ARC | SC | 21-0795r0 |
| ITU | AH | 21-0715r0 |
| PAR | SC | Did not meet |

**Annex D : Revisions and Standards Pipeline**

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**IEEE 802.11 Standards Pipeline**

End.