IEEE P802.11
Wireless LANs

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| Minutes of the IEEE P802.11 Full Working Group |
| Date: 2023-03-17 |
| Author(s): |
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Abstract

This document constitutes the minutes of the IEEE 802.11 full working group for the March 2023 session.

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

**Abbreviations:**

A: Answer

C: Comment

Q: Question

TG: Task Group

TIG: Topic Interest Group

SG: Study Group

**IEEE 802.11 Plenary Session #198**

**March 12th – 17th, 2023**

**IEEE 802.11 Opening Plenary, Monday March 13th, 2023**

Presiding chair: Dorothy Stanley (Hewlett Packard Enterprise) opened the meeting at 10:38 Eastern Time (ET) and declared quorum for the session.

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

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

Secretary: Stephen McCann Huawei Technologies Co., Ltd

There are 491 Voters, 68 Potential Voters and 11 Ex Officio voters of IEEE 802.11\*

There were 449 people in the meeting (IMAT), with 152 attending in person (in the room).

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

1. **Notices** (11-23-0177r0)
	1. Chair: Please note the information about the meeting decorum.
	2. Are there any members of the press present?
		1. None.
	3. Chair: Please note that if you wish to write an article or a blog about this session you need to announce your intention.
	4. IEEE Staff present
		1. Christy Bahn is the staff representative for 802.11.
	5. Please note that this session requires a registration fee to be paid.
2. **Approve/modify working group agenda** (11-23-0176r2)
	1. This is a summary of the meeting today. Please note the schedule for this session on the separate tab “Schedule”. Several new meetings have been added, especially for TGbe.
	2. **Move to approve the agenda 11-23-0176r2 for the Monday opening plenary**
		1. Moved: Marc Emmelmann, 2nd: Ian Sherlock
		2. No objection to approving by unanimous consent
3. **January 2023 WG Minutes**
	1. **Move to approve the January 2023 WG minutes document 11-23-0004r1**
	2. Moved: Stephen McCann, 2nd: Stuart Kerry
	3. Following neither discussion nor dissent the minutes were approved by unanimous consent.
4. **New Attendees** (11-23-0188r1 slide #4)
	1. **Straw Poll: Are you a new attendee to IEEE 802.11?**
		1. Yes: 15
		2. No: 145
	2. There will be a New Members meeting this week on Tuesday March 14th at 10:30 ET. Everyone is welcome to join this meeting.
5. **Call for essential Patents** (11-23-0204r0)
	1. The current PatCom rules were read out, including the call 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** (11-23-0204r0)
	1. The slides about IEEE 802 meeting participation and IEEE SA copyright were also read.
	2. Expected participant behavior was also announced.
	3. Remember to do your attendance for this meeting. To achieve 75%, which counts towards an attendance credit for the session, you must attend 9 meeting slots.
	4. Regarding slide #21, this is a reminder about the abstain vote.
7. **Announcements** (11-23-0177r0)
	1. **Liaisons** (slide #4)
		1. Chair: There have been no liaison activities since January 2023.
	2. **EC and IEEE-SA standard board decisions** (slides #5 and #6)
		1. Chair: These are some items from recent EC and IEEE-SA meetings.
	3. **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, IEEE 802.1 and IEEE 802 JTC1 SC.
8. **Logistics and Key events/activities**
	1. <https://mentor.ieee.org/802-ec/dcn/23/ec-23-0020-00-00EC-802-0323-thingstoknow-atlanta.pptx>
	2. This document provides information about this week’s session.
	3. If you any audio-visual issues this week, please contact the registration desk, as shown on slide #5.
	4. Please remember to register your attendance using IMAT.
	5. This session requires registration, so please follow the link to pay the registration fee.
	6. On Wednesday there is a social at the Georgia Aquarium (in Atlanta) to celebrate the 40th anniversary of IEEE 802, although it is 3 years late.
	7. The busses will leave from the lobby level, slightly to one side. They start at 6pm and finish at 9.30pm.
	8. There is also a 40th anniversary polo-shirt for all in-person attendees.
	9. The next plenary session is at the Estrel hotel in Berlin in July 2023.
	10. The next interim session is in Orlando in May 2023 and the registration page is already open.
	11. Chair: Regarding the Orlando hotel, can you mention the hotel room block?
	12. Vice-chair 1: The room rate is $199 (including the resort fee). Normally it would be $285 or $300 per night, so we have a very good deal. Also note that flying out of Orlando airport is very slow, as the security lines are long.
	13. C: Regarding the Berlin meeting, the German school holidays will start on the Thursday of that week, so please plan your flights as soon as possible. The new Berlin airport is now open. There is a new train line from the airport towards the hotel.
9. **Timeline**
	1. The updated timeline chart was presented to show that various changes have occurred with the publication of 11bd and 11az.
10. **11az and 11bd completion** (11-23-0177r0 slide #12)
	1. 11az and 11bd have been recently published.
	2. Recognition was given for the people involved in the 11az project that is now complete.
	3. Recognition was given for the people involved in the 11bd project that is now complete.
11. **WG Information** (11-23-0177r0 slide #13)
	1. These slides contain information about the following topics:
		1. TGbe PAR extension
		2. IEEE 802.11 officers
		3. Appointment/Confirmation of Coex SC chair
		4. Recent Ballots
		5. Chair: If you came to this session as a potential voter, you are now a voter and are able to vote this week.
		6. Historic membership slides
12. **Group Summaries** (11-23-0203r0)
	1. Special notes were mentioned for the following groups:
	2. **Editors’ meeting and ANA** (slides #3 & #4)
		1. There is an editors’ meeting at 07:00 Eastern on Tuesday morning. Other topics include the ANA status (11-11-0270r66).
		2. No questions.
	3. **ARC SC** (slide #5)
		1. There have been 2 teleconferences since the January 2023 meeting. There are 2 meetings this week.
		2. No questions.
	4. **Coex** **SC** (slide #7)
		1. This standing committee will meet once this week.
		2. There will be a vice-chair election this week.
		3. No questions.
	5. **PAR** **SC** (slide #8)
		1. There are 6 PARs that require reviews this week.
		2. There are three meetings this week.
		3. No questions.
	6. **WNG** (slide #9)
		1. There is 1 presentation planned for this week’s meeting.
		2. No questions.
	7. **JTC1** **SC** (slide #10)
		1. There is 1 meeting during this session.
		2. No questions.
	8. **REVme** (slide #13)
		1. The main goal this week is to continue working on comments from the recent letter ballot (LB) 270. There are 6 meetings this week.
		2. No questions.
	9. **TGbb** (slide #14)
		1. The group will work on resolving comments from the current SA ballot that finishes tomorrow. There are 2 more meetings this week.
		2. No questions.
	10. **TGbc** (slide #15)
		1. This group is also currently in SA ballot that finishes tomorrow. The work this week will concentrate on resolving any comments from that ballot.
		2. No questions.
	11. **TGbe** (slide #17)
		1. The work is starting resolve the 3343 comments from the recent D3.0 letter ballot that passed with about 80% approval.
		2. There are many meetings this week to start working on these comments.
		3. Chair: The 11be D3.0 is now available for sale in the IEEE store.
		4. No questions.
	12. **TGbf** (slide #19)
		1. The group has also completed its initial D1.0 letter ballot that passed with 77.7% approval.
		2. The work this week will be to start resolving the 1302 comments that were received.
		3. Chair: Regarding the 11bf D1.0, I would like the opinion of the TGbf members to decide if they want this draft to be on sale in the IEEE store or not.
		4. No questions.
	13. **TGbh** (slide #23)
		1. The group has a D0.2 and will work on comments received from an earlier comment collection. There are now discussions about possibly starting a D1.0 letter ballot this week.
		2. No questions.
	14. **TGbi** (slide #24)
		1. The group is still addressing feature definitions this week and is requesting more technical submissions.
		2. No questions.
	15. **TGbk** (slide #25)
		1. There is now a D0.1 of the specification framework document (SFD) available. The work this week will continue to evolve the SFD and consider some initial technical submissions.
		2. No questions.
	16. **UHR SG** (slide #27)
		1. There have been 2 teleconferences since the January 2023 meeting. The work this week is to try and complete the PAR and CSD.
		2. No questions.
	17. **AIML TIG** (slide #29)
		1. The activity this week is to continue the discussion of use cases and technical feasibilities for possible technologies. There are 3 meetings this week.
		2. No questions.
	18. **AMP TIG** (slide #31)
		1. The group has considered several technical submissions since January 2023 and there will be a progress report in the mid-week plenary this week.
		2. There will be 3 meetings this week.
		3. No questions.
	19. **ITU ad-hoc** (slide #33)
		1. There will be 1 meeting this week for various discussion about ITU issues.
		2. No questions.
13. **Working Group Motions (Old Business)** (11-23-2117r0)
	1. **Motion 1: TGbk Chair**
		1. **Confirm Marc Emmelmann as the IEEE 802.11 Coexistence Standing Committee (SC) chair.**
		2. Moved: Jonathan Segev, Seconded: Guido Hiertz
		3. Result: approved by unanimous consent
14. **Memorial: Donna Ferguson** (11-23-0177r0 slide 27)
	1. Chair: Donna Fergusson, from Face to Face meeting events, recently passed away and she has been with IEEE 802 for almost 40 years. I would like to now have a minute of silence in her honor.
	2. There is a memorial book by the IEEE 802 registration desk.
15. **Announcements**
	1. **Tutorials**
	2. There are 2 tutorials this evening. The first one is regarding light communications from the 802.11 and 802.15 point of view. Please attend this if you are interested in this technology.
	3. **Awards**
	4. In January 2023, there were many awards presented to people. There are a few left that we could not hand out at the time. There is a box of awards at the front of the room that people are happy to come and collect, either for themselves or their colleagues.
16. **AoB**
	1. Chair: Please remember to record your attendance this week.
17. **Recess**
	1. Meeting recessed at 12:21 ET.

**Wednesday, March 15th, 2023**

**IEEE 802.11 Mid-week Plenary**

Call to order at 13:32 ET by Dorothy Stanley (HPE).

There were 107 attending in person (in the room) and 320 on the IMAT attendance server.

1. **Approve/modify working group agenda** (11-23-0176r3)
	1. Chair: There have been some minor changes to the agenda since the opening plenary. Several groups have completed their work for the week and their slots have been released.
	2. The AMP TIG have completed their business for the week and so their Thursday meeting AM2 slot has been removed.
	3. TGme requests another slot. Thursday AM1 is re-allocated, as TGbb have also adjourned for the week.
	4. **Approve the agenda for the today’s meeting as shown in 11-23-0176r4.**
		1. Moved: Ian Sherlock, 2nd: Marc Emmelmann
		2. No objection to approving by unanimous consent.
2. **Announcements** (11-23-0178r0)
	1. **Participation** (slides #4 - #6)
		1. Please can you all remember to read these slides and understand that everyone is here as an individual subject matter expert.
	2. **Call for essential patents** (slide #7)
		1. This is the Call for Essential Patents
		2. No statements.
		3. No questions.
	3. **Meeting decorum** (slide #8)
		1. No questions.
		2. No members of the press are present.
3. **Social**
	1. This is a reminder about the social this evening that will be held at the Georgia Aquarium, here in Atlanta. The busses will start at 18:00 ET from outside the hotel and the last one will return at 21:30 ET. Please remember to take your social event badge with you. The entrance door for groups is round the back. You can obtain a wrist band which will allow you to visit the rest of the aquarium.
	2. In addition, there are a few IEEE 40th anniversary shirts available. If there are a few available on Friday, these can be distributed to your colleagues.
4. **Timeline**
	1. The most recent change to the chart was to show that 11bb and 11bc have recently finished their SA re-circulation ballots.
	2. No questions
5. **Wi-Fi Alliance Liaison** (11-23-0288r0)
	1. The next Wi-Fi Alliance (WFA) meeting will be in June 2023 in Mexico City.
	2. The last meeting was held last week in Seoul.
	3. No questions
6. **IETF Liaison** (11-23-0432r0)
	1. The next meeting will be in Yokohama, Japan, March 25-31, 2023.
	2. There was an IEEE 802-IETF coordination meeting in February 2023.
	3. Chair: Hopefully there will be an IEEE 802 tutorial in July 2023 regarding some of the work from the IETF DETNET and RAW working groups on the topic of Time Sensitive Networking (TSN).
	4. No questions.
7. **IEEE 802.15 Liaison** (11-23-0463r0)
	1. This is information about various groups within IEEE 802.15 that are of interest to IEEE 802.11.
	2. IEEE 802.15.4ab (slide #3) is currently one of the most popular groups within IEEE 802.15. It has now separated into various ad-hoc groups. This group is also looking at 802.15.4ab co-existence with 802.11.
	3. There is a Privacy SG looking at increased privacy of UWB devices. They have produced a PAR and CSD that will be presented to the IEEE 802 EC meeting on Friday this week, with the objective of starting a new 802.15.4 task group.
	4. No questions
8. **IEEE 802.18 Liaison** (11-23-0184r2)
	1. There are now several topics being studied within IEEE 802.18.
	2. C: I would like to point out that radio spectrum energy efficiency does effect climate change, especially power saving modes in devices.
	3. Chair: I would also like to note that the WFA has also posted publicly available information related to Wi-Fi system energy characteristics and low-power use on their web-site.
	4. No questions.
9. **IEEE 802.19 Liaison** (11-23-0402r1)
	1. This document summarizes the discussion topics within IEEE 802.19 meetings.
	2. The IEEE 802.11bf coexistence assurance document (CAD) ballot passed.
	3. The work on the IEEE 802 wireless spectrum bands has finished, but continues to be refined.
	4. See < <https://mentor.ieee.org/802-ec/dcn/22/ec-22-0266-00-WCSG-ieee-802-s-wireless-standards-table-of-frequency-ranges.xlsx>> for further information.
	5. No questions.
10. **AMP (Ambient Power) TIG Progress Report** (11-23-0260r0)
	1. This presentation provides an overview of the AMP TIG and its status.
	2. The output report from the TIG is 11-23-0375r0.
	3. Chair: Thank you for producing this presentation and the report.
	4. No questions
11. **Any other Business (AoB)**
	1. Chair: Thank you to everyone who has taken awards for their colleagues. There are still 7 awards left for distribution.
12. **Recess**
	1. Meeting recessed at 14.34 ET.

**Friday, March 17th, 2023**

**IEEE 802.11 Closing Plenary**

Call to order at 08:01 ET by Dorothy Stanley (HPE).

There were 297 people in the meeting (Webex), with 100 attending in person (in the room) and 353 on the IMAT attendance server.

1. **Approve/modify working group agenda** (11-23-0176r5)
	1. Chair: There have been some minor changes to the agenda since the mid-week plenary.
	2. **Approve the agenda for the today’s meeting as shown in 11-23-0176r5**
		1. Moved: Mike Montemurro, 2nd: Allan Jones
		2. No objection to approving by unanimous consent.
2. **Announcements** (11-23-0178r1)
	1. **Participation** (slides #11 - #13)
		1. Please can you all remember to read this slide and understand that everyone is here as an individual subject matter expert.
	2. **Call for Essential Patents** (slide #14)
		1. This is the Call for Essential Patents
		2. No statements
		3. No questions.
	3. **Meeting Decorum** (slide #15)
		1. No questions.
	4. **Next session and CAC meetings** (slide #16)
		1. The next session of the IEEE 802.11 working group is from May 14-19th 2023. It will be a mixed mode session in Orlando, Florida, USA.
		2. Please be aware of future chair’s committee meetings (CAC), the first one of which will be on April 3rd at 09:00 ET. Please note the deadline for the sub-group agendas.
	5. **Peter Ecclesine** (slide #17)
		1. We note with sadness that Peter Ecclesine has passed away this week. Peter was a long-time, significant contributor to IEEE 802.11. He was recognized as an RF and radio-regulatory expert and also served as WG editor.
		2. The group observed a minute’s silence in his honor.
	6. **Shirts**
		1. VC1: Has anyone in the room not received a shirt?
		2. No response
	7. **Sub-group minutes**
		1. Please note that sub-group minutes should be completed within 30 days from the close of this plenary.
	8. **Letters of Assurance (LoA)** (slide #18)
		1. Chair: please remember about the LoA requirements.
		2. There is a recent update from another company.
		3. There are two open LoA requests at the moment.
		4. No questions
	9. **IEEE Store and ISO SC6** (slides #19 - #20)
		1. This is summary of drafts that have been liaised to ISO/IEC.
		2. No questions.
	10. **Social Media** (slide #21)
		1. There are several social media items that have been generated for the AIML TIG, AMP TIG and UHR SG.
		2. No questions
	11. **IEEE 802 Public Visibility Standing Committee** (slides #22 - #23)
		1. This IEEE 802 group is designed to increase the external visibility of IEEE 802.
		2. There will be a 802.11 related webinar for 11bb and 11bc in April 2023. Please sign up if you are interested.
		3. No questions.
3. **Treasury Report** (ec-23-0003r2)
	1. VC1: This shows the treasurers’ report and is correct as of March 11th, 2023.
	2. The expected registration fees for the mixed-mode May and September 2023 sessions are $600/$800/$1000 (early/standard/on-site)
	3. The fees for Berlin in July will be $700/$1000/$1300.
	4. Please be aware of the deadbeat consequences on slide #14. There are currently 10 deadbeats.
	5. No questions.
4. **March 2023 Venue Straw Polls** (11-23-0181r0)
	1. Only people present in the room were asked to participate in the following straw polls:
	2. **1. How many people would like to come back to this venue?**
		1. Yes: 34
		2. No: 27
	3. **2. Did you go to the social?**
		1. Yes: 72
		2. No: 5
	4. **3. If you attended the social, did you enjoy it?**
		1. Yes: 70
		2. No: 1
		3. Chair: These are questions to those people attended the venue. I appreciate that some people leave early or, attend from their hotel rooms.
5. **Future Venue Straw Polls** (11-23-0188r2)
	1. May 2023
	2. **1. If the 2023 May Interim Session were held at the Hilton Orlando Buena Vista, Orlando, FL as an in-person only session, would you attend?**
	3. Yes: 90
	4. No: 109
	5. Abstain: 19
	6. **2. If the 2023 May Interim Session were held in at the Hilton Orlando Buena Vista, Orlando, FL as a mixed-mode session, will you attend?**
	7. Attend In-person: 87
	8. Attend Virtually (remotely): 125
	9. Will not attend: 9
	10. July 2023
	11. **1. If the 2023 July 802 Wireless Plenary Session were held at the Estrel, Berlin, as an in-person only session, would you attend?**
	12. Yes: 112
	13. No: 98
	14. Abstain: 16
	15. **2. If the 2023 July 802 Wireless Plenary Session were held at the Estrel, Berlin, as mixed-mode session, will you attend?**
	16. Attend In-person: 63
	17. Attend Virtually (remotely): 62
	18. Will not attend plenary: 2
6. **Future Venues Manager Report** (11-23-0181r0)
	1. Slide #22 shows the upcoming interim sessions for the next couple of years.
	2. Slide #23 shows the upcoming plenaries.
	3. Q: Will there be a venue for Asia in 2025?
	4. A: Yes, we hope to go to Japan in January 2025 and then go to Europe/Asia in May 2025.
	5. No questions
7. **Timeline update**
	1. The main change is for the TGbb and TGbc timelines.
	2. No questions
8. **Attendance statistics** (11-23-0202r2 slide #4)
	1. VC2: These slides are a summary of the attendance statistics and sub-group activities during this session. The numbers have been increasing slowly over the last couple of years.
9. **WG Committee Reports** (11-23-0202r2)
	1. **Editors** (slide #10)
		1. Table 9-210 will be brought under ANA control, as several TGs have been adding values to it and this needs to be controlled.
		2. Q: On slide #16, where do the RevCom dates come from?
		3. A: From the timeline chart.
		4. No questions.
	2. **ARC SC** (slide #18)
		1. The slides show the work covered within the ARC meeting this week.
		2. The group has considered the IEEE Std 802 revision activity within IEEE 802 and IEEE 802.1.
		3. No questions.
	3. **Coex SC** (slide #24)
		1. There have been various issues discussed during the week.
		2. Discussions include updates from ETSI BRAN and Bluetooth
		3. Narrow band and Wi-Fi co-existence were discussed.
		4. No questions.
	4. **PAR SC** (slide #32)
		1. There were 6 PARs reviewed this week.
		2. The responses from the other WGs to our comments were generally accepted.
		3. No questions.
	5. **WNG** **SC** (slide #35)
		1. There was 1 presentation this session:
			1. “AMP Devices in WLAN”, Yinan Qi (OPPO), 11-23-0388r0
		2. No questions.
	6. **JTC1 SC** (slide #38)
		1. The meeting covered the status of various IEEE 802 amendments going through the PSDO process.
		2. There are still some IPR issues that is slowing progress between IEEE and ISO.
		3. No questions.
	7. **TGme** (slide #41)
		1. This session, the group completed comments from LB270 and will request to start a letter ballot on D3.0 later in this meeting.
		2. Q: What are the plans for rolling in recent amendments
		3. A: There will be 4 amendments to be brought in. There will be a lot of work for the clause 6 re-write. A good time to do this will be during the initial SA ballot.
	8. **TGbb** (slide #46)
		1. The group completed its work and P802.11bb 7.0 will now go forward to the EC and RevCom.
		2. The group is now finished.
		3. No questions.
	9. **TGbc** (slide #50)
		1. This group has also completed all its work. P802.11bc D7.0 will also go forward to the EC and RevCom.
		2. The group is now finished. I would like to thank the secretary and the editor for all their hard work.
		3. There will be a webinar on April 4th (as mentioned earlier). Please register to attend using the link: <https://event.on24.com/wcc/r/4153277/A4D7185230A328AF38376C8193EE9714?partnerref=speaker>
		4. No questions.
	10. **TGbe** (slide #57)
		1. There were 9 meeting slots in this session working on comment resolutions from LB271.
		2. A: The timeline will be updated in May.
		3. C: There were 750 comments resolved this session, which I think was great.
	11. **TGbf** (slide #61)
		1. There were 3 meetings this week and there were many comments resolved from the recent letter ballot.
		2. No questions.
	12. **TGbh** (slide #66)
		1. The group failed to move forward to D1.0 this week, but made good progress on various resolutions from the comment collection.
		2. No questions.
	13. **TGbi** (slide #73)
		1. The group met 4 times this week and discussed 10 technical contributions. The plan is to have an initial draft in September 2023 and the timeline has been updated.
		2. No questions.
	14. **TGbk** (slide #77)
		1. The group continued with the SFD (specification framework document).
		2. It is hoped that there will be a D0.2 of the SFD by May 2023.
		3. No questions.
	15. **UHR SG** (slide #83)
		1. There was a motion to include mmWave within the scope of UHR that failed. The plan is to have a separate study group on this topic moving forward.
		2. The UHR PAR and CSD were then finalized and will be presented for approval later in this meeting.
		3. No questions
	16. **AIML TIG** (slide #86)
		1. The group approved a motion to request an extension of the TIG by 3 sessions to continue their work.
		2. 9 technical contributions were considered this week.
		3. Chair: regarding slide #88, I acknowledge the motion request from the TIG to continue their work. I think there is a significant amount of work and interest here; therefore I am content to extend the AIML TIG until the end of the September 2023 session.
		4. No questions.
	17. **AMP TIG** (slide #91)
		1. There were 3 meetings during the week.
		2. A final version of the technical report was completed and a motion to start an AMP study group was considered. This motion will be considered later in this meeting.
		3. No questions.
	18. **ITU Ad-Hoc** (slide #95)
		1. There was 1 meeting this week and the main item of discussion was output documents from ITU-R Working Party 5A.
		2. No questions.
10. **IEEE 802REVc status** (11-23-0468r1)
	1. This is report about various standard and amendment revision activities at the IEEE 802 level.
	2. IEEE 802.11 ARC discussed some of the work activities within these groups.
	3. No questions
11. **Working Group Motions (Old Business)** (11-23-0188r3)
	1. **Motion 2: P802.11REVme re-circulation letter ballot**
		1. **Having approved comment resolutions for all of the comments received from LB270 on P802.11REVme D2.0 as contained in documents 11-22/0065r15, 11-22/1976r6, 11-22/1971r10, 11-22/2016r7, 11-21/0793r36, 11-21/0727r22 and 11-22/2020r5,**
		2. **Instruct the editor to prepare D3.0 incorporating these resolutions and,**
		3. **Approve a 25 day Working Group Recirculation Ballot asking the question “Should P802.11REVme D3.0 be forwarded to SA Ballot?”**
		4. Moved by Mike Montemurro on behalf of TGme
		5. Result: Unanimous consent (Motion passes)
		6. [TGme: Moved: Stephen McCann, 2nd: Joseph Levy, Result: 21/0/5]
	2. **Motion 3: P802.11bb unconditional forward to RevCom**
		1. **Approve document 11-23/0405r1 as the report to the IEEE 802 Executive Committee (EC) on the requirements for unconditional approval to forward P802.11bb D7.0 to RevCom, and**
		2. **Request the IEEE 802 EC to unconditionally approve forwarding P802.11bb D7.0 to RevCom.**
		3. Moved by Nikola Serafimovski on behalf of TGbb/Second: Tuncer Baykas
		4. Result: Yes: 172, No: 1, Abstain: 49 (Motion passes)
		5. [TGbb: Moved: Volker Jungnickel, 2nd: Marc Emmelmann , Result: 7/0/0]
	3. **Motion 4: P802.11bb CSD confirmation**
		1. **Confirm the CSD contained in https://mentor.ieee.org/802-ec/dcn/18/ec-18-0080-00-ACSD-802-11bb.docx**
		2. Moved by Nikola Serafimovski on behalf of TGbb/Second: Volker Jungnickel
		3. Result: Yes: 141, No: 5, Abstain: 50 (Motion passes)
		4. [TGbb: Moved: Tuncer Baykas, 2nd: Volker Jungnickel, Result: 6/0/0]
	4. **Motion 5: P802.11bc unconditional forward to RevCom**
		1. **Approve document 11-23-0423r1 as the report to the IEEE 802 Executive Committee (EC) on the requirements for unconditional approval to forward P802.11bc D7.0 to RevCom, and**
		2. **Request the IEEE 802 EC to unconditionally approve forwarding P802.11bc D7.0 to RevCom.**
		3. Moved by Marc Emmelmann on behalf of TGbc/Second: Hiroshi Mano
		4. Result: Yes: 149, No: 3, Abstain: 37 (Motion passes)
		5. [TGbc: Moved: Stephen McCann, 2nd: Hitoshi Morioka, Result: 7/0/0]
	5. **Motion 6: P802.11bc CSD confirmation**
		1. **Confirm the CSD in https://mentor.ieee.org/802-ec/dcn/18/ec-18-0250-00-ACSD-p802-11bc.pdf**
		2. Moved by Marc Emmelmann on behalf of TGbc/Second: Hitoshi Morioka
		3. Result: Yes: 141, No: 2, Abstain: 40 (Motion passes)
		4. [TGbc: Moved: Xiaofei Wang, 2nd: Stephen McCann, Result: 6/0/0]
	6. **Motion 7: P802.11be Ad-Hoc**
		1. **Approve a TGbe MAC (mixed mode) ad-hoc meeting on 10 to 12 May 2023, in San Jose, CA, for the purpose of comment resolution and consideration of document submissions.**
		2. Moved: Alfred Asterjadhi on behalf of TGbe
		3. C: I wish we were not having meetings on the west and then the east coast of the USA in successive weeks. I don’t think this is good practice and it is not good to do this in May 2023.
		4. C: If this ad-hoc was in April, then for many people it would be a separate trip.
		5. Result: Yes: 133, No: 18, Abstain: 72 (Motion passes)
		6. [TGbe: Moved: Kumail Haider , 2nd:Rubayet Shafin, Result: unanimous consent]
	7. **Motion 8: P802.11bf D1.0 for sale**
		1. **Approve P802.11bf D1.0 to be available for purchase from the IEEE Store.**
		2. Moved by Tony Xiao Han on behalf of TGbf, Second: Claudio da Silva
		3. Q: Is the result 13/9/9 from TGbf correct?
		4. A: Yes
		5. Q: Is this a procedural motion?
		6. Chair: Yes
		7. Result: Yes: 105, No: 39, Abstain: 61 (Motion passes)
		8. [TGbf: Moved: Alecsander Eitan, 2nd: Claudio da Silva, Result: 13/9/9]
	8. **Motion 9: P802.11bn PAR approval**
		1. **Believing that the PAR contained in the document referenced below meets IEEE-SA guidelines,**
		2. **Request that the PAR contained in https://mentor.ieee.org/802.11/dcn/23/11-23-0480-00-0uhr-uhr-proposed-par.pdf be posted to the IEEE 802 Executive Committee (EC) agenda for EC approval to submit to NesCom, granting the WG chair editorial license.**
		3. Moved by Laurent Cariou on behalf of UHR SG/Second: Ross Jian Yu
		4. C: I think there is an error in the PAR regarding Gbps. I also think the use of superlatives such as ultra and high are no necessary. Other parts of the Wi-Fi industry use numbers to indicate the generations of Wi-Fi. Something along the lines of “Reliability Extensions” would be a better name. However, I do speak in favor of this motion.
		5. Chair: The motion allows me to correct any errors from an editorial point of view.
		6. C: I think that this PAR essentially says “some solution that is better than the previous one”. I speak against this motion, as this is very poor practice and I speak against the motion.
		7. C: I speak for the motion. I note that there were over 240 supporters of the PAR within the SG.
		8. C: I speak against the motion, There are no quantitative values within the PAR and there are no commitments. Values for range/throughput are not there. I also think that this PAR does not meet the IEEE-SA guidelines.
		9. C: I speak in favor of the motion. In each amendment, we end up exceeding the PAR values at the end of the project.
		10. Chair: This motion requests EC review. It will then be considered for approval by the EC in July 2023.
		11. Result: Yes: 211, No: 25, Abstain: 12 (Motion passes)
		12. [UHR SG: Moved: Sean Coffey, 2nd: Steve Palm, Result: 243/13/16]
	9. **Motion 10: P802.11bn CSD approval**
		1. **Believing that the CSD contained in the document referenced below meets IEEE 802 guidelines,**
		2. **Request that the CSD contained in https://mentor.ieee.org/802.11/dcn/23/11-23-0079-05-0uhr-uhr-draft-proposed-csd.docx be posted to the IEEE 802 Executive Committee (EC) agenda for EC preview and approval.**
		3. Moved by Laurent Cariou on behalf of UHR SG/Second: Allan Jones
		4. Result: Yes: 208, No: 7, Abstain: 17 (Motion passes)
		5. [UHR SG: Moved: Ross Jian Yu, 2nd: Akira Kishida, Result: 250/4/13]
	10. **Motion 11: UHR SG extension**
		1. **Request the IEEE 802 LMSC to approve the 2nd rechartering & 6 month extension of the IEEE 802.11 UHR Study Group.**
		2. Moved: Laurent Cariou, Seconded: Stephen Palm
		3. Result: Yes: 232, No: 0, Abstain: 8 (Motion passes)
	11. **Motion 12: AMP SG formation**
		1. **Request approval by IEEE 802 LMSC to form an 802.11 Ambient Power (AMP) Study Group with the intent of creating a PAR and CSD.**
		2. **The Study Group will investigate MAC and PHY capabilities to enable 802.11 WLAN support of ultra-low complexity and ultra-low power consumption (e.g. less than one milliwatt) devices powered by ambient power source, and reuse existing 802.11 features as much as possible, with a target start of the task group in Jan 2024.**
		3. Moved by Bo Sun on behalf of AMP TIG, Second: Weijie Xu
		4. Result: Yes: 164, No: 16, Abstain: 48 (Motion passes)
		5. [AMP TIG: Moved: Joerg Robert, 2nd: James Yee, Result: 39/0/3]
12. **Working Group Motions (New Business)** (11-23-0188r3)
	1. **Motion 13: WG11 IMW SG formation**
		1. **Request approval by IEEE 802 LMSC to form an 802.11 Integrated mmWave (IMW) Study Group to develop a Project Authorization Request (PAR) and a Criteria for Standards Development (CSD) for a new 802.11 MAC/PHY amendment which specifies carrier frequency operation between 42.5 and 71 GHz and leverages MAC/PHY specifications in the Sub 7 GHz bands. The target start date of the Study Group is November 2023.**
		2. **Reference document:**
		3. **https://mentor.ieee.org/802.11/dcn/23/11-23-0481-02-0uhr-imw-sg-formation-motion-text.pptx**
		4. Moved: Rolf de Vegt, Seconded: Tuncer Baykas
		5. C: This is a motion for a new SG. The mmWave aspect was not included in the P802.11bn PAR. There is considerable interest in mmWave within the UHR SG, so created a new SG is the best way to develop this going forward.
		6. C: I speak in favor. I think this is a welcome addition to 802.11.
		7. Q: The start date is November 2023 in the motion. Why is this? Why not May 2023?
		8. A: There is a lot of work going on in the UHR SG at the moment and I would prefer that the start of this SG is delayed until November 2023.
		9. C: I speak in favor of the motion. The straw poll results in the SG indicated good support.
		10. C: I would like a recorded vote for this motion.
		11. Chair: Ok
		12. The recorded vote is contained in Annex E of these minutes.
		13. Result: Yes: 197, No: 18, Abstain: 27 (Motion passes)
13. **Solomon Trainin retirement** (11-23-0178r1)
	1. Chair: I would like to thank Solomon for all his work in 802.11 and best wishes in your retirement.
	2. Solomon: I would like to thank you all. I am proud of all the technical discussion we have had. I wish that you successfully compete all the 802.11 projects and good luck with the new ones.
14. **Any other Business (AoB)**
	1. None
15. **Wireless Chairs Meeting** (11-23-0178r1 slide #25)
	1. The next meeting is on April 12th, 2023 at 15:00 ET. Please contact the IEEE 802.11 WG chair or vice-chairs with a request for more information.
16. **Next Session** (11-230178r1 slide #26)
	1. The proposed date of the next IEEE 802.11 WG session is May 14-19th, 2023 in Orlando, Florida, USA as a mixed mode session.
	2. Chair: Please note that Orlando airport is very busy at the moment, so please bear this in mind with your travel plans.
	3. In addition, please book the hotel as soon as possible.
17. **Adjournment**
	1. Having completed the agenda, the chair announced that the meeting was adjourned at 10:40 ET.

**Annex A: Attendance & Affiliation**

| **Name** | **Affiliation** | **Attended >= 75%?** | **Status** |
| --- | --- | --- | --- |
| Abdelaal, Rana  | Broadcom Corporation  | TRUE  | Voter |
| AbidRabbu, Shaima'  | Istanbul Medipol University; Vestel  | TRUE  | Potential Voter |
| Abouelseoud, Mohamed  | Apple Inc.  | TRUE  | Voter |
| Aboulmagd, Osama  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Adachi, Tomoko  | TOSHIBA Corporation  | TRUE  | Voter |
| Adakeja, olubukola  | Teradyne, Inc.  | TRUE  | Voter |
| Adhikari, Shubhodeep  | Broadcom Corporation  | TRUE  | Voter |
| Agarwal, Peyush  | Broadcom Corporation  | TRUE  | Voter |
| Aio, Kosuke  | Sony Corporation  | TRUE  | Voter |
| Ajami, Abdel Karim  | Qualcomm Technologies, Inc  | TRUE  | Voter |
| Akhmetov, Dmitry  | Intel  | TRUE  | Voter |
| Alagarsamy, Srividhya  | Broadcom Corporation  | TRUE  | Voter |
| Al-Baidhani, Amer  | NXP Semiconductors  | FALSE  | Voter |
| Aldana, Carlos  | Facebook  | TRUE  | Voter |
| Almholt, Thomas  | Texas Instruments Inc.  | FALSE  | Non-Voter |
| Amalladinne, Vamsi  | Qualcomm Incorporated  | TRUE  | Voter |
| Andersdotter, Amelia  | Sky Group/Comcast  | TRUE  | Voter |
| Ansley, Carol  | Cox Communications Inc.  | TRUE  | Voter |
| Anwyl, Gary  | MediaTek Inc.  | TRUE  | Voter |
| Arlandis, Diego  | Maxlinear Corp  | TRUE  | Voter |
| Arregui, Antonio  | Maxlinear  | TRUE  | Voter |
| Arrington, Arthur  | Air Network Solutions  | TRUE  | Potential Voter |
| Asai, Yusuke  | NTT  | TRUE  | Voter |
| Asterjadhi, Alfred  | Qualcomm Technologies, Inc  | TRUE  | Voter |
| Au, Kwok Shum  | Huawei Technologies Co., Ltd  | TRUE  | ExOfficio |
| Avital, Ziv  | MaxLinear  | TRUE  | Voter |
| Avrillon, Matthieu  | Self  | TRUE  | Aspirant |
| Awater, Geert  | Qualcomm Technologies Netherlands B.V.  | TRUE  | Voter |
| Badenes, Agustin  | MaxLinear Corp  | TRUE  | Voter |
| Baek, SunHee  | LG ELECTRONICS  | TRUE  | Voter |
| Bahn, Christy  | IEEE STAFF  | TRUE  | Voter |
| Baik, Eugene  | Qualcomm Incorporated  | TRUE  | Voter |
| Bajko, Gabor  | MediaTek Inc.  | TRUE  | Voter |
| Balakrishnan, Hari Ram  | NXP Semiconductors  | TRUE  | Voter |
| Bansal, Priyanka  | NXP Semiconductors  | TRUE  | Aspirant |
| Bao, Zhanjing  | TCL  | TRUE  | Potential Voter |
| Barbour, Ian  | IEEE STAFF  | FALSE  | Non-Voter |
| Baron, stephane  | Canon Research Centre France  | TRUE  | Voter |
| Barr, David  | MaxLinear  | TRUE  | Voter |
| Batra, Anuj  | Apple, Inc.  | TRUE  | Voter |
| Baykas, Tuncer  | Ofinno  | TRUE  | Voter |
| Beg, Chris  | Cognitive Systems Corp.  | TRUE  | Voter |
| Bei, Jianwei  | NXP Semiconductors  | TRUE  | Voter |
| Ben Arie, Yaron  | toga networks(a huawei company)  | FALSE  | Voter |
| Berger, Catherine  | IEEE STAFF  | FALSE  | Non-Voter |
| Berger, Christian  | NXP Semiconductors  | TRUE  | Voter |
| Bhandaru, Nehru  | Broadcom Corporation  | TRUE  | Aspirant |
| Bims, Harry  | Bims Laboratories, Inc.  | TRUE  | Voter |
| Bluschke, Andreas  | Representing myself  | TRUE  | Voter |
| Bober, Lennert  | Fraunhofer Heinrich Hertz Institute  | TRUE  | Voter |
| Boldy, David  | Broadcom Corporation  | TRUE  | Voter |
| Borges, Daniel  | Apple, Inc.  | TRUE  | Voter |
| Bower, Patricia  | HaiLa  | FALSE  | Non-Voter |
| Bredewoud, Albert  | Broadcom Corporation  | TRUE  | Voter |
| Buyukbas, Afsin  | ICT Authority of Turkiye  | TRUE  | Aspirant |
| Canchi, Radhakrishna  | Kyocera International Inc  | TRUE  | Voter |
| Canpolat, Necati  | Intel  | TRUE  | Aspirant |
| Cao, Rui  | NXP Semiconductors  | TRUE  | Voter |
| Cariou, Laurent  | Intel  | TRUE  | Voter |
| Carney, William  | Sony Group Corporation  | TRUE  | Voter |
| Carter, Edward  | Infineon Technologies  | TRUE  | Voter |
| Cavalcanti, Dave  | Intel Corporation  | TRUE  | Voter |
| Cepni, Gurkan  | Apple, Inc.  | TRUE  | Voter |
| Chakrabarti, Samita  | Verizon  | FALSE  | Aspirant |
| Chan, Andy  | Infineon Technologies  | TRUE  | Aspirant |
| Chang, Chen-Yi  | Mediatek  | TRUE  | Voter |
| Chaplin, Clint  | Self  | FALSE  | ExOfficio |
| Chappell, Matthew  | Cox Communications Inc.  | TRUE  | Voter |
| Chen, Cheng  | Intel Corporation  | TRUE  | Voter |
| Chen, Cheng-Ming  | Qualcomm Incorporated  | TRUE  | Voter |
| Chen, Xiaogang  | ZEKU  | TRUE  | Voter |
| Chen, You-Wei  | MediaTek Inc.  | TRUE  | Voter |
| Cheng, Paul  | MediaTek Inc.  | TRUE  | Voter |
| cheng, phoebe  | MediaTek Inc.  | TRUE  | Voter |
| Cheng, Xilin  | NXP Semiconductors  | TRUE  | Voter |
| CHENG, yajun  | Xiaomi Communications Co., Ltd.  | TRUE  | Voter |
| CHERIAN, GEORGE  | Qualcomm Incorporated  | TRUE  | Voter |
| Chiang, James  | MediaTek Inc.  | TRUE  | Voter |
| Chitrakar, Rojan  | Huawei International Pte Ltd  | FALSE  | Voter |
| Chiu, WenHsien  | MediaTek Inc.  | TRUE  | Voter |
| Chng, Shi Baw  | BAWMAN LLC  | TRUE  | Voter |
| Cho, Hangyu  | LG ELECTRONICS  | TRUE  | Voter |
| Choi, Jin Seek  | Hanyang Univerisity  | TRUE  | Potential Voter |
| Choi, Jinsoo  | LG ELECTRONICS  | FALSE  | Voter |
| Chou, Tzu-Hsuan  | Qualcomm Incorporated  | TRUE  | Potential Voter |
| Chu, Liwen  | NXP Semiconductors  | TRUE  | Voter |
| CHUN, JINYOUNG  | LG ELECTRONICS  | TRUE  | Voter |
| Chung, Chulho  | SAMSUNG  | TRUE  | Voter |
| Ciochina, Dana  | Sony Corporation  | TRUE  | Voter |
| Coffey, John  | Realtek Semiconductor Corp.  | TRUE  | Voter |
| Cordeiro, Carlos  | Intel  | TRUE  | Voter |
| Cortes, Diana  | Google  | TRUE  | Voter |
| da Silva, Claudio  | Meta Platforms Inc.  | TRUE  | Voter |
| Das, Dibakar  | Intel  | TRUE  | Voter |
| Das, Subir  | Peraton Labs  | TRUE  | ExOfficio |
| Dash, Debashis  | Apple, Inc.  | TRUE  | Voter |
| Dauphinee, Leonard  | MAXLINEAR INC  | TRUE  | Voter |
| de Vegt, Rolf  | Qualcomm Incorporated  | TRUE  | Voter |
| DeLaOlivaDelgado, Antonio  | InterDigital, Inc.  | TRUE  | Voter |
| Derham, Thomas  | Broadcom Corporation  | TRUE  | Voter |
| DESMOULIN, Patrice  | Orange  | TRUE  | Voter |
| Di Taranto, Rocco  | Ericsson AB  | TRUE  | Voter |
| Ding, Yanyi  | Panasonic Corporation  | TRUE  | Voter |
| Dong, Xiandong  | Xiaomi Communications Co., Ltd.  | TRUE  | Voter |
| Du, Rui  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Du, Zhenguo  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Duan, Ruchen  | Apple Inc.  | TRUE  | Voter |
| Eitan, Alecsander  | Qualcomm Technologies, Inc.  | TRUE  | Voter |
| ElSherif, Ahmed  | Qualcomm Incorporated  | TRUE  | Voter |
| Emmelmann, Marc  | SELF / Koden-TI  | TRUE  | Voter |
| Erceg, Vinko  | Broadcom Corporation  | TRUE  | Voter |
| Erkucuk, Serhat  | Ofinno  | TRUE  | Voter |
| Fan, Shuang  | Sanechips Technology Co., Ltd.  | TRUE  | Voter |
| Fang, Juan  | Intel  | TRUE  | Voter |
| Fang, Yonggang  | MediaTek Inc.  | TRUE  | Voter |
| feng, Shuling  | MediaTek Inc.  | TRUE  | Voter |
| Ferruz, David  | Maxlinear Corp  | TRUE  | Voter |
| Fischer, Matthew  | Broadcom Corporation  | TRUE  | Voter |
| Fletcher, Paul  | Samsung Cambridge Solution Center  | TRUE  | Voter |
| Fujimori, Yuki  | Canon Research Centre France  | TRUE  | Voter |
| Gan, Ming  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Gangur, Trivikram  | Infineon Technologies  | TRUE  | Voter |
| Gao, Ning  | Guangdong OPPO Mobile Telecommunications Corp.,Ltd  | TRUE  | Voter |
| Garg, Lalit  | Broadcom Corporation  | TRUE  | Voter |
| Gee, Thomas  | Qorvo  | TRUE  | Voter |
| Ghaderipoor, Alireza  | MediaTek Inc.  | TRUE  | Voter |
| Ghosh, Chittabrata  | Apple Inc.  | TRUE  | Voter |
| Gidvani, Ravi  | SAMSUNG ELECTRONICS  | TRUE  | Voter |
| Gilb, James  | General Atomics Aeronautical Systems, Inc.  | TRUE  | ExOfficio |
| Godbole, sachin  | Broadcom Corporation  | TRUE  | Voter |
| Godfrey, Tim  | Electric Power Research Institute, Inc. (EPRI)  | FALSE  | ExOfficio |
| Gong, Bo  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Gorthi, Hemamali  | Infineon Technologies  | TRUE  | Voter |
| GOTO, Fumihide  | DENSO  | TRUE  | Voter |
| Grandhe, Niranjan  | NXP Semiconductors  | TRUE  | Voter |
| Grigat, Michael  | Deutsche Telekom AG  | TRUE  | Voter |
| Gu, Xiangxin  | Unisoc (Shanghai) Technologies Co., Ltd.  | TRUE  | Voter |
| GUIGNARD, Romain  | Canon Research Centre France  | TRUE  | Voter |
| Guo, Jing  | NXP Semiconductors  | TRUE  | Voter |
| Guo, Yuchen  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Guo, Zheng  | NXP Semiconductors  | TRUE  | Voter |
| Guo, Ziyang  | Huawei Technologies Co., Ltd  | TRUE  | Potential Voter |
| Gupta, Binita  | Meta Platforms, Inc.  | TRUE  | Voter |
| Gupta, Raghvendra  | Broadcom Corporation  | TRUE  | Voter |
| gutierrez, luis  | Broadcom Corporation  | TRUE  | Voter |
| Haider, Muhammad Kumail  | Meta Platforms Inc.  | TRUE  | Voter |
| Halasz, David  | Morse Micro  | TRUE  | Voter |
| hamidouche, kenza  | Apple Inc.  | TRUE  | Voter |
| Hamilton, Mark  | Ruckus/CommScope  | TRUE  | Voter |
| HAN, CHONG  | pureLiFi  | TRUE  | Voter |
| HAN, Xiao  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Hangbin, Zhao  | China Mobile (Hangzhou) Information Technology Co., Ltd  | TRUE  | Voter |
| Hansen, Christopher  | Covariant Corporation  | TRUE  | Voter |
| Hansen, Jeff  | SoundVision Technologies  | TRUE  | Potential Voter |
| Harkins, Daniel  | Aruba Networks, Inc.  | TRUE  | Voter |
| Hart, Brian  | Cisco Systems, Inc.  | TRUE  | Voter |
| Hawkes, Philip  | Qualcomm Incorporated  | TRUE  | Potential Voter |
| He, Chuanfeng  | Beijing OPPO telecommunications corp., ltd  | TRUE  | Voter |
| He, Ziming  | Samsung Cambridge Solution Centre  | TRUE  | Voter |
| Hedayat, Ahmadreza  | Apple Inc.  | TRUE  | Voter |
| Henry, Jerome  | Cisco Systems, Inc.  | TRUE  | Voter |
| Hernandez, Marco  | National Institute of Information and Communications Technology (NICT)  | FALSE  | Voter |
| hervieu, Lili  | Cable Television Laboratories Inc. (CableLabs)  | TRUE  | Voter |
| Hiertz, Guido  | Ericsson GmbH  | TRUE  | Voter |
| Hirata, Ryuichi  | Sony Group Corporation  | TRUE  | Voter |
| Ho, Duncan  | Qualcomm Incorporated  | TRUE  | Voter |
| Hsiao, Ching-Wen  | MediaTek Inc.  | TRUE  | Voter |
| Hsieh, Hung-Tao  | MediaTek Inc.  | TRUE  | Voter |
| Hsu, Chien-Fang  | MediaTek Inc.  | TRUE  | Voter |
| Hsu, Ostrovsky  | Xiaomi Communications Co., Ltd.  | TRUE  | Voter |
| Hu, Chunyu  | Facebook  | TRUE  | Voter |
| Hu, Mengshi  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Hu, Shengquan  | MediaTek Inc.  | TRUE  | Voter |
| Hu, Xiaokun  | Ruijie Networks Co., Ltd.  | TRUE  | Potential Voter |
| HUANG, CHIHAN  | MediaTek Inc.  | TRUE  | Voter |
| Huang, Guogang  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Huang, Lei  | Huawei International Pte Ltd  | TRUE  | Voter |
| Huang, Po-Kai  | Intel  | TRUE  | Voter |
| Huang, Qisheng  | ZTE Corporation  | TRUE  | Voter |
| Huq, Kazi Mohammed Saidul  | Ofinno  | TRUE  | Voter |
| Hwang, Sung Hyun  | Electronics and Telecommunications Research Institute (ETRI)  | TRUE  | Voter |
| Ikegami, Tetsushi  | Meiji University  | FALSE  | Voter |
| Inohiza, Hirohiko  | Canon  | TRUE  | Voter |
| Iranzo, Salvador  | MaxLinear Corp  | TRUE  | Voter |
| Jang, Insun  | LG ELECTRONICS  | TRUE  | Voter |
| Jeffries, Timothy  | Futurewei Technologies  | TRUE  | Voter |
| Jen, Elliot YuChih  | Samsung Research America  | TRUE  | Voter |
| Jeon, Eunsung  | SAMSUNG ELECTRONICS  | TRUE  | Voter |
| Ji, Chenhe  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| jiang, feng  | Apple Inc.  | TRUE  | Voter |
| Jiang, Jinjing  | Apple, Inc.  | FALSE  | Voter |
| Joh, Hanjin  | KT Corp.  | TRUE  | Voter |
| John, Toby  | Verizon  | TRUE  | Voter |
| Jones, Allan  | Activision  | TRUE  | Voter |
| Jones, Vincent Knowles IV  | Qualcomm Incorporated  | TRUE  | Voter |
| JOO, SEONG-SOON  | Electronics and Telecommunications Research Institute (ETRI)  | FALSE  | Non-Voter |
| Juarez, Jorge  | Fraunhofer IIS  | TRUE  | Voter |
| Jung, Insik  | LG ELECTRONICS  | TRUE  | Voter |
| Jungnickel, Volker  | Fraunhofer Heinrich Hertz Institute  | TRUE  | Voter |
| Kabbinale, Aniruddh  | SAMSUNG  | FALSE  | Non-Voter |
| Kadampot, Ishaque Ashar  | Qualcomm Technologies, Inc.  | TRUE  | Voter |
| Kain, Carl  | USDOT; Noblis, Inc.  | TRUE  | Voter |
| Kakani, Naveen  | Qualcomm Incorporated  | TRUE  | Voter |
| Kalkundrikar, Vishal  | Ondas Networks  | FALSE  | Non-Voter |
| kamath, Manoj  | Broadcom Corporation  | TRUE  | Voter |
| Kamel, Mahmoud  | InterDigital, Inc.  | TRUE  | Voter |
| Kancherla, Sundeep  | Infineon Technologies  | TRUE  | Voter |
| Kandala, Srinivas  | SAMSUNG  | TRUE  | Voter |
| Kang, HaoHua  | MediaTek Inc.  | TRUE  | Voter |
| KANG, Kyu-Min  | Electronics and Telecommunications Research Institute (ETRI)  | TRUE  | Voter |
| Kang, Sugbong  | Apple, Inc.  | TRUE  | Voter |
| KANG, TEAG JIN  | Broadcom Corporation  | TRUE  | Voter |
| Karmuchi, Shailender  | SAMSUNG ELECTRONICS  | TRUE  | Potential Voter |
| Kasargod, Sudhir  | Infineon Technologies  | TRUE  | Voter |
| Kasher, Assaf  | Qualcomm Incorporated  | TRUE  | Voter |
| Kedem, Oren  | MaxLinear  | TRUE  | Voter |
| Kennedy, Richard  | Bluetooth SIG  | TRUE  | Voter |
| Kerry, Stuart  | OK-Brit; Self  | TRUE  | Voter |
| Kezys, Vytas  | CONSULTANT  | TRUE  | Voter |
| Khan, Naseem  | Leidos Engineering. LLC  | TRUE  | Voter |
| Khericha, samir  | Broadcom Corporation  | TRUE  | Voter |
| Khorov, EVGENY  | IITP RAS  | TRUE  | Voter |
| KIM, DONGWAN  | Broadcom Corporation  | TRUE  | Voter |
| Kim, Geon Hwan  | LG ELECTRONICS  | TRUE  | Potential Voter |
| Kim, Hyungjin  | Broadcom Corporation  | TRUE  | Voter |
| Kim, Jeongki  | Ofinno  | TRUE  | Voter |
| Kim, Myeong-Jin  | SAMSUNG  | TRUE  | Voter |
| Kim, Sang Gook  | LG ELECTRONICS  | TRUE  | Voter |
| Kim, Sanghyun  | WILUS Inc.  | TRUE  | Voter |
| Kim, Yongho  | Korea National University of Transportation  | TRUE  | Voter |
| Kim, Youhan  | Qualcomm Technologies, Inc.  | TRUE  | Voter |
| Kishida, Akira  | Nippon Telegraph and Telephone Corporation (NTT)  | TRUE  | Voter |
| Kitazawa, Shoichi  | Muroran IT  | TRUE  | Voter |
| Kivinen, Tero  | Self Employed  | FALSE  | Non-Voter |
| Klein, Arik  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| KNECKT, JARKKO  | Apple, Inc.  | TRUE  | Voter |
| Ko, Geonjung  | WILUS Inc.  | TRUE  | Voter |
| Kota, Prashant  | Infineon Technologies  | TRUE  | Voter |
| Koundourakis, Michail  | Samsung Cambridge Solution Center  | TRUE  | Voter |
| Kozarev, Aleksandra  | MaxLinear Corp  | FALSE  | Aspirant |
| Krebs, Alexander  | Apple Inc; Apple Inc.  | FALSE  | Voter |
| Ku, Chung-Ta  | MediaTek Inc.  | TRUE  | Voter |
| Kumar, Manish  | NXP Semiconductors  | TRUE  | Voter |
| Kuo, Chih-Chun  | MediaTek Inc.  | TRUE  | Voter |
| Lalam, Massinissa  | SAGEMCOM SAS  | TRUE  | Voter |
| Lan, Zhou  | Apple Inc.  | TRUE  | Voter |
| Lanante, Leonardo  | Ofinno  | TRUE  | Voter |
| Lansford, James  | Qualcomm Incorporated; University of Colorado at Boulder  | TRUE  | Voter |
| Lee, Hong Won  | LG ELECTRONICS  | FALSE  | Aspirant |
| Lee, Hyeong Ho  | Netvision Telecom Inc.  | TRUE  | Voter |
| LEE, JOONSOO  | Newracom Inc.  | TRUE  | Potential Voter |
| Lee, Wookbong  | Apple Inc.  | TRUE  | Voter |
| Levesque, Chris  | Qorvo  | TRUE  | Voter |
| Levitsky, Ilya  | IITP RAS  | TRUE  | Voter |
| Levy, Joseph  | InterDigital, Inc.  | TRUE  | Voter |
| Li, Bo  | Northwestern Polytechnical University  | TRUE  | Voter |
| Li, Huan-Bang  | National Institute of Information and Communications Technology (NICT)  | FALSE  | Non-Voter |
| Li, Jialing  | Qualcomm Technologies, Inc.  | TRUE  | Voter |
| Li, Qinghua  | Intel  | TRUE  | Voter |
| Li, Weiyi  | Spreadtrum  | TRUE  | Aspirant |
| Li, Yan  | ZTE Corporation  | FALSE  | Voter |
| Li, Yapu  | Guangdong OPPO Mobile Telecommunications Corp.,Ltd  | TRUE  | Voter |
| Li, Yunbo  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Lim, Dong Guk  | LG ELECTRONICS  | TRUE  | Voter |
| Lim, Sang-Kyu  | Electronics and Telecommunications Research Institute (ETRI)  | FALSE  | Non-Voter |
| Lin, Hsin-De  | MediaTek Inc.  | TRUE  | Voter |
| Lin, Wei  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Lin, Yousi  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Lin, Zinan  | InterDigital, Inc.  | TRUE  | Voter |
| Lindskog, Erik  | SAMSUNG  | TRUE  | Voter |
| LIU, CHENCHEN  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Liu, Der-Zheng  | Realtek Semiconductor Corp.  | TRUE  | Voter |
| Liu, Jeff  | Broadcom Corporation  | TRUE  | Voter |
| Liu, Jianhan  | MediaTek Inc.  | TRUE  | Voter |
| Liu, Peng  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Liu, Ying  | NXP Semiconductors  | TRUE  | Voter |
| Liu, Yong  | Apple, Inc.  | FALSE  | Voter |
| Lorgeoux, Mikael  | Canon Research Centre France  | TRUE  | Voter |
| Lou, Hanqing  | InterDigital, Inc.  | TRUE  | Voter |
| Lou, Hui-Ling  | NXP Semiconductors  | TRUE  | Voter |
| Lovison, Federico  | Cisco Systems, Inc.  | TRUE  | Potential Voter |
| Lu, Kaiying  | MediaTek Inc.  | TRUE  | Voter |
| Lu, Liuming  | Guangdong OPPO Mobile Telecommunications Corp.,Ltd  | TRUE  | Voter |
| Lumbatis, Kurt  | CommScope, Inc.  | TRUE  | Voter |
| Luo, Chaoming  | Beijing OPPO telecommunications corp., ltd.  | TRUE  | Voter |
| Lv, Lily  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Ma, Li  | MediaTek Inc.  | TRUE  | Voter |
| Ma, Yongsen  | SAMSUNG ELECTRONICS  | TRUE  | Aspirant |
| Ma, Yunsi  | HiSilicon (Shanghai) Technologies Co., LTD.  | TRUE  | Voter |
| Madpuwar, Girish  | Synaptics  | TRUE  | Voter |
| Maguluri, Anilkumar  | Synaptics  | TRUE  | Potential Voter |
| Mak, Siukai  | Broadcom Corporation  | TRUE  | Voter |
| Malinen, Jouni  | Qualcomm Technologies, Inc  | TRUE  | Voter |
| Mano, Hiroshi  | Koden Techno Info K.K.  | TRUE  | Voter |
| Mantha, Abhishek  | Broadcom Corporation  | TRUE  | Voter |
| MAO, ZHI  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Marks, Roger  | EthAirNet Associates  | FALSE  | ExOfficio |
| Martinez Vazquez, Marcos  | MaxLinear Corp; MAXLINEAR INC  | TRUE  | Voter |
| Max, Sebastian  | Ericsson AB  | TRUE  | Voter |
| McCann, Stephen  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Medda, Daniele  | International Hellenic University  | TRUE  | Voter |
| Mehrnoush, Morteza  | Apple Inc.  | TRUE  | Voter |
| Mehta, Mehul  | Pharrowtech BV  | TRUE  | Potential Voter |
| MELZER, Ezer  | Toga Networks, a Huawei company  | TRUE  | Voter |
| Minotani, Jun  | Panasonic Corporation  | TRUE  | Voter |
| Miwa, Shinya  | Canon Research Centre France  | TRUE  | Aspirant |
| Moelker, Dignus-Jan  | Broadcom Corporation  | TRUE  | Voter |
| Montemurro, Michael  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Moon, Juseong  | Korea National University of Transportation  | TRUE  | Voter |
| Morioka, Hitoshi  | SRC Software  | TRUE  | Voter |
| Motozuka, Hiroyuki  | Panasonic Holdings Corporation  | TRUE  | Voter |
| Mueller, Robert  | Ilmenau University of Technology - TU Ilmenau  | TRUE  | Voter |
| Mukkapati, Lakshmi Narayana  | Wi-Fi Alliance  | TRUE  | Voter |
| Mutgan, Okan  | Nokia  | TRUE  | Voter |
| Nagai, Yukimasa  | Mitsubishi Electric Corporation  | FALSE  | Aspirant |
| nagata, kengo  | Nippon Telegraph and Telephone Corporation (NTT)  | TRUE  | Voter |
| Naik, Gaurang  | Qualcomm Technologies, Inc  | TRUE  | Voter |
| Nakano, Hiroki  | CAHI Corporation; Kyoto University  | TRUE  | Voter |
| Nam, Junyoung  | Qualcomm Incorporated  | TRUE  | Voter |
| Namboodiri, Vamadevan  | SAMSUNG ELECTRONICS  | FALSE  | Voter |
| Namvar, Nima  | Charter Communications  | TRUE  | Voter |
| Nandagopalan, SAI SHANKAR  | Synaptics  | TRUE  | Voter |
| Narengerile, Narengerile  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Nassiri Toussi, Karim  | Broadcom Corporation  | TRUE  | Voter |
| Nayak, Peshal  | Samsung Research America  | TRUE  | Voter |
| Nezou, Patrice  | Canon Research Centre France  | TRUE  | Voter |
| Ng, Boon Loong  | Samsung Research America  | TRUE  | Voter |
| Nguyen, An  | DHS/CISA  | TRUE  | Voter |
| Noh, Si-Chan  | Newratek  | TRUE  | Potential Voter |
| Ohmoto, Ryutaro  | Nihon Dengyo Kosaku Co. Ltd.  | TRUE  | Voter |
| Okada, Hiraku  | Nagoya University  | TRUE  | Voter |
| Olip, John  | Broadcom Corporation  | TRUE  | Voter |
| Omar, Hassan  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Orlando, Christian  | IEEE STAFF  | FALSE  | Non-Voter |
| Orlik, Philip  | Mitsubishi Electric Corporation  | FALSE  | Non-Voter |
| Orr, Stephen  | Cisco Systems, Inc.  | TRUE  | Voter |
| Ouchi, Masatomo  | Canon  | TRUE  | Voter |
| Palayur, Saju  | Maxlinear Inc  | TRUE  | Voter |
| Palm, Stephen  | Broadcom Corporation  | TRUE  | Voter |
| Pandey, Sheetal  | Synaptics Inc.  | TRUE  | Voter |
| Pare, Thomas  | MediaTek Inc.  | TRUE  | Voter |
| Park, Eunsung  | LG ELECTRONICS  | TRUE  | Voter |
| Park, Minyoung  | Intel  | TRUE  | Voter |
| Park, Sungjin  | Senscomm  | TRUE  | Voter |
| Parsons, Glenn  | Ericsson AB  | TRUE  | ExOfficio |
| Patel, Dilan  | Sonos  | TRUE  | Aspirant |
| Patil, Abhishek  | Qualcomm Incorporated  | TRUE  | Voter |
| Patwardhan, Gaurav  | Hewlett Packard Enterprise  | TRUE  | Voter |
| Peng, Lan  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Peng, Ronny  | MediaTek Inc.  | TRUE  | Voter |
| Perahia, Eldad  | Hewlett Packard Enterprise  | TRUE  | Voter |
| Petranovich, James  | ViaSat, Inc.  | TRUE  | Voter |
| Petrick, Albert  | InterDigital, Inc.  | TRUE  | Voter |
| Petry, Brian  | Broadcom Corporation  | TRUE  | Voter |
| Pettersson, Charlie  | Ericsson AB  | TRUE  | Voter |
| Porat, Ron  | Broadcom Corporation  | TRUE  | Voter |
| Pottigari, Sachin  | NXP Semiconductors  | TRUE  | Aspirant |
| Prabhakaran, Dinakar  | Broadcom Corporation  | TRUE  | Voter |
| Puducheri, Srinath  | Broadcom Corporation  | TRUE  | Voter |
| Pulikkoonattu, Rethnakaran  | Broadcom Corporation  | TRUE  | Voter |
| Qi, Emily  | Intel  | TRUE  | Voter |
| Qi, Yinan  | Guangdong OPPO Mobile Telecommunications Corp.,Ltd  | TRUE  | Voter |
| Qi, Yue  | Samsung Research America  | TRUE  | Voter |
| Quan, Yingqiao  | Unisoc  | TRUE  | Voter |
| Rafique, Saira  | Istanbul Medipol University, Vestel  | TRUE  | Voter |
| Rai, Kapil  | Qualcomm Incorporated  | TRUE  | Voter |
| Raissinia, Alireza  | Qualcomm Incorporated  | TRUE  | Voter |
| Rajashekar, Rakshith  | Broadcom Corporation  | TRUE  | Voter |
| Ratnam, Vishnu  | Samsung Research America  | TRUE  | Voter |
| Redlich, Oded  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Redmore, Josh  | Cable Television Laboratories Inc. (CableLabs)  | TRUE  | Potential Voter |
| Regev, Dror  | Toga Networks (A Huawei Company)  | TRUE  | Voter |
| REICH, MOR  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Rezk, Meriam  | Qualcomm Technologies, Inc  | TRUE  | Voter |
| Riegel, Maximilian  | Nokia  | TRUE  | Voter |
| Rison, Mark  | Samsung Cambridge Solution Centre  | TRUE  | Voter |
| Robert, Joerg  | Fraunhofer IIS; Technische Universitaet Ilmenau  | FALSE  | Voter |
| Rodine, Craig  | Sandia National Laboratories  | TRUE  | Voter |
| Rodriguez, Stephen  | Cisco Systems, Inc.  | TRUE  | Aspirant |
| Rolfe, Benjamin  | Blind Creek Associates  | FALSE  | Aspirant |
| Rosdahl, Jon  | Qualcomm Technologies, Inc.  | TRUE  | Voter |
| Roy, Sayak  | NXP Semiconductors  | TRUE  | Voter |
| Ryu, Kiseon  | NXP Semiconductors  | TRUE  | Voter |
| Salem, Mohamed  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Sand, Stephan  | German Aerospace Center (DLR)  | TRUE  | Voter |
| sanderovich, Amichai  | Wiliot Ltd  | TRUE  | Potential Voter |
| Sandhu, Shivraj  | Qualcomm Incorporated  | FALSE  | Aspirant |
| Santra, Avik  | Infineon Technologies  | TRUE  | Potential Voter |
| Sarris, Ioannis  | Adveos  | TRUE  | Voter |
| Sato, Naotaka  | Sony Group Corporation  | TRUE  | Voter |
| Sato, Takuhiro  | SHARP CORPORATION  | TRUE  | Voter |
| Schelstraete, Sigurd  | MaxLinear  | TRUE  | Voter |
| Schweizer, Benedikt  | Apple Inc.  | TRUE  | Voter |
| Scott, Andy  | NCTA  | TRUE  | Voter |
| Segev, Jonathan  | Intel  | TRUE  | Voter |
| Seguine, Ryan  | Infineon Technologies  | TRUE  | Aspirant |
| Seo, Sangho  | Broadcom Corporation  | TRUE  | Voter |
| Seok, Yongho  | MediaTek Inc.  | TRUE  | Voter |
| Serafimovski, Nikola  | pureLiFi  | TRUE  | Voter |
| Serizawa, Kazunobu  | Advanced Telecommunications Research Institute International (ATR)  | TRUE  | Voter |
| Sethi, Ankit  | NXP Semiconductors  | TRUE  | Voter |
| Sevin, Julien  | Canon Research Centre France  | TRUE  | Voter |
| Shafin, Rubayet  | Samsung Research America  | TRUE  | Voter |
| Shaw, Amit  | Infineon Technologies  | TRUE  | Voter |
| Shellhammer, Stephen  | Qualcomm Incorporated  | TRUE  | ExOfficio |
| Shen, Andy  | Futurewei Technologies  | TRUE  | Voter |
| Sherlock, Ian  | Texas Instruments Inc.  | TRUE  | Voter |
| Shilo, Shimi  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Shirakawa, Atsushi  | SHARP CORPORATION  | TRUE  | Voter |
| Shu, Tongxin  | Huawei Technologies Co., Ltd  | FALSE  | Voter |
| siaud, isabelle  | Orange  | TRUE  | Voter |
| Smith, Graham  | SR Technologies  | TRUE  | Voter |
| Smith, Luther  | Cable Television Laboratories Inc. (CableLabs)  | TRUE  | Voter |
| Son, Ju-Hyung  | WILUS Inc.  | TRUE  | Voter |
| Song, Hao  | Intel Corporation  | TRUE  | Voter |
| Sood, Ayush  | Infineon Technologies  | FALSE  | Voter |
| Sosack, Robert  | Molex Incorporated  | TRUE  | Voter |
| Srinivasa, Sudhir  | NXP Semiconductors  | TRUE  | Voter |
| Srivatsa, Veena  | Synaptics; Synaptics Incorporated  | TRUE  | Voter |
| Stacey, Robert  | Intel  | TRUE  | Voter |
| Stanley, Dorothy  | Hewlett Packard Enterprise  | TRUE  | Voter |
| Stott, Noel  | Keysight Technologies  | TRUE  | Voter |
| Strauch, Paul  | Qualcomm Incorporated  | TRUE  | Voter |
| Strobel, Rainer  | MaxLinear  | TRUE  | Potential Voter |
| Su, Hang  | Broadcom Corporation  | TRUE  | Voter |
| SU, HONGJIA  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Suh, JUNG HOON  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Sumi, Takenori  | Mitsubishi Electric Corporation  | TRUE  | Voter |
| Sun, Bo  | Sanechips  | TRUE  | Voter |
| Sun, Jiaqi  | China Mobile (Hangzhou) Information Technology Co., Ltd.  | TRUE  | Voter |
| Sun, Li  |   | FALSE  | Non-Voter |
| Sun, Li-Hsiang  | MediaTek Inc.  | FALSE  | Voter |
| Sun, Yanjun  | Qualcomm Incorporated  | TRUE  | Voter |
| SURACI, FRANK  | U.S. Department of Homeland Security  | TRUE  | Voter |
| Szott, Szymon  | AGH University of Science and Technology  | TRUE  | Voter |
| Tadahal, Shivkumar  | Broadcom Corporation  | FALSE  | Voter |
| Takai, Mineo  | Space-Time Engineering  | TRUE  | Voter |
| Talha, Mohd.  | NXP Semiconductors  | TRUE  | Aspirant |
| Tanaka, Yusuke  | Sony Group Corporation  | TRUE  | Voter |
| Tang, Zhuqing  | Huawei Technologies Co., Ltd  | TRUE  | Aspirant |
| Taori, Rakesh  | Infineon Technologies  | TRUE  | Voter |
| Thakore, Darshak  | Cable Television Laboratories Inc. (CableLabs)  | TRUE  | Voter |
| Thakur, Sidharth  | Apple Inc.  | TRUE  | Voter |
| Thiagarajan, Ganesan  | Morse Micro  | TRUE  | Aspirant |
| Thota, Sri Ramya  | Infineon Technologies  | TRUE  | Voter |
| Tian, Bin  | Qualcomm Incorporated  | TRUE  | Voter |
| Tomeba, Hiromichi  | SHARP CORPORATION  | TRUE  | Voter |
| Torrijo, Alejandro  | MaxLinear Corp  | TRUE  | Voter |
| Trainin, Solomon  | Qualcomm Incorporated  | FALSE  | Voter |
| Tsai, Tsung-Han  | MediaTek Inc.  | TRUE  | Voter |
| Tsodik, Genadiy  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Tsujimaru, Yuki  | Canon Inc.  | TRUE  | Voter |
| TU, Chunjiang  | Bestechnic INC.  | TRUE  | Voter |
| Uln, Kiran  | Infineon Technologies  | TRUE  | Voter |
| Urabe, Yoshio  | Panasonic Holdings Corporation  | TRUE  | Voter |
| Vaidya, Maulik  | Charter Communications  | FALSE  | Non-Voter |
| Val, Inaki  | MaxLinear, Inc.  | TRUE  | Voter |
| Van Nee, Richard  | Qualcomm Technologies Netherlands BV  | TRUE  | Voter |
| Van Zelst, Allert  | Qualcomm Technologies Netherlands B.V.  | TRUE  | Voter |
| Varshney, Prabodh  | Nokia  | TRUE  | Voter |
| Verma, Lochan  | Apple Inc.  | TRUE  | Voter |
| Verma, Sindhu  | Broadcom Corporation  | TRUE  | Voter |
| Vermani, Sameer  | Qualcomm Incorporated  | TRUE  | Voter |
| Vicent Colonques, Santiago  | MaxLinear Corp  | TRUE  | Voter |
| VIGER, Pascal  | Canon Research Centre France  | TRUE  | Voter |
| Wang, Chao Chun  | MediaTek Inc.  | TRUE  | Voter |
| Wang, Hao  | Tencent  | TRUE  | Voter |
| Wang, Hejun  | Haier Group Corporation  | TRUE  | Voter |
| Wang, Huizhao  | NXP Semiconductors  | TRUE  | Voter |
| Wang, Lei  | Futurewei Technologies  | TRUE  | Voter |
| Wang, Pu  | Mitsubishi Electric Research Laboratories  | TRUE  | Aspirant |
| Wang, Qi  | Apple, Inc.  | TRUE  | Voter |
| Wang, Shukun  | Beijing OPPO telecommunications corp., ltd.  | TRUE  | Voter |
| Wang, Steven Qi  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Wang, Xiaofei  | InterDigital, Inc.  | TRUE  | Voter |
| Wang, Yi-Hsiu  | Zeku  | TRUE  | Voter |
| Wang, Zisheng  | ZTE Corporation  | TRUE  | Voter |
| Want, Roy  | Google  | TRUE  | Voter |
| Ward, Lisa  | Rohde & Schwarz  | TRUE  | Voter |
| Wei, Dong  | NXP Semiconductors  | TRUE  | Voter |
| Wei, Hung-Yu  | National Taiwan University  | TRUE  | Voter |
| Wendt, Matthias  | Signify  | FALSE  | Voter |
| Wentink, Menzo  | Qualcomm Technologies, Inc  | TRUE  | Voter |
| Wilhelmsson, Leif  | Ericsson AB  | TRUE  | Voter |
| Wu, Chao-Yi  | SAMSUNG ELECTRONICS  | TRUE  | Aspirant |
| Wu, Hao  | XGIMI Technology Co.Ltd  | TRUE  | Voter |
| Wu, Kanke  | Qualcomm Incorporated  | TRUE  | Voter |
| Wu, Tianyu  | Apple, Inc.  | TRUE  | Voter |
| Wu, Wayne  | MediaTek Inc.  | TRUE  | Voter |
| Wullert, John  | Peraton Labs  | TRUE  | Voter |
| Xia, Qing  | Sony Corporation  | TRUE  | Voter |
| Xin, Liangxiao  | Zeku  | TRUE  | Voter |
| Xin, Yan  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Xu, Fangxin  | Longsailing Semiconductor  | TRUE  | Voter |
| Xu, Weijie  | Beijing OPPO telecommunications corp., ltd.  | TRUE  | Voter |
| Xu, Yanchao  | Zeku  | TRUE  | Voter |
| YAGHOOBI, HASSAN  | Intel  | TRUE  | Voter |
| Yamada, Ryota  | SHARP CORPORATION  | TRUE  | Voter |
| Yan, Aiguo  | Zeku  | TRUE  | Voter |
| Yan, Peng  | Wi-Fi Alliance  | TRUE  | Voter |
| Yan, Zhongjiang  | Northwestern Polytechnical University  | TRUE  | Voter |
| Yanamandra, Subrahmanyam  | Broadcom Corporation  | TRUE  | Voter |
| Yang, Jay  | Nokia  | TRUE  | Voter |
| Yang, Lin  | Qualcomm Incorporated  | TRUE  | Voter |
| Yang, Mao  | Northwestern Polytechnical University  | TRUE  | Voter |
| YANG, Ning  | Guangdong OPPO Mobile Telecommunications Corp.,Ltd  | FALSE  | Non-Voter |
| YANG, RUI  | InterDigital, Inc.  | TRUE  | Voter |
| Yang, Steve TS  | MediaTek Inc.  | TRUE  | Voter |
| Yang, Xun  | Huawei Technologies Co., Ltd  | FALSE  | Voter |
| Yano, Kazuto  | Advanced Telecommunications Research Institute International (ATR)  | TRUE  | Voter |
| Yee, James  | MediaTek Inc.  | TRUE  | Voter |
| Yee, Peter  | NSA-CSD  | TRUE  | Voter |
| Yi, Yongjiang  | Spreadtrum Communication USA, Inc  | TRUE  | Voter |
| Yong, Su Khiong  | Apple, Inc.  | FALSE  | Voter |
| Yoon, Jeonghwan  | LG ELECTRONICS  | FALSE  | Aspirant |
| Yoon, Kangjin  | Meta Platforms Inc.  | TRUE  | Potential Voter |
| Yoon, Yelin  | LG ELECTRONICS  | TRUE  | Voter |
| Young, Christopher  | Broadcom Corporation  | TRUE  | Voter |
| Yu, Jian  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Yu, Mao  | Ripple Technology  | TRUE  | Potential Voter |
| Zeng, Yan  | Huawei Technologies Co., Ltd  | TRUE  | Potential Voter |
| Zhang, Hongyuan  | NXP Semiconductors  | TRUE  | Voter |
| Zhang, Jiayi  | Ofinno  | TRUE  | Voter |
| Zhang, Rong  | NXP Semiconductors  | TRUE  | Voter |
| Zhang, Yan  | NXP Semiconductors  | TRUE  | Voter |
| Zhang, Yiyan  | Huawei Technologies Co., Ltd  | TRUE  | Potential Voter |
| Zhou, Lei  | H3C Technologies Co., Limited  | TRUE  | Voter |
| Zhou, Pei  | Guangdong OPPO Mobile Telecommunications Corp.,Ltd  | TRUE  | Voter |
| Zhou, Renlong  | Sanechips Technology Co., Ltd.  | TRUE  | Voter |
| zhu, lihua  | Ruijie Networks Co., Ltd  | TRUE  | Voter |
| Zhu, Peiying  | Huawei Technologies Co., Ltd  | TRUE  | Voter |
| Zuniga, Juan Carlos  | Cisco Systems, Inc.  | TRUE  | Voter |
| Zuo, Zhisong  | Guangdong OPPO Mobile Telecommunications Corp.,Ltd  | TRUE  | 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 |
| 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) Standing Committee Chair | +1-719-286-8660jim.lansford@ieee.org |
| Mark Hamilton(Ruckus Wireless) | Architecture (ARC) Standing Committee Chair | +1 (303) 818-8472mark.hamilton2152@gmail.com |
| Jon Rosdahl(Qualcomm) | Project Authorization Request (PAR) Standing Committee Chair | +1 (801) 492-4023jrosdahl@ieee.org |
| Marc Emmelmann(Self) | Coexistence (Coex) Standing Committee Chair | marc.emmelmann@me.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 (Self) | TGbc ChairBroadcast Services (BCS) | marc.emmelmann@me.com |
| Bo Sun (Sanechips) | TGbd ChairNext Generation V2X (NGV) | sun.bo1@sanechips.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  |
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| Carol Ansley(Cox Communications) | TGbi ChairEnhanced Data Privacy (EDP) | carol@ansley.com  |
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| Jonathan Segev (Intel Corporation) | TGbk Chair320 MHz Positioning | +972-54-2403587jonathan.segev@intel.com |

|  |
| --- |
|  |

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

|  |  |  |
| --- | --- | --- |
| Name (Affiliation)  | Position | Contact Details |
| Xiaofei Wang(InterDigital) | Artificial Intelligence/Machine Learning (AIML) TIG | Xiaofei.Wang@interdigital.com  |
| Bo Sun(Sanechips) | Ambient Power IoT (AMP) TIG | sun.bo1@sanechips.com.cn  |
| Laurent Cariou (Intel) | Ultra High Reliability (UHR) SG | laurent\_cariou@yahoo.fr  |

**Ad-Hoc Groups (AHG)**

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

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| --- | --- | --- |
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|  |  |  |
| --- | --- | --- |
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| 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 session. 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 | 23-0493r0 |
| TGme | TG | 23-0435r0 |
| TGbb | TG | 23-0469r1 |
| TGbc | TG | 23-0408r0 |
| TGbe | TG | 23-0413r0 |
| TGbf | TG | 23-0485r0 |
| TGbh | TG | 23-0450r0 |
| TGbi | TG | 23-0500r0 |
| TGbk | TG | 23-0418r0 |
| COEX | SC | 23-0484r0 |
| WNG | SC | 23-0445r0 |
| JTC 802 | SC | 23-0xxxr0 |
| ARC | SC | 23-0215r0 |
| PAR | SC | 23-0380r0 |
| AIML | TIG | 23-0564r0 |
| AMP | TIG | 23-0440r1 |
| UHR  | SG | 23-0409r0 |
| ITU | AHC | 23-0210r0 |

**Annex D : Revisions and Standards Pipeline**

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**IEEE 802.11 Standards Pipeline**

**Annex E: Recorded vote for motion #13**

| **Name & Affiliation** | **Yes** | **No** | **Abstain** |
| --- | --- | --- | --- |
|  Mineo Takai, Space-Time Engineering  | X |  |  |
|  Rich Kennedy  | X |  |  |
|  Carol Ansley, Cox  | X |  |  |
|  Mike Montemurro Huawei  | X |  |  |
|  Sebastian Max Ericsson  | X |  |  |
|  Liangxiao Xin Zeku  | X |  |  |
|  Bin Tian Qualcomm  | X |  |  |
|  Yusuke Asai, NTT  | X |  |  |
|  Gaurav Patwardhan HPE  | X |  |  |
|  Brian Hart  | X |  |  |
|  Carlos Aldana Meta  | X |  |  |
|  Gary Anwyl, Mediatek Inc  | X |  |  |
|  Jonathan Segev intel corporation  | X |  |  |
|  Shubhodeep Adhikari Broadcom  |  |  | X |
|  Ian Sherlock  | X |  |  |
|  Binita Gupta, Meta  | X |  |  |
|  Abdel Karim Ajami, Qualcomm  | X |  |  |
|  Rubayet Shafin, Samsung Research America  | X |  |  |
|  Manish Kumar -NXP  | X |  |  |
|  Meriam Rezk Qualcomm Technologies Inc.  | X |  |  |
|  Hassan Omar [Huawei]  | X |  |  |
|  Zinan Lin, InterDigital  |  | X |  |
|  Lisa Ward - Rohde & Schwarz  |  |  | X |
|  Lan Peng Huawei  | X |  |  |
|  Naveen Kakani, Qualcomm  | X |  |  |
|  Srinath Puducheri Sundaravaradhan  |  |  | X |
|  Alice Jialing Li Chen Qualcomm  | X |  |  |
|  Zhongjiang Yan Northwestern Polytechnical University  | X |  |  |
|  Bo Li Northwestern Polytechnical University  | X |  |  |
|  Masatomo OUCHI, Canon  |  |  | X |
|  TJ Kang - Broadcom  |  | X |  |
|  Hejun Wang, Haier  | X |  |  |
|  Jinyoung Chun, LG  | X |  |  |
|  Yuki Tsujimaru Canon  | X |  |  |
|  Sungjin Park, Senscomm  | X |  |  |
|  Colin Kim - Broadcom  |  | X |  |
|  Shuang Fan, Sanechips  | X |  |  |
|  James Chiang, MediaTek  | X |  |  |
|  Eason Chen-Yi Chang, MediaTek  | X |  |  |
|  Ryota Yamada, Sharp  | X |  |  |
|  Hank Chihan Huang, MediaTek  | X |  |  |
|  Frank Chien-Fang Hsu, Mediatek  |  |  | X |
|  Hanjin Joh, KT Corp.  | X |  |  |
|  Eunsung Jeon Samsung  | X |  |  |
|  Renlong Zhou,Sanechips  | X |  |  |
|  Myeongjin Kim, Samsung  | X |  |  |
|  Ryuichi Hirata Sony  | X |  |  |
|  Rakshith Rajashekar, Broadcom  |  | X |  |
|  B Hari Ram NXP  | X |  |  |
|  Dinakar Prabhakaran Broadcom  |  | X |  |
|  Girish Madpuwar {Synaptics}  | X |  |  |
|  Veena Srivatsa  | X |  |  |
|  Sindhu Verma Broadcom  |  |  | X |
|  Yingqiao Quan,Unisoc  |  | X |  |
|  Yapu Li, OPPO  | X |  |  |
|  Yunsi Ma HiSilicon Shanghai  | X |  |  |
|  XIANDONG DONG-XIAOMI  |  |  | X |
|  Fangxin Xu Longsailing Semiconductor  |  |  | X |
|  Ning Gao, OPPO  | X |  |  |
|  Chaoming Luo, OPPO  | X |  |  |
|  Phoebe ShuMin Cheng, Mediatek  | X |  |  |
|  Mao Yang Northwestern Polytechnical University  | X |  |  |
|  Hungtao Hsieh, MEDIATEK  | X |  |  |
|  Bo Gong Huawei  | X |  |  |
|  Jiaqi Sun, China Mobile  |  |  | X |
|  Yousi Lin Huawei  | X |  |  |
|  George Chih-Chun Kuo, Mediatek  | X |  |  |
|  Wayne Cheng-Ying Wu, Mediatek  | X |  |  |
|  Abhishek Mantha - Broadcom  | X |  |  |
|  Mengshi Hu Huawei  | X |  |  |
|  Zack Chingwen Hsiao, MEDIATEK  | X |  |  |
|  Lei Zhou,New H3C  | X |  |  |
|  Cheng-Ming Chen Qualcomm  | X |  |  |
|  Rui Du Huawei  | X |  |  |
|  Zhi Mao, Huawei  | X |  |  |
|  Wei Lin Huawei  | X |  |  |
|  manoj raveendranath kamath broadcom  |  | X |  |
|  Tim Godfrey  | X |  |  |
|  Allan Jones - Activision  | X |  |  |
|  Kazuto Yano, ATR  | X |  |  |
|  Erik Lindskog Samsung  | X |  |  |
|  Guogang Huang Huawei  | X |  |  |
|  Junghoon Suh Huawei  | X |  |  |
|  Hitoshi Morioka, SRC Software  |  |  | X |
|  Carl Kain USDOT; Noblis  | X |  |  |
|  Kazunobu Serizawa, ATR  | X |  |  |
|  Marc Emmelmann - SELF  | X |  |  |
|  Fumihide Goto, DENSO  |  |  | X |
|  Hiromichi Tomeba, sharp  | X |  |  |
|  Akira Kishida NTT  | X |  |  |
|  Kengo Nagata NTT  | X |  |  |
|  Kanke Wu, Qualcomm  | X |  |  |
|  Michail Koundourakis, Samsung  | X |  |  |
|  Claudio da Silva, Meta  | X |  |  |
|  Ross Yu Huawei  | X |  |  |
|  Jeongki Kim Ofinno  | X |  |  |
|  Takuhiro Sato, Sharp  | X |  |  |
|  Atsushi Shirakawa, Sharp  | X |  |  |
|  Liuming Lu OPPO  | X |  |  |
|  Mahmoud Kamel, InterDigial  | X |  |  |
|  Hiroshi Mano (DSA | X |  |  |
|  Aiguo Yan -Zeku  | X |  |  |
|  Alfred Asterjadhi, Qualcomm Inc.  | X |  |  |
|  You-Wei Chen, MediaTek  | X |  |  |
|  Juan Carlos Zuniga, Cisco  | X |  |  |
|  Rethna Pulikkoonattu Broadcom  |  | X |  |
|  Jianhan Liu Mediatek  | X |  |  |
|  Charlie Pettersson Ericsson  | X |  |  |
|  Chunyu Hu Meta  | X |  |  |
|  Zhenguo Du, Huawei  | X |  |  |
|  Amelia Andersdotter, Sky Group/Comcast  |  | X |  |
|  Nikola Serafimovski  | X |  |  |
|  Yan Xin, Huawei  | X |  |  |
|  Rui Yang, InterDigital  |  |  | X |
|  Bo Sun, Sanechips  | X |  |  |
|  Andy Shen, Futurewei  | X |  |  |
|  Pu Perry Wang -MERL  | X |  |  |
|  Xiaofei Wang InterDigital  |  | X |  |
|  Hanqing Lou InterDigital  | X |  |  |
|  Hyungjin Kim - Broadcom  |  |  | X |
|  Hassan Yaghoobi, Intel  | X |  |  |
|  Lalit Garg, Broadcom  |  |  | X |
|  Lakshmi Narayana Mukkapati- [Wi-Fi Alliance]  |  |  | X |
|  Yonggang Fang MediaTek  | X |  |  |
|  Srinivas Kandala Samsung  | X |  |  |
|  kiwin PALM [BRCM]  |  |  | X |
|  Rolf de Vegt  | X |  |  |
|  Chris Young  |  | X |  |
|  Hang Su Broadcom  |  |  | X |
|  Vamsi Amalladinne, Qualcomm Inc.  | X |  |  |
|  Karim Nassiri-Toussi, Broadcom  |  | X |  |
|  Dave Intel  | X |  |  |
|  Samir Khericha, Broadcom  |  | X |  |
|  Lin Yang Qualcomm  | X |  |  |
|  Siukai Mak, Broadcom  |  |  | X |
|  Ishaque Kadampot, Qualcomm  | X |  |  |
|  Cheng Chen, Intel  | X |  |  |
|  Shengquan Hu Mediatek  | X |  |  |
|  George Cherian Qualcomm  | X |  |  |
|  Dibakar Das, Intel  | X |  |  |
|  Daniel R. Borges, Apple | X |  |  |
|  Dmitry Akhmetov, Intel  | X |  |  |
|  Ahmet Cepni  | X |  |  |
|  Yi-Hsiu Wang ZEKU  | X |  |  |
|  VK Jones - Qualcomm  | X |  |  |
|  SK Yong  | X |  |  |
|  Minyoung Park, Intel  | X |  |  |
|  Jeff J.Q. Liu  |  | X |  |
|  Yanjun Sun Qualcomm  | X |  |  |
|  Hui-Ling Lou  | X |  |  |
|  Ted Carter, Infineon Technologies  | X |  |  |
|  Kapil Rai, Qualcomm  | X |  |  |
|  Carlos Cordeiro  | X |  |  |
|  Ahmed Elsherif Qualcomm  | X |  |  |
|  Szymon Szott, AGH University  | X |  |  |
|  Stephan Sand German Aerospace Center DLR  | X |  |  |
|  David Boldy Broadcom  |  |  | X |
|  Romain GUIGNARD Canon  | X |  |  |
|  Rocco Di Taranto Ericsson  | X |  |  |
|  Micky Mehta  | X |  |  |
|  Solomon  | X |  |  |
|  Yuki FUJIMORI Canon  | X |  |  |
|  Assaf Kasher, [Qualcomm]  | X |  |  |
|  Dignus-Jan Moelker, Broadcom  | X |  |  |
|  Jouni Malinen Qualcomm  | X |  |  |
|  Alecsander Eitan - Qualcomm  | X |  |  |
|  Patrice NEZOU, Canon  | X |  |  |
|  Patrice Desmoulin, Orange  | X |  |  |
|  Mark RISON Samsung  | X |  |  |
|  Geert Awater, Qualcomm  | X |  |  |
|  Richard van Nee, Qualcomm  | X |  |  |
|  Allert van Zelst, Qualcomm  | X |  |  |
|  Ming Gan Huawei  | X |  |  |
|  Pascal Viger, Canon  | X |  |  |
|  Isabelle Siaud Orange  | X |  |  |
|  Yunbo Li Huawei  | X |  |  |
|  Julien SEVIN Canon  | X |  |  |
|  Benedikt Schweizer, Apple  | X |  |  |
|  Andreas Bluschke self  | X |  |  |
|  Ziming He, Samsung  | X |  |  |
|  Stephane Baron Canon  | X |  |  |
|  Jason Yuchen Guo Huawei  | X |  |  |
|  Santi Vicent, MaxLinear  |  | X |  |
|  Volker Jungnickel Fraunhofer HHI  | X |  |  |
|  Massinissa Lalam Sagemcom  |  |  | X |
|  Jarkko Kneckt  | X |  |  |
|  Mikael LORGEOUX Canon  | X |  |  |
|  Albert Bredewoud  |  | X |  |
|  Shimi Shilo Huawei  | X |  |  |
|  Dror Regev Huawei  | X |  |  |
|  Robert Sosack Molex  | X |  |  |
|  Li-Hsiang Sun, Mediatek  | X |  |  |
|  John Olip Broadcom  | X |  |  |
|  Lei Huang Huawei  | X |  |  |
|  Dong Wei, NXP  | X |  |  |
|  Reza Hedayat  | X |  |  |
|  Oded Redlich Huawei  | X |  |  |
|  Steve Shellhammer (Qualcomm)  | X |  |  |
|  Kurt Lumbatis ,ARRIS/CommScope  | X |  |  |
|  Mark Hamilton, CommScope  | X |  |  |
|  Ravi Gidvani, Samsung  | X |  |  |
|  Joseph Levy, Interdigital  |  |  | X |
|  Vytas Kezys, HaiLa  | X |  |  |
|  Thomas Pare Mediatek  | X |  |  |
|  Prabodh Varshney Nokia  | X |  |  |
|  David Xun Yang Huawei  | X |  |  |
|  Abhishek Patil Qualcomm  | X |  |  |
|  James Yee, MediaTek  | X |  |  |
|  Edward Au  | X |  |  |
|  Jinsoo Choi LG  | X |  |  |
|  M. Kumail Haider Meta  | X |  |  |
|  Timothy Jeffries - Futurewei  | X |  |  |
|  Vinko Erceg  | X |  |  |
|  Leif Wilhelmsson Ericsson  |  |  | X |
|  Harry Bims  | X |  |  |
|  Tuncer Baykas, Ofinno  | X |  |  |
|  Peter Yee, NSA-CSD  | X |  |  |
|  Menzo Wentink Qualcomm  | X |  |  |
|  Laurent Cariou, Intel  | X |  |  |
|  HanGyu Cho LGE  | X |  |  |
|  Kiseon Ryu NXP  | X |  |  |
|  Stephen Orr, Cisco  | X |  |  |
|  Ron Porat  |  | X |  |
|  Paul Cheng, MediaTek  | X |  |  |
|  Li Ma MediaTek  | X |  |  |
|  Sameer Vermani Qualcomm  | X |  |  |
|  Paul Strauch, Qualcomm  | X |  |  |
|  Qi Wang, Apple  |  |  | X |

End.