IEEE P802.11
Wireless LANs

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| Minutes of the IEEE P802.11 Full Working Group |
| Date: 2021-07-23 |
| Author(s): |
| Name | Company | Address | Phone | email |
| Stephen McCann | Huawei Technologies Co., Ltd | Southampton, UK |  | stephen.mccann@ieee.org  |

Abstract

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

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

**IEEE 802.11 Plenary Meeting – Session #188**

**July 12th – 20th, 2021**

**IEEE 802.11 Opening Plenary, Monday July 12th 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 467voting members and 11 Ex Officio voters of IEEE 802.11\*

There were 455 people present in the meeting.

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

1. **Notices** (11-21-0931r0 slide #3)
	1. Chair: Please note the information about the meeting decorum.
	2. Are there any members of the press present?
		1. None.
	3. IEEE Staff present
		1. Christy Bahn
2. **Approve/modify working group agenda** (11-21-0930r3)
	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. Comment (C): TGbb would like to release their slot on Friday.
	4. Chair: ok.
	5. **Move to approve the agenda 11-21-0930r3 for the Monday opening plenary**
		1. Moved: Marc Emmelmann, 2nd: Ian Sherlock
		2. No objection to approving by unanimous consent
3. **May 2021 WG Minutes**
	1. **Move to approve the May 2021 WG minutes document 11-21-0674r1**
	2. Moved: Stephen McCann, 2nd: Stuart Kerry
	3. Following neither discussion nor dissent the minutes were approved by unanimous consent.
4. **New Attendees** (11-21-0966r0 slide #4)
	1. Straw Poll:
	2. **Are you a new attendee to IEEE 802.11?**
		1. Yes: 28, No: 149
	3. There is a new members meeting on Tuesday July 13th at 09:00 ET. This is a useful tutorial for those new members to learn about IEEE 802.11.
	4. Chair: You will require to attend 9 meetings this session to obtain your attendance credit.
5. **Call for essential Patents** (11-21-0925r1)
	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** (11-21-0935r1)
	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** (11-21-0931r0)
	1. **Liaisons** (slide #4)
		1. Chair: There are 5 incoming liaisons:
		* ITU-R WP5A re: M.2121 ITS
		* ITU-R WP5A re: M.1801-2
		* ITU-R WP5A re: M.1450-5
		1. These are assigned to the ITU ad hoc group
		* ITU-R WP 1A re: Light Communications
		1. This is assigned to TGbb
		* ETSI BRAN re: 5GHz channel access
		1. This is assigned to the Coex SC
	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** (11-21-0931r0 slide #8)
	2. **Joint meetings & reciprocal credit with IEEE 802 groups** (slide #9)
		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: Please remember to record your attendance for each meeting during this session.
	3. **M3.3 Other WG meeting plans** (11-21-0963r1 slide #2)
		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 (slide #5)
		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** (slide #7)
		1. VC1: Please remember this advice when you are presenting during online calls.
	5. **Meeting Registration** (slide #9)
		1. VC1: Please note that paid registration is required for this meeting. At the moment there are over 962 registered people for this July plenary.
		2. No questions
	6. **M3.7 Recording attendance** (slide #10)
		1. VC1: Please note the rules about recording attendance at each IEEE 802.11 meeting during this plenary. I would like to remind you that require to attend 9 sessions this session to gain your attendance credit.
		2. Question (Q): What is the exact number of slots?
		3. Answer (A): 9
9. **Status of all groups** (11-21-0931r0)
	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. There are currently two open positions. I would like to acknowledge all the assistance from the volunteers mentioned on this slide.
	3. **Summary of Ballots** (slide #19)
		1. There have been three comment collections since the May 2021 meeting.
10. **Membership** (11-21-0931r0 slide #22)
	* 1. These slides show the IEEE 802.11 membership numbers, by affiliation and whether members have been recently active.
		2. No questions
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** (11-21-0936r1)
	1. Special notes were mentioned for the following groups:
	2. **Editors’ meeting and ANA** (slides #3 & #4)
		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 two main items for this session:
		2. a) Complete technical content for the reply LS to WBA
		3. b) Progress/Complete 11-21/0013 – the Technical Report on Interworking
		4. No questions
	4. **ARC SC** (slide #7)
		1. There have been several teleconferences since the May 2021 meeting, basically discussing various architecture topics and 802.11be multi-link architecture options.
		2. Please note that there is some interest in revising the IEEE 802 architecture, possible starting in a new IEEE 802 ad hoc group.
		3. No questions
	5. **Coex** **SC** (slide #9)
		1. This standing committee will now meet once this session.
		2. No questions
	6. **PAR SC** (slide #10)
		1. There are 10 PARs for consideration this session.
		2. No questions
	7. **WNG** (slide #11)
		1. There will no meeting this session.
		2. No questions
	8. **JTC1** **SC** (slide #12)
		1. There is 1 meeting during this session.
		2. No questions
	9. **REVme** (slide #15)
		1. The objective for this session is to consider comments from the D0.0 comment collection.
		2. REVme D0.1 has been produced with the 802.11ax-2021 roll-in.
		3. No questions
	10. **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
	11. **TGaz** (slide #17)
		1. The group is working on resolving comments from Letter Ballot 253 on P802.11az D3.0.
		2. No questions
	12. **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
	13. **TGbb** (slide #20)
		1. The group is meeting several times during this session.
		2. The LC Optimized PHY will be discussed, possibly deciding to remove it and therefore update the PAR.
		3. No questions.
	14. **TGbc** (slide #21)
		1. The goals are to continue resolution of the comments received in the recent comment collection.
		2. No questions
	15. **TGbd** (slide #23)
		1. The group wishes to hold a re-circulation letter ballot motion this session and therefore there are only 2 meetings this session.
		2. No questions
	16. **TGbe** (slide #27)
		1. Drafts 1.0 and 1.01 have been published since the May 2021 meeting and a lot of comment resolutions have been completed. In addition, a draft co-existence assessment has also been produced.
		2. Q: When will the work for CC36 and CC37 be completed?
		3. A: March or May 2022
	17. **TGbf** (slide #30)
		1. There have been 7 teleconference calls since the May 2021 meeting on various topics.
		2. No questions
	18. **TGbh** (slide #32)
		1. There are three meetings during this session.
		2. No questions.
	19. **TGbi** (slide #33)
		1. There are three meetings during this session.
		2. No questions.
	20. **ITU ad-hoc** (slide #34)
		1. There are 2 submissions that will be discussed during the single meeting this session.
		2. No questions.
13. **IEEE 802.18 Liaison** (11-21-1055r0)
	1. This document shows the details of the IEEE 802.18 meetings this session and will meet twice.
	2. No questions.
14. **IEEE 802.19 Liaison** (11-21-1091r1)
	1. This document shows the details of the IEEE 802.19 electronic plenary.
	2. No questions.
15. **Motion**  (11-21-0631r0 slide #10)
	1. **TGbd re-circ**
	2. Chair: Robert Stacey will act as TGbd editor for this document.
	3. Unanimous
	4. C: I have produced D2.0 and this is now available
	5. Chair: Hopefully the re-circulation ballot can start later today.
16. **AoB**
	1. Chair: Please remember to record your attendance for this meeting. Please also remember to pay your registration fee for this session, if you have not already paid. Thank you.
	2. Q: Is TGbd planning to meet as scheduled?
	3. A: Yes, as TGbd still has to approve minutes and agree on some other logistical issues.
17. **Recess**
	1. Meeting recessed at 10:41 EDT.

**Tuesday, July 20th 2021**

**IEEE 802.11 Closing Plenary**

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

264 people present in the meeting.

1. **Approve/modify working group agenda** (11-21-0930r4)
	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 11-21-0930r4**
		1. Moved: Marc Emmelmann, 2nd: Al Petrick
		2. No objection to approving by unanimous consent.
2. **Announcements** (11-21-0932r0)
	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. **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
	4. **Next meeting and CAC meetings** (slide #9)
		1. The next meeting of the IEEE 802.11 working group is from September 13th – 21st 2021 and will be an electronic meeting.
		2. Please be aware of the future chair’s committee meetings (CAC), the first one of which will be on August 4th 09:00 ET. Please note the deadline for the sub-group agendas.
	5. **Sub-group minutes**
		1. Please note that sub-group minutes should be completed within 30 days from the close of this plenary.
	6. **Letters of Assurance (LoA)** (slide #10)
		1. Chair: please remember about the LoA requirements.
		2. There is one LoA request open at the moment.
	7. **IEEE Store and ISO SC6** (slides #11 - #12)
		1. Chair: IEEE 802.11ay and IEEE 802.11ba will also be published throughout this summer.
	8. **Press Releases** (slide #13)
		1. There have been no recent press releases or blog statements since the May 2021 meeting.
	9. **Public Visibility Standing Committee** (slides #14 - #16)
		1. This IEEE 802 group is designed to increase the external visibility of IEEE 802.
3. **Treasury Report** (ec-21-0130-00)
	1. VC1: This shows the treasurers’ report and is correct up to July 7th 2021.
	2. There have been some expenses which have been incurred and at the time of this report there was no income. However, the September 2021 IEEE 802 wireless interim will have a registration fee to assist with the funding of the treasury.
	3. No questions
4. **Future Venues Manager Report** (ec-21-0025-07)
	1. VC1: This slide shows the current status of future venues as of July 7th 2021.
	2. The January 2022 is still planned to be in the Hilton Panama. The contract is still being negotiated at the moment.
	3. May 2023 and May 2024 are still open dates with no potential venue.
	4. Q: Regarding May 2023, could this still be Osaka Japan; do you have is any update?
	5. VC1: It’s still to be decided. There’s not been any recent update on that venue.
	6. **September 2021** (slide #9)
	7. For September 2021, the registration page has been open since July 16th.
	8. **November 2021**
	9. There will be straw poll (ePoll) regarding whether people can attend the November 2021 plenary in August, as the worldwide COVID-19 situation may have improved a little more by then. The Canadian authorities may make some decisions about international travel from various countries from in mid-August to September. September 7th will be the day that the EC decide whether the November 2021 meeting will be online or face-to-face.
	10. Regarding the straw poll, there will be one about the November 2021 meeting and another one about the January 2022 meeting. These straw polls are just going to be inputs to a final decision for both meetings. The decision to go ahead with face-to-face meetings will also be based on other factors, not just the outcome of these straw polls.
	11. **January 2022**
	12. The IEEE 802 wireless chairs’ meeting will make a decision about the January 2022 IEEE 802 wireless interim meeting being an online meeting or face-to-face on September 1st.
	13. No questions
5. **Timelines**
	1. Updates will be made to the TGbc and TGbd timelines over the next few days.
	2. No questions
6. **Attendance statistics** (11-21-0938r1 slide #4)
	1. VC2: These slides are a summary of the attendance statistics and sub-group activities during this session.
7. **WG Committee Reports** (11-21-0938r1)
	1. **Editors** (slide #10)
		1. Performed the 11az mandatory editorial check.
		2. The editorial style guide has been updated.
		3. A change to the ordering has been made to 11bc, 11bd and 11bb.
		4. No questions
	2. **AANI** **SC** (slide #19)
		1. Progress on the “Interworking between 3GPP 5G network and WLAN” submission has been made. At the moment, the group has no opinion as to whether this report should be liaised back to the WBA.
		2. Later in this meeting, there will be a short review of some of the AANI output documents.
		3. No questions
	3. **ARC SC** (slide #25)
		1. The discussions about the TGbe architecture seems to be converging to a single solution.
		2. There is now some discussion at the IEEE 802 level to review some architecture issues within IEEE 802.
		3. No questions
	4. **Coex SC** (slide #32)
		1. There were several presentations during the meeting.
		2. No questions
	5. **PAR** **SC** (slide #35)
		1. The PAR SC met twice during this session to review 10 PARs/ICAID and will meet again on Thursday (as a normal teleconference) to review feedback.
		2. No questions
	6. **JTC1 SC** (slide #37)
		1. 11ay and 11ba will possibly enter the PSDO process shortly.
		2. No questions
	7. **REVme** (slide #43)
		1. This session was spent resolving comments from CC35.
		2. 11ax has been rolled in to REVme D0.1.
		3. 11ay will be merged in around early September 2021.
		4. There are no changes to the timeline.
		5. No questions
	8. **TGaz** (slide #46)
		1. The TG passes a motion to start a re-circulation ballot on D4.0
		2. Chair: Regarding the schedule on slide #49, the formation of the SA Ballot pool will be open shortly. The pool is open from mid-July to mid-August. You should all have received an email about this.
		3. No questions
	9. **TGbb** (slide #52)
		1. A D0.6 has been agreed this session and a new timeline has also been agreed.
		2. In addition a PAR modification has been suggested to limit some of the requirements on the project.
		3. No questions
	10. **TGbc** (slide #56)
		1. 129 comments have been approved this session together with many discussions about the architecture.
		2. It is hoped that a D2.0 re-circulation letter ballot can possibly start in September 2021.
		3. No questions
	11. **TGbd** (slide #62)
		1. There was a motion this session, at the working group opening plenary, to approve an 11bd D2.0 re-circulation letter ballot. Therefore there was only 1 meeting of TGbd itself during this session.
		2. No questions
	12. **TGbe** (slide #67)
		1. There were 4 conference calls during this session.
		2. Approved the creation of 11be D1.1, expected by July 31st 2021.
		3. Q: There is a typo on slide #2. It should be D1.1, not D1.0
		4. No questions
	13. **TGbf** (slide #72)
		1. There were 3 meetings during this session.
		2. Interesting discussions about radar issues.
		3. The SFD is being developed.
		4. No questions
	14. **TGbh** (slide #77)
		1. There is a new TGbh editor.
		2. There was a liaison from the WBA that was discussed.
		3. No questions
	15. **TGbi** (slide #84)
		1. The discussion about use cases continued during the session. There is a brainstorming document that is being worked on.
		2. No questions
	16. **ITU ad-hoc** (slide #88)
		1. There was one meeting during the session that reviewed two submissions.
		2. No questions
8. **Liaison Reports** (11-21-0938r1)
	1. **Wi-Fi Alliance** (slide #91)
		1. There is a new Wi-Fi 7 program based on 11be.
		2. No questions
	2. **IETF** (slide #95)
		1. There are still ongoing IETF-IEEE 802 coordination calls. The last one was in June 2021.
		2. The next virtual meeting will be from July 24-30th 2021.
		3. Q: Regarding the IPwave slide, I don’t think 802.11 has a code point for 802.11-OCB.
		4. A: This is IEEE 802.11p definition and means “Outside the context of a BSS”.
		5. Q: Also regarding the same slide, I don’t think 11bd is the correct place to mention RFC 8691, as it doesn’t reference IPv6.
		6. No questions
	3. **IEEE 1609** (slide #113)
		1. IEEE 1609 provides a light weight middle layer between 802.11p/bd and upper layers.
		2. There is a good working relationship between IEEE 1609 and IEEE 802.11bd.
		3. No questions
9. **Working Group Motions (Old Business)** (11-21-0966r3)
	1. **802.11-2020 comments liaison to ISO** (slide #7)
		1. **The IEEE 802.11 WG recommends to the IEEE 802 EC that the material in 11-21-1039-03 be liaised to ISO/IEC JTC1/SC6 as a response to comments on IEEE Std 802.11-2020 during the 60-day ballot under the PSDO agreement with ISO.**
		2. Moved by Andrew Myles, 2nd: Dan Harkins
		3. Result: Yes: 106, No: 0, Abstain: 22 (Motion passes)
	2. **TGax re-circulation ballot** (slide #7)
		1. **Having approved comment resolutions for all of the comments received from LB253 on P802.11az D3.0 as contained in document 11-21-0258r8,**
		2. **• Instruct the editor to prepare P802.11az D4.0 incorporating these resolutions and,**
		3. **• Approve a 15 day Working Group Recirculation Ballot asking the question “Should P802.11az D4.0 be forwarded to SA Ballot?”**
		4. Jonathan Segev on behalf of TGaz
		5. No objection to approving by unanimous consent.
		6. [TGaz result: Yes: 19, No: 0, Abstain: 6]
	3. **TGbb PAR modification** (slide #8)
		1. **Believing that the PAR modification contained in the document referenced below meets IEEE-SA guidelines,**
		2. **Request that the PAR modification contained in 11-21-1157r0 be posted to the IEEE 802 Executive Committee (EC) agenda for WG 802 preview and EC approval to submit to NesCom**
		3. Nikola Serafimovski on behalf of TGbb, 2nd: Harry Bins
		4. Result: Yes: 100, No: 2, Abstain: 34 (Motion passes)
		5. [TGaz result: Unanimous consent]
10. **Break**
	1. Chair: At this point we will have a 5 minute recess
11. **11ay Awards** (11-21-1024r0)
	1. This document contains a list of people who contributed to the TGay project which will result in IEEE Std 802.11ay-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 Edward Au for his great leadership through the 802.11ay project.
	4. C: I would also like to thank everyone in the 802.11ay project that came out of the original NG60 study group about 6 years ago. In addition, thanks to everyone else in the IEEE 802.11 working group and IEEE staff for all their help.
12. **AANI Draft liaison response to the WBA** (11-21-1198r1)
	1. This is a draft liaison response to the WBA that the AANI SC has been working on during this session. The topics include IEEE 802.11 QoS and how 5G QoS could be possibly mapped.
	2. This presentation is to inform all members about this ongoing work.
	3. Chair: Please review these documents so that they can be finalized in the September 2021 interim meeting.
	4. No questions
13. **Wireless Chairs Meeting** (11-21-0932r0 slide #16)
	1. The next meeting will be on August 4th at 15:00 ET.
14. **Next Meeting** (11-21-0932r0 slide #17)
	1. The proposed date of the next IEEE 802.11 meeting is September 13th – 21st, 2021. Please note that there is a registration fee for that meeting.
	2. There is also a Wireless Chairs’ Opening meeting on Friday September 10th.
15. **IEEE ComSoc WLAN Edition** (11-21-0932r0 slide #18)
	1. Please refer to this link regarding a future IEEE ComSoc WLAN edition about the recent and future evolution of Wi-Fi.
	2. If you are interested in contributing towards this magazine, please look at this link.
	3. The contribution deadline is September 15.
	4. No questions
16. **Any other Business (AoB)**
	1. Chair: Please remember to record your attendance for this meeting and also to pay your registration fee if you have not already done so.
17. **Adjournment**
	1. Having completed the agenda, the chair announced that the meeting was adjourned at 11:27 EDT.

**Annex A: Attendance & Affiliation**

| **Name** | **Affiliation** | **Attended >= 75%?** | **Status** |
| --- | --- | --- | --- |
| Abdelaal, Rana | Broadcom Corporation | TRUE | Voter |
| AbidRabbu, Shaima' | Istanbul Medipol University; Vestel | TRUE | Voter |
| Abouelseoud, Mohamed | Sony Corporation | TRUE | Voter |
| Aboulmagd, Osama | Huawei Technologies Co., Ltd | TRUE | Voter |
| Abushattal, Abdelrahman | Istanbul Medipol University; Vestel | TRUE | Voter |
| Adachi, Tomoko | TOSHIBA Corporation | TRUE | Voter |
| Adhikari, Shubhodeep | Broadcom Corporation | TRUE | Voter |
| Agarwal, Peyush | Broadcom Corporation | TRUE | Voter |
| Agrawal, abhishek | ON Semiconductor | FALSE | Voter |
| Agrawal, Sandeep | Centre for Development of Telematics (C-DoT) | TRUE | Voter |
| Ahmad, Tufail | Koc University | FALSE | Non-Voter |
| Aio, Kosuke | Sony Corporation | FALSE | Voter |
| Ajami, Abdel Karim | Qualcomm Incorporated | TRUE | Aspirant |
| Akhmetov, Dmitry | Intel Corporation | TRUE | Voter |
| Al Falujah, Iyad | ON Semiconductor | TRUE | Potential Voter |
| Aldana, Carlos | Facebook | TRUE | Voter |
| Alexander, Danny | Intel Corporation | TRUE | Voter |
| Allegue Martinez, Michel | Aerial Technologies Inc. | TRUE | Voter |
| Alpert, Yaron | Texas Instruments Inc. | TRUE | Aspirant |
| Amalladinne, Vamsi | Qualcomm Incorporated | TRUE | Aspirant |
| Ambede, Abhishek | Ericsson AB | TRUE | Voter |
| An, Song-Haur | INDEPENDENT | TRUE | Voter |
| Andersdotter, Amelia | None - Self-funded | 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 |
| Asai, Yusuke | NTT | TRUE | Voter |
| Ashfaq, Bismillah Nasir | Ford Otosan, Istanbul, Turkey | FALSE | Non-Voter |
| Asterjadhi, Alfred | Qualcomm Incorporated | TRUE | Voter |
| Au, Kwok Shum | Huawei Technologies Co., Ltd | TRUE | Voter |
| Au, Oscar | Origin Wireless | TRUE | Voter |
| Auluck, Vijay | Self | TRUE | Voter |
| Avallone, Stefano | University of Napoli | TRUE | Aspirant |
| Avital, Ziv | MaxLinear | TRUE | Voter |
| Awater, Geert | Qualcomm Incorporated | TRUE | Voter |
| Aygul, Mehmet | Vestel | TRUE | Voter |
| B, Hari Ram | NXP Semiconductors | TRUE | Voter |
| Badenes, Agustin | Maxlinear Corp | TRUE | Voter |
| Baek, SunHee | LG ELECTRONICS | TRUE | Voter |
| Bahn, Christy | IEEE STAFF | FALSE | Aspirant |
| Baik, Eugene | Qualcomm Incorporated | TRUE | Voter |
| Bajko, Gabor | MediaTek Inc. | TRUE | Voter |
| Banerjea, Raja | Qualcomm Incorporated | TRUE | Voter |
| Bankov, Dmitry | IITP RAS | TRUE | Voter |
| baron, stephane | Canon Research Centre France | TRUE | Voter |
| Barr, David | MaxLinear | TRUE | Voter |
| Batra, Anuj | Apple, Inc. | TRUE | Voter |
| Baykas, Tuncer | Kadir Has University, Hyperion Technologies | TRUE | Voter |
| BECHADERGUE, Bastien | OLEDCOMM | FALSE | Voter |
| Beg, Chris | Cognitive Systems Corp. | TRUE | Voter |
| Bei, Jianwei | NXP Semiconductors | TRUE | Voter |
| Ben Arie, Yaron | Toga networks (a huawei company) | TRUE | Voter |
| Berens, Friedbert | FBConsulting Sarl | TRUE | Voter |
| Berger, Christian | NXP Semiconductors | TRUE | Voter |
| Berkema, Alan | HP Inc. | TRUE | Voter |
| Berner, Stephan | PureLiFi | TRUE | Voter |
| Bhandaru, Nehru | Broadcom Corporation | TRUE | Voter |
| Bims, Harry | Bims Laboratories, Inc. | TRUE | Voter |
| Blandino, Steve | National Institute of Standards and Technology | FALSE | Non-Voter |
| Bluschke, Andreas | Signify | TRUE | Voter |
| Bober, Lennert | Fraunhofer Heinrich Hertz Institute | TRUE | Voter |
| Boldy, David | Broadcom Corporation | TRUE | Voter |
| Bouchet, Olivier | Orange | TRUE | Voter |
| Bravo, Daniel | Intel Corporation | TRUE | Voter |
| Bredewoud, Albert | Broadcom Corporation | TRUE | Voter |
| Canchi, Radhakrishna | Kyocera International Inc | TRUE | Voter |
| Cao, Rui | NXP Semiconductors | TRUE | Voter |
| Cariou, Laurent | Intel Corporation | TRUE | Voter |
| Carney, William | Sony Group Corporation | TRUE | Voter |
| Cavalcanti, Dave | Intel Corporation | TRUE | Voter |
| CHAN, YEE | Facebook | TRUE | Voter |
| Chang, Chen-Yi | Mediatek | TRUE | Aspirant |
| Chaplin, Clint | Self | FALSE | ExOfficio |
| Chayat, Naftali | Vayyar Imaging | TRUE | Voter |
| Chemrov, Kirill | IITP RAS | TRUE | Aspirant |
| Chen, Chaoliang | iComm Semiconductor | TRUE | Potential Voter |
| Chen, Cheng | Intel Corporation | TRUE | Voter |
| Chen, Cheng-Ming | Qualcomm Incorporated | TRUE | Voter |
| Chen, Evelyn | Ericsson AB | TRUE | Voter |
| chen, jindou | Huawei Technologies Co., Ltd | TRUE | Voter |
| Chen, Na | Self | TRUE | Voter |
| Chen, Xiaogang | Intel Corporation | TRUE | Voter |
| Cheng, Paul | MediaTek Inc. | TRUE | Voter |
| cheng, phoebe | MediaTek Inc. | TRUE | Aspirant |
| Cheng, Xilin | NXP Semiconductors | TRUE | Voter |
| CHERIAN, GEORGE | Qualcomm Incorporated | FALSE | Voter |
| Chiang, James | MediaTek Inc. | TRUE | Aspirant |
| Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. | TRUE | Voter |
| Chiu, Lin-Kai | MediaTek Inc. | TRUE | Aspirant |
| Chiu, WenHsien | MediaTek Inc. | FALSE | Non-Voter |
| Cho, Hanbyeog | Electronics and Telecommunications Research Institute (ETRI) | FALSE | Non-Voter |
| Cho, Hangyu | LG ELECTRONICS | FALSE | Voter |
| Choi, Jinsoo | LG ELECTRONICS | TRUE | Voter |
| Choo, Seungho | Senscomm Semiconductor Co., Ltd. | TRUE | Voter |
| Chu, Liwen | NXP Semiconductors | TRUE | Voter |
| CHUN, JINYOUNG | LG ELECTRONICS | TRUE | Voter |
| Chung, Bruce | Realtek Semiconductor Corp. | TRUE | Voter |
| Chung, Chulho | SAMSUNG | TRUE | Voter |
| Ciochina, Dana | Sony Corporation | FALSE | Voter |
| Coffey, John | Realtek Semiconductor Corp. | TRUE | Voter |
| Cordeiro, Carlos | Intel Corporation | TRUE | Voter |
| Cortes, Diana | Google | TRUE | Aspirant |
| Costa, D.Nelson | Peraso Technologies Incorporated | TRUE | Voter |
| da Silva, Claudio | Intel Corporation | TRUE | Voter |
| Dalgic, Omer | SUPSI | FALSE | Non-Voter |
| Das, Dibakar | Intel Corporation | TRUE | Voter |
| Das, Subir | Perspecta Labs Inc | TRUE | ExOfficio |
| Dash, Debashis | Apple, Inc. | TRUE | Voter |
| Dauphinee, Leonard | MAXLINEAR INC | TRUE | Voter |
| Davies, Robert | Signify | TRUE | Voter |
| de Vegt, Rolf | Qualcomm Incorporated | TRUE | Voter |
| DeLaOlivaDelgado, Antonio | InterDigital, Inc. | TRUE | Voter |
| Derham, Thomas | Broadcom Corporation | TRUE | Voter |
| Di Taranto, Rocco | Ericsson AB | TRUE | Voter |
| Ding, Baokun | Huawei Technologies Co., Ltd | TRUE | Voter |
| Ding, Yanyi | Panasonic corporation | TRUE | Voter |
| Dogukan, Ali | Vestel | TRUE | Voter |
| Dong, mingjie | Huawei Technologies Co., Ltd | TRUE | Aspirant |
| Dong, Xiandong | Xiaomi Inc. | TRUE | Voter |
| Du, Rui | Huawei Technologies Co., Ltd | TRUE | Voter |
| Du, Zhenguo | Huawei Technologies Co., Ltd | TRUE | Voter |
| Duan, Ruchen | SAMSUNG | TRUE | Voter |
| Ecclesine, Peter | Cisco Systems, Inc. | TRUE | Voter |
| Edgar, Richard | Imagination Technologies Ltd. | TRUE | Voter |
| Eitan, Alecsander | Qualcomm Incorporated | TRUE | Voter |
| ElSherif, Ahmed | Qualcomm Incorporated | TRUE | Voter |
| Emmelmann, Marc | Self Employed / Koden-TI / Fraunhofer FOKUS | TRUE | Voter |
| Erceg, Vinko | Broadcom Corporation | TRUE | Voter |
| Erell, Assaf | Vayyar Imaging Ltd. | TRUE | Voter |
| Fang, Juan | Intel Corporation | TRUE | Voter |
| Fang, Yonggang | MediaTek Inc. | TRUE | Voter |
| feng, Shuling | MediaTek Inc. | TRUE | Voter |
| Feng, Xiang | Keysight Technologies | TRUE | Voter |
| Ferruz, David | Maxlinear Corp | TRUE | Voter |
| Fischer, Matthew | Broadcom Corporation | FALSE | Voter |
| Fletcher, Paul | Samsung Cambridge Solution Center | TRUE | Voter |
| Fonseca, Dayrene | PhD student at IMDEA Networks Institute, Madrid Spain; University Carlos III of Madrid, Leganes, Spa | FALSE | Non-Voter |
| Furuichi, Sho | Sony Group Corporation | TRUE | Voter |
| Gan, Ming | Huawei Technologies Co., Ltd | FALSE | Voter |
| Ganwani, Vijay | NXP Semiconductors | TRUE | Voter |
| Garg, Lalit | Broadcom Corporation | TRUE | Voter |
| Genoves Guzman, Borja | IMDEA Networks Institute | FALSE | Non-Voter |
| Ghaderipoor, Alireza | MediaTek Inc. | TRUE | Voter |
| Ghosh, Chittabrata | Facebook, Inc. | TRUE | Voter |
| Gidvani, Ravi | SAMSUNG | TRUE | Voter |
| Godbole, sachin | Broadcom Corporation | TRUE | Potential Voter |
| Godfrey, Tim | Electric Power Research Institute, Inc. (EPRI) | FALSE | ExOfficio |
| Gong, Bo | Huawei Technologies Co., Ltd | TRUE | Voter |
| Goodall, David | Morse Micro | FALSE | Non-Voter |
| GOTO, Fumihide | DENSO | TRUE | Voter |
| Grandhe, Niranjan | NXP Semiconductors | TRUE | Voter |
| Grigat, Michael | Deutsche Telekom AG | TRUE | Voter |
| Gu, Xiangxin | UNISOC | TRUE | Potential Voter |
| GUIGNARD, Romain | Canon Research Centre France | TRUE | Voter |
| Guntupalli, Lakshmikanth | Ericsson AB | TRUE | Voter |
| Guo, Yuchen | Huawei Technologies Co., Ltd | TRUE | Voter |
| Gupta, Raghvendra | Broadcom Corporation | TRUE | Aspirant |
| Gutema, Tilahun | The University of Edinburgh | FALSE | Non-Voter |
| Haasz, Jodi | IEEE Standards Association (IEEE-SA) | FALSE | Non-Voter |
| Haider, Muhammad Kumail | Facebook | TRUE | Voter |
| Hall, Robert | Carrier corporation | TRUE | Voter |
| Hamilton, Mark | Ruckus/CommScope | TRUE | Voter |
| HAN, CHONG | pureLiFi | TRUE | Voter |
| Han, Jonghun | SAMSUNG | TRUE | Voter |
| HAN, Xiao | Huawei Technologies Co., Ltd | TRUE | Voter |
| Han, Zhiqiang | ZTE Corporation | TRUE | Voter |
| Handte, Thomas | Sony Corporation | TRUE | Voter |
| Hansen, Christopher | Covariant Corporation | TRUE | Voter |
| Harkins, Daniel | Hewlett Packard Enterprise | TRUE | Voter |
| Harrison, Edward | Anritsu Company | TRUE | Voter |
| Hart, Brian | Cisco Systems, Inc. | TRUE | Voter |
| Haskou, Abdullah | InterDigital, Inc. | TRUE | Voter |
| Hawkes, Philip | Qualcomm Incorporated | FALSE | Non-Voter |
| Henry, Jerome | Cisco Systems, Inc. | TRUE | Voter |
| Hernandez, Marco | National Institute of Information and Communications Technology (NICT) | TRUE | Potential Voter |
| Hiertz, Guido | Ericsson GmbH | FALSE | Voter |
| Hirata, Ryuichi | Sony Group Corporation | TRUE | Voter |
| Ho, Duncan | Qualcomm Incorporated | TRUE | Voter |
| Holcomb, Jay | Itron Inc. | FALSE | ExOfficio |
| Hsieh, Hung-Tao | MediaTek Inc. | TRUE | Voter |
| Hsu, Chien-Fang | MediaTek Inc. | TRUE | Voter |
| Hsu, Mengta | Mediatek | TRUE | Aspirant |
| Hsu, Mengta | Mediatek | FALSE | Non-Voter |
| Hu, Chunyu | Facebook | TRUE | Voter |
| Hu, Mengshi | Huawei Technologies Co., Ltd | TRUE | Voter |
| Hu, Shengquan | MediaTek Inc. | FALSE | Non-Voter |
| HUANG, CHIHAN | MediaTek Inc. | TRUE | Aspirant |
| Huang, Guogang | Huawei Technologies Co., Ltd | TRUE | Voter |
| Huang, Lei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | TRUE | Voter |
| Huang, Po-Kai | Intel Corporation | TRUE | Voter |
| Hurtarte, Jeorge | Teradyne, Inc. | TRUE | Voter |
| Hwang, Sung Hyun | Electronics and Telecommunications Research Institute (ETRI) | TRUE | Aspirant |
| Ibrahim, Ahmed | Samsung Research America | TRUE | Aspirant |
| Ibrahim, Mostafa | SAMSUNG | TRUE | Voter |
| Ikegami, Tetsushi | Meiji University | TRUE | Voter |
| Inoue, Yasuhiko | Self | TRUE | Voter |
| Iranzo, Salvador | MaxLinear Corp | TRUE | Voter |
| Izquierdo, Eduardo | Maxlinear Corp | TRUE | Voter |
| Jamalabdollahi, Mohsen | Cisco Systems, Inc. | FALSE | Non-Voter |
| Jang, Insun | LG ELECTRONICS | TRUE | Voter |
| Jeffries, Timothy | Futurewei Technologies | TRUE | Voter |
| Jeon, Eunsung | SAMSUNG ELECTRONICS | TRUE | Voter |
| Ji, Chenhe | Huawei Technologies Co., Ltd | TRUE | Voter |
| Jia, Jia | Huawei Technologies Co., Ltd | TRUE | Voter |
| jiang, feng | Apple Inc. | TRUE | Voter |
| Jiang, Jinjing | Apple, Inc. | TRUE | Voter |
| Jianxun, Xu | TP-Link Corporation Limited | TRUE | Aspirant |
| Joh, Hanjin | KT Corp. | TRUE | Aspirant |
| Jones, Allan | Activision | TRUE | Voter |
| Jones, Vincent Knowles IV | Qualcomm Incorporated | TRUE | Voter |
| Jung, hyojin | Hyundai Motor Company | FALSE | Non-Voter |
| JUNG, MYUNG CHEUL | KEA (Korea Electronics Association) | TRUE | Voter |
| Jungnickel, Volker | Fraunhofer Heinrich Hertz Institute | FALSE | Voter |
| Kadampot, Ishaque Ashar | Qualcomm Incorporated | TRUE | Voter |
| Kain, Carl | USDOT; Noblis, Inc. | TRUE | Voter |
| Kakani, Naveen | Qualcomm Incorporated | TRUE | Voter |
| kamath, Manoj | Broadcom Corporation | FALSE | Voter |
| Kamel, Mahmoud | InterDigital, Inc. | TRUE | Voter |
| Kandala, Srinivas | SAMSUNG | TRUE | Voter |
| Kang, HaoHua | MediaTek Inc. | TRUE | Aspirant |
| KANG, Kyu-Min | Electronics and Telecommunications Research Institute (ETRI) | TRUE | Voter |
| Kang, Sugbong | Apple, Inc. | TRUE | Voter |
| Kasher, Assaf | Qualcomm Incorporated | TRUE | Voter |
| Kedem, Oren | MaxLinear | TRUE | Potential Voter |
| Kennedy, Richard | IEEE member / Self Employed | TRUE | Potential Voter |
| Kenney, John | TOYOTA InfoTechnology Center U.S.A. | TRUE | Voter |
| Kerry, Stuart | OK-Brit; Self | TRUE | Voter |
| Khorov, EVGENY | IITP RAS | TRUE | Voter |
| Kim, Jeongki | Self | TRUE | Voter |
| Kim, Myeong-Jin | SAMSUNG | TRUE | Voter |
| kim, namyeong | LG ELECTRONICS | TRUE | Voter |
| Kim, Sang Gook | LG ELECTRONICS | TRUE | Voter |
| Kim, Sanghyun | WILUS Inc. | TRUE | Voter |
| Kim, Soo | IEEE Standards Association (IEEE-SA) | FALSE | Non-Voter |
| Kim, Wonjung | LG Uplus | FALSE | Non-Voter |
| Kim, Yongho | Korea National University of Transportation | TRUE | Voter |
| Kim, Youhan | Qualcomm Incorporated | TRUE | Voter |
| Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) | TRUE | Voter |
| Kitazawa, Shoichi | Muroran IT | TRUE | Voter |
| Klein, Arik | Huawei Technologies Co., Ltd | TRUE | Voter |
| Klimakov, Andrey | Huawei Technologies Co., Ltd | TRUE | Voter |
| KNECKT, JARKKO | Apple, Inc. | TRUE | Voter |
| Ko, Geonjung | WILUS Institute | TRUE | Voter |
| Kondo, Yoshihisa | Advanced Telecommunications Research Institute International (ATR) | TRUE | Voter |
| Koundourakis, Michail | Samsung Cambridge Solution Centre | TRUE | Potential Voter |
| Kozarev, Aleksandra | MaxLinear Corp | TRUE | Voter |
| Krieger, Ann | US Department of Defense | FALSE | Non-Voter |
| Kumar, Manish | NXP Semiconductors | TRUE | Voter |
| Kuo, Chih-Chun | MediaTek Inc. | TRUE | Aspirant |
| Kureev, Aleksey | IITP RAS | TRUE | Voter |
| Kwak, Jin-Sam | WILUS Inc. | TRUE | Voter |
| Lal, Kunal | Synaptics Incorporated | TRUE | Aspirant |
| Lalam, Massinissa | SAGEMCOM SAS | TRUE | Voter |
| Lan, Zhou | Broadcom Corporation | TRUE | Voter |
| Lanante, Leonardo | Kyushu Institute of Technology | TRUE | Aspirant |
| Lansford, James | Qualcomm Incorporated; University of Colorado at Boulder | TRUE | Voter |
| Lee, Hong Won | LG ELECTRONICS | TRUE | Potential Voter |
| Lee, Hyeong Ho | Netvision Telecom Inc. | TRUE | Voter |
| Lee, Jae Seung | Electronics and Telecommunications Research Institute (ETRI) | TRUE | Voter |
| Lee, Nancy | Signify | TRUE | Voter |
| Lee, Richard | R Lee Associates | FALSE | Non-Voter |
| Lee, Wookbong | SAMSUNG | TRUE | Voter |
| Lepp, James | None - Self-funded | TRUE | Voter |
| Levitsky, Ilya | IITP RAS | TRUE | Voter |
| Levy, Joseph | InterDigital, Inc. | TRUE | Voter |
| Li, Bo | Northwestern Polytechnical University | TRUE | Voter |
| Li, Guoqing | Facebook | TRUE | Voter |
| Li, Jialing | Qualcomm Technologies, Inc. | TRUE | Voter |
| Li, Qinghua | Intel Corporation | TRUE | Voter |
| Li, Yan | ZTE Corporation | FALSE | Non-Voter |
| Li, Yanchun | Huawei Technologies Co., Ltd | TRUE | Voter |
| Li, Yiqing | Huawei Technologies Co., Ltd | TRUE | Voter |
| li, yun | ZTE Corporation | FALSE | Non-Voter |
| Li, Yunbo | Huawei Technologies Co., Ltd | TRUE | Voter |
| Lim, Dong Guk | LG ELECTRONICS | TRUE | Voter |
| lim, taesung | LG ELECTRONICS | TRUE | Potential Voter |
| Lin, Hsin-De | MediaTek Inc. | TRUE | Aspirant |
| Lin, Wei | Huawei Technologies Co., Ltd | TRUE | Voter |
| Lin, Zinan | InterDigital, Inc. | TRUE | Potential Voter |
| Lindskog, Erik | SAMSUNG | TRUE | Voter |
| LIU, CHENCHEN | Huawei Technologies Co., Ltd | FALSE | Voter |
| Liu, Der-Zheng | Realtek Semiconductor Corp. | TRUE | Voter |
| Liu, Jianfei | Huawei Technologies Co., Ltd | TRUE | Voter |
| Liu, Jianhan | MediaTek Inc. | TRUE | Voter |
| Liu, Ying | NXP Semiconductors | TRUE | Potential Voter |
| Liu, Yong | Apple, Inc. | TRUE | Voter |
| Loginov, Vyacheslav | IITP RAS | TRUE | Voter |
| Lopez, Miguel | Ericsson AB | TRUE | Voter |
| Lorgeoux, Mikael | Canon Research Centre France | TRUE | Voter |
| Lou, Hanqing | InterDigital, Inc. | TRUE | Voter |
| Lou, Hui-Ling | NXP Semiconductors | TRUE | Voter |
| Lu, Kaiying | MediaTek Inc. | TRUE | Voter |
| Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | TRUE | Voter |
| LU, Yuxin | Huawei Technologies Co., Ltd | TRUE | Potential Voter |
| Lumbatis, Kurt | CommScope, Inc. | TRUE | Potential Voter |
| Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. | TRUE | Voter |
| Lv, Lily | Huawei Technologies Co., Ltd | TRUE | Voter |
| Lyakh, Mikhail | ON Semiconductor | TRUE | Potential Voter |
| Ma, Li | MediaTek Inc. | TRUE | Voter |
| Ma, Mengyao | Huawei Technologies Co., Ltd | TRUE | Voter |
| Madpuwar, Girish | Broadcom Corporation | TRUE | Voter |
| Majlesein, Behnaz | LightBee | FALSE | Non-Voter |
| Malichenko, Dmitrii | ON Semiconductor | TRUE | Aspirant |
| Malinen, Jouni | Qualcomm Incorporated | TRUE | Voter |
| Mano, Hiroshi | Koden Techno Info K.K. | TRUE | Voter |
| Marks, Roger | EthAirNet Associates | FALSE | ExOfficio |
| Martinez Vazquez, Marcos | MaxLinear Corp | TRUE | Voter |
| Max, Sebastian | Ericsson AB | TRUE | Voter |
| Mazor, Nadav | Vayyar Ltd | FALSE | Aspirant |
| McCann, Stephen | Huawei Technologies Co., Ltd | TRUE | Voter |
| Mcconnell, Ray | bluwireless technology | FALSE | Voter |
| Medda, Daniele | International Hellenic University | TRUE | Aspirant |
| Mehrnoush, Morteza | Facebook | TRUE | Voter |
| MELZER, Ezer | Toga Networks, a Huawei company | TRUE | Voter |
| Memisoglu, Ebubekir | Istanbul Medipol University; Vestel | TRUE | Voter |
| Merlin, Simone | Qualcomm Incorporated | TRUE | Voter |
| Minotani, Jun | Panasonic Corporation | TRUE | Voter |
| Mir, Muhammad Sarmad Shahab | IMDEA Networks Institute, Madrid, Spain; University Carlos III (UC3M), Leganes, Spain | FALSE | Non-Voter |
| Mirfakhraei, Khashayar | Zeku | TRUE | Voter |
| Moelker, Dignus-Jan | Broadcom Corporation | FALSE | Voter |
| Mohanty, Bibhu | Qualcomm Incorporated | TRUE | Voter |
| molev shteiman, arkady | Zeku Inc. | TRUE | Aspirant |
| Monajemi, Pooya | Cisco Systems, Inc. | TRUE | Voter |
| Montemurro, Michael | Huawei Technologies Co., Ltd | TRUE | Voter |
| Montreuil, Leo | Broadcom Corporation | TRUE | Voter |
| Moon, Juseong | Korea National University of Transportation | TRUE | Voter |
| Morioka, Hitoshi | SRC Software | TRUE | Voter |
| Motozuka, Hiroyuki | Panasonic Corporation | TRUE | Voter |
| Murti, Wisnu | SeoulTech | TRUE | Voter |
| Myles, Andrew | Cisco Systems, Inc. | TRUE | Voter |
| Nagai, Yukimasa | Mitsubishi Electric Corporation | TRUE | Voter |
| nagata, kengo | Nippon Telegraph and Telephone Corporation (NTT) | TRUE | Voter |
| Naik, Gaurang | Qualcomm Incorporated | TRUE | Potential Voter |
| Nakano, Hiroki | CAHI Corporation; Kyoto University | TRUE | Voter |
| Nam, Junyoung | Qualcomm Incorporated | TRUE | Voter |
| Namboodiri, Vamadevan | SAMSUNG ELECTRONICS | TRUE | Potential Voter |
| Nandagopalan, SAI SHANKAR | Infineon Technologies | TRUE | Voter |
| Naribole, Sharan | Apple, Inc. | TRUE | Voter |
| Nassiri Toussi, Karim | Broadcom Corporation | TRUE | Voter |
| Nayak, Peshal | Samsung Research America | TRUE | Aspirant |
| Nezou, Patrice | Canon Research Centre France | TRUE | Voter |
| Ng, Boon Loong | Samsung Research America | TRUE | Potential Voter |
| Ngo, Kien | Palermo University; VTT Technical Research Centre of Finland | TRUE | Aspirant |
| Nguyen, An | U.S. Department of Homeland Security | FALSE | Voter |
| Nikolich, Paul | SAMSUNG | FALSE | ExOfficio |
| Noh, Yujin | Senscomm | TRUE | Voter |
| Oh, Hyun Seo | Electronics and Telecommunications Research Institute (ETRI) | FALSE | Voter |
| Okada, Hiraku | Nagoya University | TRUE | Voter |
| Omar, Hassan | Huawei Technologies Co., Ltd | TRUE | Voter |
| Orr, Stephen | Cisco Systems, Inc. | TRUE | Voter |
| Ouchi, Masatomo | Canon | TRUE | Voter |
| Oyama, Satoshi | Association of Radio Industries and Businesses (ARIB) | TRUE | Voter |
| Ozbakis, Basak | VESTEL Electronics Corp. | TRUE | Voter |
| Ozpoyraz, Burak | Vestel | FALSE | Aspirant |
| Ozyurt, Ahmet | PhD Student | FALSE | Non-Voter |
| Palayur, Saju | Maxlinear Inc | TRUE | Voter |
| Palm, Stephen | Broadcom Corporation | TRUE | Voter |
| PANG, KUN | Honor Device Co., Ltd. | FALSE | Non-Voter |
| Pare, Thomas | MediaTek Inc. | TRUE | Voter |
| Parekh, Jatin | Arista Networks, Inc. | TRUE | Voter |
| Park, Eunsung | LG ELECTRONICS | TRUE | Voter |
| Park, Minyoung | Intel Corporation | TRUE | Voter |
| Parsons, Glenn | Ericsson AB | TRUE | ExOfficio |
| Patil, Abhishek | Qualcomm Incorporated | TRUE | Voter |
| Patwardhan, Gaurav | Hewlett Packard Enterprise | TRUE | Voter |
| Peng, Ronny | MediaTek Inc. | TRUE | Aspirant |
| Perahia, Eldad | Hewlett Packard Enterprise | TRUE | Voter |
| Perez, Dan | IEEE SA STAFF | FALSE | Non-Voter |
| Petranovich, James | ViaSat, Inc. | TRUE | Voter |
| petrick, Albert | Jones-Petrick and Associates, LLC. | TRUE | Voter |
| Petry, Brian | Broadcom Corporation | TRUE | Voter |
| Pirhonen, Riku | NXP Semiconductors | TRUE | Voter |
| Porat, Ron | Broadcom Corporation | TRUE | Voter |
| Prabhakaran, Dinakar | Broadcom Corporation | TRUE | Voter |
| Puducheri, Srinath | Broadcom Corporation | TRUE | Voter |
| Pulikkoonattu, Rethnakaran | Broadcom Corporation | TRUE | Voter |
| Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. | TRUE | Voter |
| Qi, Emily | Intel Corporation | TRUE | Voter |
| Rafique, Saira | Istanbul Medipol University; Vestel | TRUE | Voter |
| Rai, Kapil | Qualcomm Incorporated | TRUE | Voter |
| Raissinia, Alireza | Qualcomm Incorporated | TRUE | Voter |
| Ratnam, Vishnu | Samsung Research America | TRUE | Aspirant |
| Redlich, Oded | Huawei Technologies Co., Ltd | TRUE | Voter |
| Rege, Kiran | Perspecta Labs | TRUE | Voter |
| Regev, Dror | Toga Networks (a Huawei Company) | TRUE | Voter |
| REICH, MOR | Huawei Technologies Co., Ltd | TRUE | Voter |
| Rezk, Meriam | Qualcomm Incorporated | TRUE | Voter |
| Riegel, Maximilian | Nokia | TRUE | Voter |
| Rison, Mark | Samsung Cambridge Solution Centre | TRUE | Voter |
| Roder, Patricia | IEEE Standards Association (IEEE-SA) | FALSE | Non-Voter |
| Rolfe, Benjamin | Blind Creek Associates | TRUE | Voter |
| Rosdahl, Jon | Qualcomm Technologies, Inc. | TRUE | Voter |
| Roy, Sayak | NXP Semiconductors | TRUE | Voter |
| Ryu, Kiseon | Ofinno | TRUE | Aspirant |
| Sahoo, Anirudha | National Institute of Standards and Technology | FALSE | Non-Voter |
| Sakoda, Kazuyuki | Sony Corporation | TRUE | Voter |
| Salem, Mohamed | Huawei Technologies Co., Ltd | TRUE | Voter |
| Salman, Hanadi | Istanbul Medipol University; VESTEL | TRUE | Voter |
| Sambasivan, Sam | AT&T | TRUE | Voter |
| Sand, Stephan | German Aerospace Center (DLR) | TRUE | Voter |
| Sandhu, Shivraj | Qualcomm Incorporated | TRUE | Voter |
| Sarikaya, Behcet | IEEE Member / Self Employed | FALSE | Non-Voter |
| Sato, Naotaka | Sony Group Corporation | TRUE | Voter |
| Satrasala, Rajeshwari | NXP Semiconductors | TRUE | Aspirant |
| Schelstraete, Sigurd | Maxlinear | TRUE | Voter |
| Schiessl, Sebastian | Apple, Inc. | TRUE | Voter |
| Schmidhammer, Martin | German Aerospace Center (DLR) | TRUE | Voter |
| Scott, Andy | NCTA | TRUE | Voter |
| Sedin, Jonas | Ericsson AB | TRUE | Voter |
| Segev, Jonathan | Intel Corporation | TRUE | Voter |
| Seok, Joseph | Self | TRUE | Aspirant |
| Seok, Yongho | MediaTek Inc. | TRUE | Voter |
| Serafimovski, Nikola | pureLiFi | TRUE | Voter |
| Sethi, Ankit | NXP Semiconductors | TRUE | Voter |
| Sevin, Julien | Canon Research Centre France | TRUE | Voter |
| Shafin, Rubayet | Samsung Research America | TRUE | Potential Voter |
| Shah, Kunal | Itron Inc. | TRUE | Voter |
| Shalom, Hai | Google | FALSE | Non-Voter |
| Shellhammer, Stephen | Qualcomm Incorporated | TRUE | ExOfficio |
| Sherlock, Ian | Texas Instruments Inc. | TRUE | Voter |
| Shilo, Shimi | Huawei Technologies Co., Ltd | TRUE | Voter |
| Singh, Jagdeep | Toshiba of Europe Ltd. | FALSE | Non-Voter |
| Sinn, Ulrich | Siemens AG | TRUE | Voter |
| Smith, Graham | SR Technologies | TRUE | Voter |
| Solaija, Muhammad Sohaib | Istanbul Medipol University; Vestel | TRUE | Voter |
| Son, Ju-Hyung | WILUS Inc. | TRUE | Voter |
| Song, Hao | Intel Corporation | TRUE | Aspirant |
| Sosack, Robert | Molex Incorporated | TRUE | Voter |
| Sperga, Janis | pureLiFi | FALSE | Non-Voter |
| Srinivasa, Sudhir | NXP Semiconductors | TRUE | Voter |
| Stacey, Robert | Intel Corporation | TRUE | Voter |
| Stanley, Dorothy | Hewlett Packard Enterprise | TRUE | Voter |
| Startsev, Ivan | IITP | TRUE | Voter |
| Stavridis, Athanasios | Ericsson AB | TRUE | Voter |
| Stepanov, Max | Intel | TRUE | Voter |
| Stott, Noel | Keysight Technologies | TRUE | Voter |
| Strauch, Paul | Qualcomm Incorporated | TRUE | 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 | ZTE Corporation | TRUE | Voter |
| Sun, Li-Hsiang | Sony Corporation | TRUE | Voter |
| sun, sheng | Huawei Technologies Canada; Huawei Technologies Co., Ltd | TRUE | Voter |
| Sun, Yanjun | Qualcomm Incorporated | TRUE | Voter |
| Sundman, Dennis | Ericsson AB | TRUE | Voter |
| SURACI, FRANK | U.S. Department of Homeland Security | TRUE | Voter |
| Tadahal, Shivkumar | Broadcom Corporation | TRUE | Aspirant |
| Takai, Mineo | Space-Time Engineering | TRUE | Voter |
| Tan, Danny | Huawei Technologies Co., Ltd | TRUE | Voter |
| Tanaka, Yusuke | Sony Group Corporation | TRUE | Voter |
| Tettey, Daniel | Ford Otosan | FALSE | Non-Voter |
| Thakur, Sidharth | Apple Inc. | FALSE | Non-Voter |
| Thompson, Tom | IEEE Standards Association (IEEE-SA) | FALSE | Non-Voter |
| THOUMY, Francois | Canon | TRUE | Potential Voter |
| Tian, Bin | Qualcomm Incorporated | TRUE | Voter |
| Tian, Tao | Apple, Inc. | TRUE | Voter |
| Tolpin, Alexander | Intel Corporation | TRUE | Voter |
| Tomoyuki, Takada | Canon | TRUE | Voter |
| Torab Jahromi, Payam | Facebook | TRUE | Voter |
| Torrijo, Alejandro | MaxLinear Corp | TRUE | Voter |
| Trainin, Solomon | Qualcomm Incorporated | TRUE | Voter |
| TSAI, FU YU | MediaTek Inc. | TRUE | Aspirant |
| Tsai, Tsung-Han | MediaTek Inc. | TRUE | Voter |
| Tsodik, Genadiy | Huawei Technologies Co., Ltd | TRUE | Voter |
| Tsujimaru, Yuki | Canon Inc. | TRUE | Potential Voter |
| Tugtekin, Omer | VESTEL Electronics Corp. | TRUE | Aspirant |
| Turkmen, Halise | Vestel | TRUE | Voter |
| Ungan, Tolgay | endiio GmbH | TRUE | Aspirant |
| Unterhuber, Paul | German Aerospace Center (DLR) | TRUE | Voter |
| Urabe, Yoshio | Panasonic Corporation | TRUE | Voter |
| Van Nee, Richard | Qualcomm Incorporated | TRUE | Voter |
| Van Zelst, Allert | Qualcomm Incorporated | TRUE | Voter |
| Varshney, Prabodh | Nokia | TRUE | Voter |
| Venkatesan, Ganesh | Intel Corporation | TRUE | Voter |
| Verenzuela, Daniel | Sony Corporation | TRUE | Voter |
| Verma, Lochan | Apple Inc. | FALSE | Voter |
| Verma, Sindhu | Broadcom Corporation | TRUE | Voter |
| Vermani, Sameer | Qualcomm Technologies, Inc. | TRUE | Voter |
| Vicent Colonques, Santiago | Maxlinear Corp | TRUE | Voter |
| VIGER, Pascal | Canon Research Centre France | TRUE | Voter |
| Vituri, Shlomi | Intel Corporation | TRUE | Potential Voter |
| Wang, Chao Chun | MediaTek Inc. | TRUE | Voter |
| Wang, Hao | Tencent | TRUE | Voter |
| Wang, Huizhao | Quantenna Communications, Inc. | TRUE | Voter |
| Wang, Jiansong | Facebook | FALSE | Non-Voter |
| Wang, Jue | ZTE Corporation | FALSE | Aspirant |
| Wang, Lei | Futurewei Technologies | TRUE | Voter |
| Wang, Pu | Mitsubishi Electric Research Labs (MERL) | TRUE | Voter |
| Wang, Qi | Apple, Inc. | TRUE | Voter |
| Wang, Steven Qi | Huawei Technologies Co., Ltd | TRUE | Voter |
| Wang, Xiaofei | InterDigital, Inc. | TRUE | Voter |
| Wang, Yi-Hsiu | Zeku | TRUE | Voter |
| Want, Roy | Google | TRUE | Voter |
| Ward, Lisa | Rohde & Schwarz | TRUE | Voter |
| Wei, Dong | NXP Semiconductors | TRUE | Aspirant |
| Wendt, Matthias | Signify | TRUE | Voter |
| Wentink, Menzo | Qualcomm Incorporated | TRUE | Voter |
| Wilhelmsson, Leif | Ericsson AB | TRUE | Voter |
| Wu, Changqiang | TP-Link Corporation Limited | TRUE | Aspirant |
| Wu, Hao | XGIMI Technology Co.Ltd | TRUE | Potential Voter |
| Wu, Kanke | Qualcomm Incorporated | TRUE | Voter |
| Wu, Tianyu | Apple, Inc. | TRUE | Voter |
| Wu, Wayne | MediaTek Inc. | TRUE | Aspirant |
| Wullert, John | Perspecta Labs | TRUE | Voter |
| Xiao, Bo | ZTE Corporation | TRUE | Potential Voter |
| Xin, Liangxiao | Sony Corporation | TRUE | Voter |
| Xin, Yan | Huawei Technologies Co., Ltd | TRUE | Voter |
| Xu, Talia | TU Delf | FALSE | Non-Voter |
| Xue, Qi | Qualcomm Incorporated | TRUE | Voter |
| YAGHOOBI, HASSAN | Intel Corporation | TRUE | Voter |
| Yan, Aiguo | Zeku | TRUE | Voter |
| Yan, Zhongjiang | Northwestern Polytechnical University | TRUE | Voter |
| Yang, Bo | Huawei Technologies Co., Ltd | TRUE | Voter |
| Yang, Jay | Nokia | TRUE | Voter |
| Yang, Lin | Qualcomm Incorporated | TRUE | Voter |
| Yang, Mao | Northwestern Polytechnical University | TRUE | 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 |
| yaodong, zhang | ZTE Corporation | FALSE | Non-Voter |
| Yee, James | MediaTek Inc. | TRUE | Voter |
| Yee, Peter | NSA-CSD | TRUE | Voter |
| Yi, Yongjiang | Spreadtrum Communication USA Inc. | TRUE | Voter |
| Yokoyama, Takahiro | Association of Radio Industries and Businesses (ARIB) | TRUE | Potential Voter |
| Yoo, Homin | LG ELECTRONICS | TRUE | Potential Voter |
| Yoon, Jeonghwan | LG ELECTRONICS | TRUE | Potential Voter |
| Yoshikawa, Yuki | Canon | TRUE | Voter |
| Young, Christopher | Broadcom Corporation | TRUE | Voter |
| Yu, Heejung | Korea University | TRUE | Voter |
| Yu, Jian | Huawei Technologies Co., Ltd | TRUE | Voter |
| Yu, Mao | Anyka | TRUE | Voter |
| Yuan, Fangchao | Huawei Technologies Co., Ltd | TRUE | Voter |
| Zaman, Malia | IEEE Standards Association (IEEE-SA) | FALSE | Non-Voter |
| zang, Ziv | zang.jialei@zte.comcn | FALSE | Non-Voter |
| ZEGRAR, Salah Eddine | Istanbul Medipol University; Vestel | TRUE | Voter |
| Zein, Nader | NEC Europe | TRUE | Voter |
| Zeng, Yan | Huawei Technologies Co., Ltd | TRUE | Voter |
| Zhang, Hongyuan | NXP Semiconductors | TRUE | Voter |
| ZHANG, JIAYIN | Huawei Technologies Co., Ltd | TRUE | Voter |
| Zhang, Yan | NXP Semiconductors | TRUE | Voter |
| Zhang, Yuqiang | XGIMI Technology Co.Ltd | TRUE | Aspirant |
| Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | TRUE | Potential Voter |
| Zhou, Yifan | Huawei Technologies Co., Ltd | TRUE | Voter |
| Zhu, Peiying | Huawei Technologies Canada; Huawei Technologies Co., Ltd | TRUE | Potential Voter |
| Zimmerman, George | CME Consulting | FALSE | Non-Voter |
| Zuo, Xin | Tencent | FALSE | Voter |

**Annex B : Working Group Officers**

**Working Group**

|  |  |  |
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| Marc Emmelmann (Koden-TI) | TGbc ChairBroadcast Services (BCS) | marc.emmelmann@me.com |
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| 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 |
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**Liaison Officials to IEEE 802 organizations**

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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 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 | 21-1204r1 |
| TGme | TG | 21-1168r1 |
| TGaz | TG | 21-1119r0 |
| TGbb | TG | 21-1163r0 |
| TGbc | TG | 21-0962r0 |
| TGbd | TG | 21-1138r0 |
| TGbe | TG | 21-1226r0 |
| TGbf | TG | 21-1306r0 |
| TGbh | TG | 21-1174r0 |
| TGbi | TG | 21-1225r0 |
| AANI | SC | 21-1142r0 |
| COEX | SC | 21-xxxxr0 |
| WNG | SC | Did not meet |
| JTC 802 | SC | 21-xxxxr0 |
| ARC | SC | 21-xxxxr0 |
| ITU | AH | 21-1173r0 |
| PAR | SC | Did not meet |

**Annex D : Revisions and Standards Pipeline**

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**IEEE 802.11 Standards Pipeline**

End.