IEEE P802.11  
Wireless LANs

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| Minutes of the IEEE P802.11 Full Working Group | | | | |
| Date: 2021-01-11 | | | | |
| Author(s): | | | | |
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Abstract

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

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

**IEEE 802.11 Interim Meeting – Session #183**

**January 11th – 15th, 2021**

**IEEE 802.11 Opening Plenary, Monday 11th January 2021**

Presiding chair: Dorothy Stanley (Hewlett Packard Enterprise) opened the meeting at 09:02 Eastern Standard Time (EST) 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 369 voting members and 11 Ex Officio voters of IEEE 802.11\*

There were 264 people present in the meeting

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

1. **Notices** (11-20-1905r1 slide #3)
   1. No photographs at this meeting and please turn your mobiles to vibrate.
   2. Chair: Are there any members of the press present.
      1. None
   3. From the IEEE, Jonathan Goldberg is present as a member of staff.
2. **Approve/modify working group agenda** (11-20-1904r2)
   1. This is a summary of all the meetings for the week.
   2. Chair: I suggest we approve this agenda.
   3. Changes to agenda graphic:
      1. There have been a couple of small changes made since last week’s CAC.
   4. **Move to approve the agenda 11-20-1904r3**
      1. Moved: Marc Emmelmann, 2nd: Al Petrick
      2. No objection to approving by unanimous consent
3. **November 2020 WG Minutes**
   1. **Move to approve the November 2020 WG minutes document 11-20-1705r1**
   2. Moved: Stephen McCann, 2nd: Stuart Kerry
   3. Following neither discussion nor dissent the minutes were approved by unanimous consent.
4. **Attendance**
   1. Welcome to the 7 new participants in this meeting.
   2. Chair: Please note that Stephen McCann (Secretary) will be holding a new members’ session at 09:00 ET on Tuesday January 12th.
5. **Call for essential Patents** (11-20-1942r0)
   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.
   3. The slides about IEEE 802 meeting participation and IEEE SA copyright were also read.
   4. No questions
   5. The participant behavior was also announced.
   6. VC2: Please note the slide about the valid abstain response in ballots and also all members’ obligations to respond to ballots.
   7. VC2: There is also some information about the current IEEE 802.11 email reflectors (slide #22)
   8. No questions
6. **Announcements** (11-20-1905r1)
   1. **Liaisons** (slide #4)
      1. Chair: There are no liaisons for consideration this week.
   2. **EC and standard board decisions** (slides #5 & #6)
      1. Chair: The EC and Standards Board approved the following items on the slides.
      2. I would like to congratulate everyone in the WG for the December 2020 approval of P802.11REVmd D5.0. The new baseline should be published in February 2021. I would especially like to thank the WG editors for all their hard work with this document.
   3. **Awards** (slide #6)
      1. Chair: Awards will be presented to various members electronically, for each of the completed projects on the slide (11REVmd, 11ax, 11ay, 11ba). However, we still intend to hold an award ceremony at the next face to face meeting to recognize all the contributors.
7. **Logistics and Key events/activities**
   1. **Working group session documents** (11-20-1905r0 slide #8)
   2. **Joint meetings & reciprocal credit with IEEE 802 groups** (slides #9 & #10)
      1. Reminder that there are topics relevant to IEEE 802.11 to be covered in IEEE 802.18, IEEE 802.19 and some of the other IEEE 802 groups.
   3. **M3.3 Other WG meeting plans** (11-20-1941r0 slides #4 and slide #6)
      1. This slide shows information about other WG meetings, future meetings and logistics this week.
      2. Please use the online schedule at the IEEE 802 website for the online meeting times this week. It can be adjusted to show times in your own time zone.
      3. Please remember to record your attendance for each 2 hour slot during the week:

<https://imat.ieee.org/802.11/attendance-log?p=3267600005&t=47200043>

* + 1. VC1: this slide deck shows information about other WG meetings, future meetings and logistics this week.
  1. **Online Calendar** (slide #9)
     1. An IEEE 802 EC calendar is available here: <http://www.ieee802.org/802tele_calendar.html>
  2. **M3.6 Recording attendance** (slide #10)
     1. Please note the rules about recording attendance at each IEEE 802.11 meeting this week.
  3. **M3.9 Next session reminder** (slide #11)
     1. The next IEEE 802 Plenary will be from 8th March to 16th March 2021. Various IEEE 802 WG meetings will occur between these two dates.
     2. It is still being debated by the IEEE 802.11 CAC and the IEEE 802 EC, as to whether the May and July 2021 meetings will be online or face-to-face.
     3. Hopefully the September and November 2021 meetings can be face to face.
     4. No questions

1. **Status of all groups** (11-20-1905r1)
   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: There are no new changes since the last meeting, although there are some additions for TGbf.
   3. **Summary of Ballots** (slide #18)
      1. There have been several SA ballots and WG letter ballots between the November 2020 meeting and now.
   4. **Current Membership status** (slide #19)
      1. There are currently 369 IEEE 802.11 voters, and 11 ex-officio voters.
   5. **Attendance credit**
      1. This meeting does not count towards voting attendance
   6. Chair: However, if new members achieve 75% attendance during this meeting, I will allow them to post to mentor (the document server) and access to the members’ area for draft document material.
2. **Timelines**
   1. Not too many changes this time.
   2. The letter ballot and SA ballot pages have been updated.
3. **Group Summaries** (11-20-1943r2)
   1. Special notes were mentioned for the following groups:
   2. **Editors’ meeting and ANA**
      1. There is an editors’ meeting later this week, as per the online schedule. This will include the ANA status, style guides and numbering situation.
   3. **AANI Standing Committee (SC)**
      1. There are several meetings this week to work on an interworking document. The intention is to ask the WG to adopt this document at the closing plenary.
   4. **ARC SC**
      1. This group is currently discussing the TGbe multi-link architecture issues.
      2. It will also address questions such as “What is an ESS”?
      3. There is also a new item regarding EPD v LDP behavior.
   5. **Coexistence SC**
      1. They will meet once this week to discuss various IEEE 802.11 co-existence issues.
   6. **PAR SC**
      1. Not meeting this week. The next meeting will be in March 2021.
   7. **WNG**
      1. Not meeting this week, as there are no requested presentations.
   8. **JTC1**
      1. There will be a review of the current ISO/JTC1/SC6 status this week.
   9. **TGax**
      1. TGax has completed it’s balloting process and it’s work is complete. Thank you to everyone who participated in TGax. There is no business this meeting.
   10. **TGay**
       1. Balloting is now complete and therefore there is no business this week. There are two motions for the WG plenary on Friday.
       2. Thank you to everyone who participated in TGay.
   11. **TGaz**
       1. Draft 2.6 has been published since November 2020. There are 11 remaining technical comments from the previous letter ballot. The target is to re-circulate out of this week’s meeting.
   12. **TGba**
       1. The balloting is complete for this group and Draft 8.0 is on the March RevCom agenda for approval. Therefore there is no business this week.
   13. **TGbb**
       1. The PHY text is nearly complete and so work is now continuing on the MAC.
   14. **TGbc**
       1. TGbc are currently working on comment resolutions from the initial letter ballot that completed in December 2020.
   15. **TGbd**
       1. TGbd are also addressing comment resolutions from the initial letter ballot that completed in November 2020.
   16. **TGbe**
       1. Draft 0.2 is available and the group working towards D0.3. Many teleconferences have been held since the November 2020 meeting.
   17. **TGbf**
       1. This week there will be some technical submissions to consider.
   18. **RCM (Random and Changing MAC address) study group**
       1. The group will be considering submissions for the two proposed task groups TGbh and TGbi.
       2. Comment (C): The approval of the 2 new TGs will most likely be in the middle of February.
   19. **ITU ad-hoc**
       1. This group will be meeting once this week to consider document contributions with various ITU-R groups.
4. **Liaisons (IEEE 802.18 and 802.19)**
   1. **IEEE 802.18 (Regulatory)**
   2. During this 802.18 interim, there will be one meeting this week and one next week.
   3. ETSI and CEPT:6 GHz work is going through approval. Mandatory in 27 European countries this year.
   4. In other regions, India consultations, APAC update.
   5. ITU-R is looking at C\_V2X
   6. WRC 2023 will be considered for IEEE 802 items
   7. USA: 6 GHz FCC rule implementation issues
   8. 802.19: 802.18 is working with them on a table of frequency bands for all the IEEE 802 wireless standards.
   9. **IEEE 802.19 (co-existence)**
   10. Not meeting this week
   11. The 2nd SA re-circulation ballot for 802.19.3 is complete (98% no new comments), so the project will move forward for IEEE 802 EC approval.
5. **AANI Report**
   1. AANI is reaching the conclusion of a report and the objective is to adopt this report by the 802.11 WG. It covers the interworking of 5G networks and WLAN, addressing how the 802.11 standard would fit into a 5G air interface. It contains areas that could be further addressed by 802.11 to assist with 5G/WLAN interworking.
   2. No questions
6. **IEEE Staff**
   1. Jonathan Goldberg introduced himself.
   2. Chair: Jonathan helps us with IEEE logistics, assisting with ballots and the IEEE tools.
   3. Christy Bahn is also on the call.
7. **AoB**
   1. Chair: please look at the schedule graphic for this week, as shown in the agenda and the online calendar
   2. Thank you for joining and I wish you all a very fruitful year.
8. **Recess**
   1. Meeting recessed at 10:33 EST.

**Friday, 15th January 2021**

**IEEE 802.11 Closing Plenary**

Call to order at 09:00 EST by Dorothy Stanley (HPE).

210 people present in the meeting.

1. **Approve/modify working group agenda** (11-20-1904r4)
   1. Chair: There have been some minor changes to the agenda from earlier this week.
   2. **Approve the agenda for the Friday meeting as shown in 11-20-1904r5**
      1. Moved: Mark Hamilton, 2nd: Al Petrick
      2. No objection to approving by unanimous consent.
2. **Call for Essential Patents** (11-20-1906r0 slide #7)
   1. Call for Essential Patents
   2. No statements
   3. No questions
3. **Announcements** (11-20-1906r0)
   1. **Participation** (slide #4)
      1. Please can you remember to read this slide and understand that everyone is here as an individual subject matter expert.
   2. **Chair’s minutes, reports and web pages**
      1. Please can you ensure that the sub-group minutes are on the server within 30 days after the close of this meeting. Please can you also send web-page and timeline updates to the secretary.
      2. The next meeting of the IEEE 802.11 working group is in March 2021 as an online meeting.
      3. Please be aware of the chair’s committee meetings (CAC), the next one of which is on February 1st at 09:00 ET.
   3. **Letters of Assurance (LoA)** (slide #11)
      1. Chair: please remember about the LoA requirements.
      2. There has been a recent change to the LoA document to add some new IEEE disclaimer statements. There are no other content updates to the document.
   4. **IEEE Store and ISO SC6** (slides #12 and #13)
      1. No questions
   5. **Press Releases** (slide #14)
      1. Thank you to everyone for contributing to the TGbf blog and press release.
      2. No questions
   6. **Public Visibility Standing Committee** (slide #16)
      1. This new group is to boost the visibility of IEEE 802.
      2. No questions
4. **Treasury Report** (ec-20-0252-00)
   1. VC1: This show the treasurers’ report and is correct up to 31st December 2020:
   2. <https://mentor.ieee.org/802-ec/dcn/20/ec-20-0252-00-WCSG-wireless-treasurer-report-jan-2021-electronic-interim.pptx>
   3. A new version correcting some editorial typos will be uploaded.
   4. Question (Q): Were there any cancellation fees in 2020?
   5. Answer (A): No, we have been able to negotiate out of all cancellation fees, as many of the 2020 venues are being re-used in the future.
5. **Upcoming Venues** (11-20-1374r1 slides #14)
   1. **Straw Poll**
   2. **When do you expect the next in person 802.11 Session will be?**
   3. **A. May 2021 - 5**
   4. **B. July 2021 - 16**
   5. **C. Sept 2021 - 38**
   6. **D. Nov 2021 - 38**
   7. **E. After 2021 - 46**
   8. **No Answer - 22**
   9. VC1: This slide shows the next plenary in March 2021.
   10. Regarding the March 2021, please note the dates have changed and IEEE 802.11 will now meeting from March 8 - 16th 2021.
   11. Only when there are a sufficient number of people who can and are allowed to travel will the face-to-face meetings re-start.
   12. The IEEE 802 wireless chairs’ meeting to decide whether the May 2021 interim is online or face-to-face is on February 3rd 2021.
   13. C: I would like to thank Jon and Face to Face for all their help with the re-arrangements for the future venues.
   14. No questions
6. **Timelines**
   1. There are changes to the TGaz and TGbd timelines this week. The timeline chart will be updated over the weekend.
7. **Documentation & Attendance** (11-20-1944r0 slide #8)
   1. VC2: This session report is a summary of sub-group activities this week. It includes the attendance statistics for this week.
8. **WG Committee Reports** (11-20-1944r0)
   1. **Editors’** (slide #11)
   2. No questions
   3. **AANI** (slide #18)
   4. Q: How accurate is the content of the document. Some comments, from the comment collection, stated that there are inaccuracies, but those comments appear to have been rejected.
   5. A: The last 5 comments did state that there were issues with the report, but these comments were not specific. As there were no forthcoming text updates, the report was not modified. There were several AANI SC meetings that waited for updates, but nothing appeared.
   6. No questions
   7. **ARC** (slide #26)
   8. The teleconference dates are not accurate on slide #28. The correct teleconference dates are on slide #30.
   9. No questions
   10. **Coex** (slide #32)
   11. No questions
   12. **JTC1** (slide #35)
   13. No questions
   14. **TGmd** (slide #38)
   15. This project is now complete and many thanks to everyone who worked on the revision.
   16. No questions
   17. **TGax** (slide #39)
   18. This project is now complete and many thanks to everyone who worked on the amendment.
   19. No questions
   20. **TGay** (slide #40)
   21. This 802.11 project is now complete and RevCom will consider the final draft. Many thanks to everyone who worked on the amendment.
   22. No questions
   23. **TGba** (slide #40)
   24. This 802.11 project is now complete and RevCom will consider the final draft. Many thanks to everyone who worked on the amendment.
   25. VC2: I would like to thank everyone in those 4 groups and note the fact that their timelines have been met in 2020.
   26. **TGaz** (slide #43)
   27. The group finished its comment resolution and will request a D3.0 re-circulation ballot later in this meeting.
   28. No questions
   29. **TGbb** (slide #48)
   30. The group completed many comment resolutions this week.
   31. No questions
   32. **TGbc** (slide #52)
   33. The group completed many comment resolutions this week and have produced a 11bc D1.01 draft.
   34. No questions
   35. **TGbd** (slide #57)
   36. No questions
   37. **TGbe** (slide #62)
   38. No questions
   39. **TGbf** (slide #65)
   40. No questions
   41. **RCM** (slide #70)
   42. No questions
   43. **ITU** (slide #71)
   44. No questions
9. **Liaison Reports** (11-20-1944r0)
   1. **Wi-Fi Alliance**
      1. There is no update since Monday
      2. 6 GHz certification for 11ax has been launched
      3. Chair: Thanks to everyone in the WFA for their work on the 6 GHz certification program.
      4. No questions
   2. **IETF** (slide #75)
   3. Q: What is happening with TLS 1.3?
   4. A: There is a specification going through at the moment, so the RFC can be used at this time. There is a TLS 1.3bis, which is just some editorial updates.
   5. Q: What about the randomized MAC Address topic?
   6. A: I don’t know. I’ll have a look and reply to everyone
   7. Chair: There was a non-working group forming Birds of a Feather (BoF) meeting. There should be an update on this group in February 2021.
   8. **IEEE 1609**
      1. The group has not met since November 2020.
      2. They have been informed about the outcome of the 802.11bd letter ballot results.
      3. They are awaiting the publication of 1609.3 standard and there will be an update of the 1609.2 standard.
      4. No questions
10. **Working Group Motions (Old Business)** (11-20-1952r1)
    1. **AANI Report** (slide #4)
       1. **Move to approve 11-20/0013r10 the “Draft technical report on interworking between 3GPP 5G network & WLAN”, with editorial privileges given to the WG Chair.**
       2. **[AANI similar motion result: Result: Y:20 N:0 A:8 DNV:8]**
       3. Moved: Joseph Levy on behalf of AANI SC, 2nd: Rui Yang
       4. C: I speak in favor of this report, as the group have worked very hard to finalize it.
       5. C: I have some technical concerns about the report and I think there is lack of clarity regarding the 5G –WLAN interworking. The 5G Rel 15/16 interworking information is not clear. It would be useful to know what the gaps are for future consideration. Unfortunately in AANI, there was no conclusion about how to resolve these technical issues. Therefore, it’s not regarded as a good report and in addition, there are only a few people who participate in AANI. I speak against this motion.
       6. Chair: Please note that one should speak as an individual, not representing groups of people.
       7. C: I think the previous comment should be listened to and so I also speak against the motion.
       8. Joseph: AANI has been open to everyone and followed the process. There have been many meetings to work on this report. The comment from the original author to reset the document to a new baseline was rejected. However, there was then a comment collection and several update have been made to increase the quality of the report. I believe that corrections have been work on and rectified. Within AANI, it’s not possible to resolve comments without contributions.
       9. C: If there are serious objections, why have those members not been attending the AANI? Should they have voted “No” at an earlier stage?
       10. C: Within AANI, I did contribute an alternative report and stating that this new report could be merged with the original. However, the AANI group rejected this possibility.
       11. Q: On the slide, the “No” count is 0, so what does that mean?
       12. A: I voted No on another earlier motion.
       13. C: I’m not an expert in this area. The original report was produced over a year ago and it has been worked on since then. The alternative report has only been available recently. Basically one report is from a 3GPP perspective and the other one is a WLAN perspective. AANI did ask the question “can you merge the 2 reports” and the answer was no. I think this report is reasonable and meets the objective of the AANI report. I support the motion.
       14. For: 39, Against: 22, Abstain: 34 (Motion fails)
    2. **TGax minutes** (slide #5)
       1. **Move to approve the minutes for November 13 2020 teleconference in doc: https://mentor.ieee.org/802.11/dcn/20/11-20-1854-00-00ax-tgax-crc-teleconference-minutes-november-2020.docx.**
       2. Moved: Osama Aboul-Magd, 2nd: Yasu Inoue
       3. No objection to approving by unanimous consent
    3. **Liaise IEEE 802.11ay/D7.0 to SC6** (slide #6)
       1. **The IEEE 802.11 WG requests that IEEE 802 EC liaise Draft P802.11ay/D7.0 to ISO/IEC JTC1 SC6 for information.**
       2. Moved: Edward Au, 2nd: Claudio da Silva
       3. For: 83, Against: 1, Abstain: 4 (Motion passes)
    4. **TGay minutes** (slide #7)
       1. **Approve the TGay minutes in https://mentor.ieee.org/802.11/dcn/20/11-20-1979-00-00ay-task-groupAspiranty-december-21-2020-teleconference-minutes.docx.**
       2. Moved: Edward Au, 2nd: Sang Kim
       3. No objection to approving by unanimous consent
    5. **TGaz re-circulation letter ballot** (slide #8)
       1. **Having approved comment resolutions for all of the comments received from LB249 on P802.11az D2.0 as contained in document 11-20-017r11,**
       2. **• Instruct the editor to prepare P802.11az D3.0 incorporating these resolutions and,**
       3. **• Approve a 15 day Working Group Recirculation Ballot asking the question “Should P802.11az D3.0 be forwarded to Sponsor Ballot?”**
       4. **[TGaz: Results (Y/N/A): 20/0/0]**
       5. Moved: Jonathan Segev on behalf of TGaz
       6. Q: When is the re-circulation expected to start?
       7. A: In about 10 days time.
       8. No objection to approving by unanimous consent
    6. **Liaise IEEE 802.11ba/D8.0 to SC6** (slide #9)
       1. **The IEEE 802.11 WG requests that IEEE 802 EC liaise Draft P802.11ba/D8.0 to ISO/IEC JTC1 SC6 for information.**
       2. Moved: Minyoung Park, 2nd: Po-Kai Huang
       3. No objection to approving by unanimous consent
       4. For: 82, Against: 1, Abstain: 5 (Motion passes)
    7. **TGba minutes** (slide #10)
       1. **Approve the following TGba minutes:**
       2. **https://mentor.ieee.org/802.11/dcn/21/11-21-0029-00-00ba-802-11ba-teleconference-minutes-january-2021.docx**
       3. **https://mentor.ieee.org/802.11/dcn/20/11-20-1779-00-00ba-meeting-minutes-november-2020.docx**
       4. Moved: Minyoung Park, 2nd: Stephen Palm
       5. No objection to approving by unanimous consent
    8. **RCM SG minutes** (slide #11)
       1. **Approve the following RCM SG minutes:**
       2. **https://mentor.ieee.org/802.11/dcn/20/11-20-1788-01-0rcm-minutes-rcm-sg-4-november-2020.doc.**
       3. Moved: Carol Ansley, 2nd: Joseph Levy
       4. No objection to approving by unanimous consent
11. **RCM SG transition** (11-20-1906r0 slide #17)
    1. This slide explains the next steps for the start of the TGbh and TGbi groups.
    2. There is a call for candidates that is still open.
    3. It is hoped that the TGs still start work at the March 2021 meeting.
    4. No questions.
12. **Wireless Chairs Meeting** (11-20-1906r0 slide #18)
    1. Please note that this meeting will be on February 3rd 2021 and everyone is welcome to attend.
13. **Next Meeting** (11-20-1226r0 slide #19)
    1. The dates of the IEEE 802.11 March 2021 plenary meeting are Monday March 8th to Tuesday March 16th.
14. **AoB**
    1. None
15. **Adjournment**
    1. Chair: Thank you to everyone for joining the meeting this week.
    2. Having completed the agenda, the chair announced that the meeting was adjourned at 10:54 EST.

**Annex A: Attendance & Affiliation**

| **Name** | **Affiliation** | **Sessions attended** | **Voting Status** |
| --- | --- | --- | --- |
| Abdelaal, Rana | Broadcom Corporation | 2 | Voter |
| AbidRabbu, Shaima' | Istanbul Medipol University; Vestel | 1 | Potential Voter |
| Abouelseoud, Mohamed | Sony Corporation | 5 | Aspirant |
| Aboulmagd, Osama | Huawei Technologies Co., Ltd | 10 | Voter |
| Abushattal, Abdelrahman | Istanbul Medipol University; Vestel | 3 | Potential Voter |
| Adachi, Tomoko | TOSHIBA Corporation | 8 | Voter |
| Adhikari, Shubhodeep | Broadcom Corporation | 3 | Voter |
| Agrawal, abhishek | Facebook | 2 | Voter |
| Agrawal, Sandeep | C-DOT/Centre for Development of Telematics | 4 | Voter |
| Ahn, Woojin | WILUS | 1 | Voter |
| Aio, Kosuke | Sony Corporation | 4 | Voter |
| Akhmetov, Dmitry | Intel Corporation | 4 | Voter |
| Al Falujah, Iyad | ON Semiconductor | 1 | Non Voter |
| Aldana, Carlos | Facebook | 12 | Aspirant |
| Alkhrijah, Yazeed | Southern Methodist University | 2 | Non Voter |
| An, Song-Haur | INDEPENDENT | 13 | Voter |
| Andersdotter, Amelia | None - Self-funded | 5 | Voter |
| Ansley, Carol | IEEE member / Self Employed | 15 | Voter |
| Anwyl, Gary | MediaTek Inc. | 8 | Potential Voter |
| Asterjadhi, Alfred | Qualcomm Incorporated | 7 | Voter |
| Au, Kwok Shum | Huawei Technologies Co., Ltd | 15 | Voter |
| Au, Oscar | Origin Wireless | 1 | Voter |
| Avital, Ziv | MaxLinear | 1 | Aspirant |
| Awater, Geert | Qualcomm Incorporated | 4 | Voter |
| Aygul, Mehmet | Istanbul Medipol University; Vestel | 5 | Potential Voter |
| B, Hari Ram | NXP Semiconductors | 8 | Potential Voter |
| Baek, SunHee | LG ELECTRONICS | 5 | Potential Voter |
| Bahn, Christy | IEEE STAFF | 5 | Non Voter |
| Baik, Eugene | Qualcomm Incorporated | 7 | Voter |
| Bajko, Gabor | MediaTek Inc. | 10 | Voter |
| Banerjea, Raja | Qualcomm Incorporated | 12 | Potential Voter |
| Bankov, Dmitry | IITP RAS | 4 | Potential Voter |
| baron, stephane | Canon Research Centre France | 5 | Voter |
| Batra, Anuj | Apple, Inc. | 8 | Voter |
| Baykas, Tuncer | Istanbul Medipol University, Hyperion Technologies | 4 | Voter |
| BECHADERGUE, Bastien | OLEDCOMM | 4 | Voter |
| Beg, Chris | Cognitive Systems Corp. | 6 | Potential Voter |
| Bei, Jianwei | NXP Semiconductors | 4 | Voter |
| Berens, Friedbert | FBConsulting Sarl | 2 | Voter |
| Berger, Christian | NXP Semiconductors | 4 | Voter |
| Berkema, Alan | HP Inc. | 16 | Voter |
| Berner, Stephan | PureLiFi | 9 | Potential Voter |
| Bhandaru, Nehru | Broadcom Corporation | 8 | Voter |
| Bims, Harry | Bims Laboratories, Inc. | 11 | Voter |
| Bluschke, Andreas | Signify | 5 | Potential Voter |
| Bober, Lennert | Fraunhofer Heinrich Hertz Institute | 7 | Voter |
| Boldy, David | Broadcom Corporation | 9 | Voter |
| Bravo, Daniel | Intel Corporation | 4 | Aspirant |
| Bredewoud, Albert | Broadcom Corporation | 11 | Voter |
| Cao, Rui | NXP Semiconductors | 7 | Voter |
| Cariou, Laurent | Intel Corporation | 4 | Voter |
| Carney, William | Sony Corporation | 10 | Voter |
| Cavalcanti, Dave | Intel Corporation | 3 | Voter |
| Cepni, Gurkan | Apple, Inc. | 9 | Voter |
| CHAN, YEE | Facebook | 5 | Potential Voter |
| Chayat, Naftali | Vayyar Imaging | 6 | Aspirant |
| Chen, Chaoliang | iComm Semiconductor | 13 | Non Voter |
| Chen, Cheng | Intel Corporation | 5 | Voter |
| Chen, Cheng-Ming | Qualcomm Incorporated | 8 | Potential Voter |
| Chen, Evelyn | Ericsson AB | 1 | Voter |
| chen, jindou | Huawei Technologies Co. Ltd | 1 | Aspirant |
| Chen, Na | MaxLinear Corp | 1 | Voter |
| Chen, Xiaogang | Intel Corporation | 1 | Voter |
| Cheng, Gang | Nokia | 1 | Non Voter |
| Cheng, Paul | MediaTek Inc. | 6 | Voter |
| CHERIAN, GEORGE | Qualcomm Incorporated | 2 | Voter |
| Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. | 5 | Voter |
| Cho, Hanbyeog | ETRI | 2 | Non Voter |
| cho, shinho | allradio | 1 | Non Voter |
| Choi, Jinsoo | LG ELECTRONICS | 6 | Voter |
| Choo, Seungho | Senscomm Semiconductor Co., Ltd. | 5 | Potential Voter |
| Chu, Liwen | NXP Semiconductors | 12 | Voter |
| CHUN, JINYOUNG | LG ELECTRONICS | 3 | Potential Voter |
| Chung, Chulho | SAMSUNG | 8 | Potential Voter |
| Ciochina, Dana | Sony Corporation | 2 | Voter |
| Coffey, John | Realtek Semiconductor Corp. | 12 | Voter |
| Cordeiro, Carlos | Intel Corporation | 3 | Voter |
| Costa, D.Nelson | Peraso Technologies Incorporated | 2 | Voter |
| da Silva, Claudio | Intel Corporation | 7 | Voter |
| Das, Dibakar | Intel | 7 | Voter |
| Das, Subir | Perspecta Labs Inc | 10 | ExOfficio |
| Davies, Robert | Signify | 6 | Potential Voter |
| de Vegt, Rolf | Qualcomm Incorporated | 11 | Voter |
| DeLaOlivaDelgado, Antonio | InterDigital, Inc. | 8 | Voter |
| Delaunay, Nicolas | EASII-IC | 3 | Non Voter |
| Derham, Thomas | Broadcom Corporation | 13 | Voter |
| Ding, Baokun | Huawei Technologies Co., Ltd | 4 | Potential Voter |
| Ding, Yanyi | Panasonic corporation | 4 | Voter |
| DOAN, DUNG | Qualcomm Incorporated | 6 | Potential Voter |
| Dogukan, Ali | Vestel | 12 | Aspirant |
| Dong, Xiandong | Xiaomi Inc. | 7 | Voter |
| Du, Rui | Huawei Technologies Co., Ltd | 3 | Voter |
| Duan, Ruchen | SAMSUNG | 4 | Voter |
| Dutta, Ashutosh | JHU/APL | 1 | Non Voter |
| Ecclesine, Peter | Cisco Systems, Inc. | 7 | Voter |
| Edelmayer, Andras | Commsignia | 4 | Non Voter |
| Eitan, Alecsander | Qualcomm Incorporated | 3 | Voter |
| ElSherif, Ahmed | Qualcomm Incorporated | 2 | Voter |
| EMMELMANN, MARC | Self Employed / Koden-TI / Fraunhofer FOKUS | 10 | Voter |
| Erceg, Vinko | Broadcom Corporation | 8 | Voter |
| Erell, Assaf | Vayyar Imaging Ltd. | 3 | Aspirant |
| Fang, Juan | Intel Corporation | 7 | Aspirant |
| Fang, Yonggang | Self | 12 | Voter |
| feng, Shuling | MediaTek Inc. | 9 | Potential Voter |
| Fischer, Matthew | Broadcom Corporation | 5 | Voter |
| Fridman, Roi | Vayyar Imaging Ltd | 3 | Aspirant |
| Gao, Zhigang | Cisco Systems, Inc. | 3 | Aspirant |
| Garg, Lalit | Broadcom Corporation | 4 | Voter |
| Garringer, James | Apple, Inc. | 13 | Non Voter |
| Ghaderipoor, Alireza | MediaTek Inc. | 12 | Aspirant |
| Gidvani, Ravi | SAMSUNG | 4 | Aspirant |
| Godfrey, Tim | Electric Power Research Institute, Inc. (EPRI) | 2 | ExOfficio |
| Goldberg, Jonathan | IEEE STAFF | 4 | Non Voter |
| Gong, Bo | Huawei Technologies Co. Ltd | 3 | Aspirant |
| Goto, Fumihide | DENSO | 2 | Voter |
| Grandhe, Niranjan | NXP Semiconductors | 4 | Voter |
| Grigat, Michael | Deutsche Telekom AG | 5 | Voter |
| Gu, Xiangxin | UNISOC | 15 | Non Voter |
| GUIGNARD, Romain | Canon Research Centre France | 4 | Potential Voter |
| Guo, Yuchen | Huawei Technologies Co., Ltd | 2 | Voter |
| Gupta, Binita | Intel Corporation | 1 | Non Voter |
| Haasz, Jodi | IEEE Standards Association (IEEE-SA) | 9 | Non Voter |
| Haider, Muhammad Kumail | Facebook | 2 | Potential Voter |
| Hamilton, Mark | Ruckus/CommScope | 12 | Voter |
| Han, Jonghun | SAMSUNG | 7 | Voter |
| han, oh | 101 Consulting Corporation | 1 | Non Voter |
| HAN, Xiao | Huawei Technologies Co., Ltd | 5 | Voter |
| Han, Zhiqiang | ZTE Corporation | 10 | Potential Voter |
| Handte, Thomas | Sony Corporation | 5 | Voter |
| Harkins, Daniel | Aruba Networks, Inc. | 7 | Voter |
| Harrison, Edward | Anritsu Company | 12 | Voter |
| Hart, Brian | Cisco Systems, Inc. | 6 | Voter |
| Haskou, Abdullah | InterDigital, Inc. | 3 | Potential Voter |
| Hawkes, Philip | Qualcomm Incorporated | 1 | Non Voter |
| Henry, Jerome | Cisco Systems, Inc. | 8 | Voter |
| Hernandez, Marco | National Institute of Information and Communications Technology (NICT) | 1 | Non Voter |
| Hervieu, Lili | Cable Television Laboratories Inc. (CableLabs) | 7 | Voter |
| Hiertz, Guido | Ericsson GmbH | 5 | Voter |
| Hirata, Ryuichi | Sony Corporation | 1 | Voter |
| Ho, Duncan | Qualcomm Incorporated | 8 | Voter |
| Hoffman, Damian | Vayyar Imaging | 1 | Aspirant |
| Holcomb, Jay | Itron Inc. | 2 | ExOfficio |
| Holland, Oliver | Advanced Wireless Technology Group, Ltd. | 5 | Voter |
| Hong, Hanseul | WILUS Inc. | 6 | Voter |
| Hsieh, Hung-Tao | MediaTek Inc. | 4 | Voter |
| Hsu, Chien-Fang | MediaTek Inc. | 2 | Voter |
| Hu, Chunyu | Facebook | 7 | Voter |
| Huang, Guogang | HUAWEI | 2 | Voter |
| Huang, Lei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | 4 | Voter |
| Huang, Po-Kai | Intel Corporation | 8 | Voter |
| Hurtarte, Jeorge | Teradyne, Inc. | 3 | Voter |
| Ikegami, Tetsushi | Meiji University | 2 | Voter |
| Inohiza, Hirohiko | Canon | 3 | Potential Voter |
| Inoue, Yasuhiko | Nippon Telegraph and Telephone Corporation (NTT) | 8 | Voter |
| Jamalabdollahi, Mohsen | Cisco Systems, Inc. | 3 | Non Voter |
| Jang, Insun | LG ELECTRONICS | 5 | Voter |
| Jeffries, Timothy | Huawei R&D USA | 9 | Voter |
| Jeon, Eunsung | SAMSUNG ELECTRONICS | 8 | Potential Voter |
| jiang, feng | Apple, Inc. | 3 | Voter |
| Jiang, Jinjing | Apple, Inc. | 3 | Voter |
| jiang, yiming | Nokia | 3 | Non Voter |
| Joh, Hanjin | KT Corp. | 6 | Non Voter |
| Jones, Allan | Activision | 10 | Voter |
| JONES, JEFFRUM | Qorvo | 5 | Voter |
| Jones, Vincent Knowles IV | Qualcomm Incorporated | 6 | Voter |
| Jung, hyojin | Hyundai Motor Company | 4 | Voter |
| Jungnickel, Volker | Fraunhofer Heinrich Hertz Institute | 5 | Voter |
| Kadampot, Ishaque Ashar | Qualcomm Incorporated | 3 | Potential Voter |
| Kain, Carl | Noblis, Inc. | 12 | Voter |
| Kakani, Naveen | Qualcomm Incorporated | 5 | Voter |
| kamath, Manoj | Broadcom Corporation | 5 | Aspirant |
| Kamel, Mahmoud | InterDigital, Inc. | 5 | Potential Voter |
| Kandala, Srinivas | SAMSUNG | 4 | Voter |
| Kang, Sugbong | Apple, Inc. | 1 | Aspirant |
| Kasher, Assaf | Qualcomm Incorporated | 9 | Voter |
| Kedem, Oren | Huawei Technologies Co., Ltd | 10 | Aspirant |
| Kenney, John | TOYOTA InfoTechnology Center U.S.A. | 4 | Voter |
| Kerry, Stuart | OK-Brit; Self | 9 | Voter |
| Khan, Naseem | Leidos Engineering. LLC | 4 | Voter |
| Khorov, Evgeny | IITP RAS | 6 | Voter |
| Kim, Jeong Gon | Korea Polytechnic University (KPU) | 1 | Aspirant |
| Kim, Jeongki | LG ELECTRONICS | 5 | Voter |
| Kim, Myeong-Jin | SAMSUNG | 4 | Voter |
| kim, namyeong | LG ELECTRONICS | 5 | Potential Voter |
| Kim, Sang Gook | LG ELECTRONICS | 10 | Voter |
| Kim, Sanghyun | WILUS Inc. | 4 | Voter |
| Kim, Yongho | Korea National University of Transportation | 7 | Voter |
| Kim, Youhan | Qualcomm Incorporated | 14 | Voter |
| KIM, Youngjae | Telecommunications Technology Association (TTA) | 2 | Aspirant |
| Kim, Youn-Kwan | Sync Techno | 13 | Voter |
| Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) | 6 | Voter |
| Kitazawa, Shoichi | Muroran IT | 7 | Potential Voter |
| Klein, Arik | Huawei Technologies Co., Ltd | 4 | Voter |
| Klimakov, Andrey | Huawei Technologies Co., Ltd | 9 | Potential Voter |
| Kneckt, Jarkko | Apple, Inc. | 3 | Voter |
| Ko, Geonjung | WILUS Institute | 4 | Voter |
| Kondo, Yoshihisa | Advanced Telecommunications Research Institute International (ATR) | 1 | Voter |
| Krieger, Ann | US Department of Defense | 5 | Non Voter |
| Kumar, Manish | Marvell Semiconductor, Inc. | 3 | Voter |
| Kureev, Aleksey | IITP RAS | 1 | Potential Voter |
| kwak, dongyong | Electronics and Telecommunications Research Institute (ETRI) | 1 | Non Voter |
| Kwon, Young Hoon | NXP Semiconductors | 4 | Voter |
| Lalam, Massinissa | SAGEMCOM SAS | 12 | Voter |
| Lan, Zhou | Broadcom Corporation | 10 | Voter |
| Lansford, James | Qualcomm Incorporated | 9 | Voter |
| Lee, Hyeong Ho | Netvision Telecom Inc. | 4 | Voter |
| Lee, Il-Gu | Sungshin University | 17 | Aspirant |
| Lee, Jae Seung | ETRI | 3 | Voter |
| Lee, Nancy | Signify | 8 | Potential Voter |
| Lee, Wookbong | SAMSUNG | 3 | Voter |
| Levitsky, Ilya | IITP RAS | 5 | Voter |
| Levy, Joseph | InterDigital, Inc. | 15 | Voter |
| Li, Guoqing | Facebook | 6 | Voter |
| Li, Jialing | Qualcomm Incorporated | 3 | Potential Voter |
| Li, Qinghua | Intel Corporation | 5 | Voter |
| Li, Yiqing | Huawei Technologies Co. Ltd | 4 | Voter |
| Li, Yunbo | Huawei Technologies Co., Ltd | 3 | Voter |
| Lim, Dong Guk | LG ELECTRONICS | 7 | Voter |
| Lin, Wei | Huawei Technologies Co. Ltd | 1 | Voter |
| Lindskog, Erik | SAMSUNG | 7 | Voter |
| Liu, Der-Zheng | Realtek Semiconductor Corp. | 7 | Voter |
| Liu, Jeff | Broadcom Corporation | 2 | Voter |
| Liu, Jianhan | MediaTek Inc. | 6 | Voter |
| Liu, Yong | Apple, Inc. | 5 | Voter |
| Loginov, Vyacheslav | IITP RAS | 7 | Potential Voter |
| Lopez, Miguel | Ericsson AB | 11 | Voter |
| Lorgeoux, Mikael | Canon Research Centre France | 4 | Aspirant |
| Lou, Hanqing | InterDigital, Inc. | 12 | Potential Voter |
| Lou, Hui-Ling | NXP Semiconductors | 5 | Voter |
| Lu, kaiying | MediaTek Inc. | 12 | Voter |
| Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | 4 | Voter |
| Lumbatis, Kurt | CommScope, Inc. | 9 | Non Voter |
| Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. | 2 | Potential Voter |
| Luu, David | Juniper Networks, Inc. | 2 | Non Voter |
| Lv, Lily | Huawei Technologies Co. Ltd | 1 | Voter |
| Ma, Li | MediaTek Inc. | 8 | Potential Voter |
| Ma, Mengyao | HUAWEI | 2 | Voter |
| Malinen, Jouni | Qualcomm Incorporated | 11 | Voter |
| Mano, Hiroshi | Koden Techno Info K.K. | 4 | Voter |
| Marks, Roger | EthAirNet Associates | 1 | ExOfficio |
| Martinez Vazquez, Marcos | MaxLinear Corp | 1 | Potential Voter |
| Max, Sebastian | Ericsson AB | 7 | Voter |
| McCann, Stephen | Huawei Technologies Co., Ltd | 12 | Voter |
| McGuire, Colin | The MathWorks, Inc. | 1 | Non Voter |
| Mehrnoush, Morteza | Facebook | 5 | Potential Voter |
| MELZER, Ezer | Toga Networks, a Huawei company | 1 | Voter |
| Memisoglu, Ebubekir | Istanbul Medipol University; Vestel | 6 | Potential Voter |
| Merlin, Simone | Qualcomm Incorporated | 2 | Voter |
| Minotani, Jun | Panasonic Corporation | 1 | Voter |
| Mirfakhraei, Khashayar | Cisco Systems, Inc. | 8 | Voter |
| Mohanty, Bibhu | Qualcomm Incorporated | 5 | Voter |
| Monajemi, Pooya | Cisco Systems, Inc. | 3 | Voter |
| Montemurro, Michael | Huawei Technologies Co. Ltd | 14 | Voter |
| Montreuil, Leo | Broadcom Corporation | 8 | Potential Voter |
| Moon, Juseong | Korea National University of Transportation | 6 | Aspirant |
| Morioka, Hitoshi | Koden Techno Info K.K. | 7 | Voter |
| Motozuka, Hiroyuki | Panasonic Corporation | 7 | Voter |
| Mueller, Robert | Technische Universitaet Ilmenau | 2 | Voter |
| Murti, Wisnu | SeoulTech | 5 | Voter |
| Nakano, Hiroki | CAHI Corporation; Kyoto University | 2 | Potential Voter |
| Nakano, Takayuki | Panasonic Corporation | 1 | Aspirant |
| Nam, Junyoung | Qualcomm Incorporated | 6 | Potential Voter |
| NANDAGOPALAN, SAI SHANKAR | Cypress Semiconductor Corporation | 13 | Voter |
| Naribole, Sharan | SAMSUNG | 1 | Voter |
| Nezou, Patrice | Canon Research Centre France | 4 | Voter |
| Ng, Boon Loong | Samsung Research America | 14 | Non Voter |
| Nguyen, An | U.S. Department of Homeland Security | 8 | Voter |
| Nikolich, Paul | self employed/various | 1 | ExOfficio |
| noh, yujin | Newracom Inc. | 6 | Voter |
| Oh, Hyun Seo | Electronics and Telecommunications Research Institute (ETRI) | 6 | Voter |
| Orlovsky, Michael | Vayyar Imaging LTD. | 2 | Aspirant |
| Orr, Stephen | Cisco Systems, Inc. | 1 | Aspirant |
| Ouchi, Masatomo | Canon | 2 | Potential Voter |
| Oyama, Satoshi | Association of Radio Industries and Businesses (ARIB) | 8 | Potential Voter |
| Ozbakis, Basak | VESTEL Electronics Corp. | 6 | Potential Voter |
| OZDEN ZENGIN, OZLEM | VESTEL | 5 | Aspirant |
| Ozpoyraz, Burak | Vestel | 2 | Non Voter |
| Palayur, Saju | Maxlinear Inc. | 9 | Aspirant |
| Palm, Stephen | Broadcom Corporation | 8 | Voter |
| Palmer, Clark | Meteorcomm | 1 | Non Voter |
| Pare, Thomas | MediaTek Inc. | 12 | Voter |
| Park, Eunsung | LG ELECTRONICS | 6 | Voter |
| Park, Minyoung | Intel | 5 | Voter |
| Patil, Abhishek | Qualcomm Incorporated | 7 | Voter |
| Patkar, Raghavendra | NI (National Instruments Corporation) | 16 | Non Voter |
| Patwardhan, Gaurav | Hewlett Packard Enterprise | 8 | Voter |
| Perahia, Eldad | Hewlett Packard Enterprise | 1 | Potential Voter |
| PESIN, ANTHONY | InterDigital, Inc. | 3 | Potential Voter |
| Petrick, Albert | Jones-Petrick and Associates, LLC. | 14 | Voter |
| Petry, Brian | Broadcom Corporation | 5 | Voter |
| Pettersson, Charlie | Ericsson AB | 8 | Voter |
| Pirhonen, Riku | NXP Semiconductors | 1 | Potential Voter |
| porat, ron | Broadcom Corporation | 2 | Voter |
| Puducheri, Srinath | Broadcom Corporation | 4 | Voter |
| Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. | 3 | Potential Voter |
| Qi, Emily | Intel Corporation | 10 | Voter |
| Rafique, Saira | Istanbul Medipol University, Vestel | 3 | Potential Voter |
| Rai, Kapil | Qualcomm Incorporated | 8 | Potential Voter |
| Raissinia, Alireza | Qualcomm Incorporated | 9 | Voter |
| Randall, Karen | Tallac/Self | 1 | Non Voter |
| Rantala, Enrico-Henrik | Nokia | 8 | Voter |
| Redlich, Oded | Huawei Technologies Co., Ltd | 3 | Voter |
| Reshef, Ehud | Intel Corporation | 3 | Aspirant |
| Rezk, Meriam | Qualcomm Incorporated | 8 | Potential Voter |
| Riegel, Maximilian | Nokia | 10 | Voter |
| RISON, Mark | Samsung Cambridge Solution Centre | 11 | Voter |
| Rolfe, Benjamin | Blind Creek Associates | 13 | Aspirant |
| Rosdahl, Jon | Qualcomm Technologies, Inc. | 19 | Voter |
| Rottela, Sri Varsha | Qualcomm Incorporated | 5 | Non Voter |
| Roy, Sayak | NXP Semiconductors | 1 | Potential Voter |
| Sadeghi, Bahareh | Intel Corporation | 5 | Voter |
| Sahin, Onur | InterDigital, Inc. | 3 | Non Voter |
| Sakamoto, Takenori | Panasonic Corporation | 7 | Voter |
| Salman, Hanadi | Istanbul Medipol University; VESTEL | 3 | Potential Voter |
| Sambasivan, Sam | AT&T | 10 | Voter |
| Sand, Stephan | German Aerospace Center (DLR) | 8 | Voter |
| Sandhu, Shivraj | Qualcomm Incorporated | 12 | Potential Voter |
| Sato, Naotaka | Sony Corporation | 2 | Voter |
| Schelstraete, Sigurd | ON Semiconductor | 3 | Voter |
| Schiessl, Sebastian | Self | 7 | Voter |
| Sedin, Jonas | Ericsson AB | 7 | Voter |
| Segev, Jonathan | Intel Corporation | 10 | Voter |
| Seok, Yongho | MediaTek Inc. | 2 | Voter |
| Serafimovski, Nikola | pureLiFi | 10 | Voter |
| Sethi, Ankit | NXP Semiconductors | 3 | Potential Voter |
| Sevin, Julien | Canon Research Centre France | 2 | Potential Voter |
| Shah, Kunal | Itron Inc. | 9 | Voter |
| Shellhammer, Stephen | Qualcomm Incorporated | 6 | ExOfficio |
| Shen, Xiaoman | Huawei Technologies Co., Ltd | 1 | Aspirant |
| Sherlock, Ian | Texas Instruments Incorporated | 19 | Voter |
| Shilo, Shimi | Huawei Technologies Co., Ltd | 3 | Voter |
| Shor, Gadi | Intel Corporation | 1 | Aspirant |
| Smely, Di Dieter | Kapsch TrafficCom AG | 15 | Aspirant |
| Smith, Graham | SR Technologies | 6 | Voter |
| Solaija, Muhammad Sohaib | Istanbul Medipol University; Vestel | 6 | Potential Voter |
| Sosack, Robert | Molex Incorporated | 13 | Potential Voter |
| Srinivasan, Shree Raman | Qualcomm Incorporated | 2 | Aspirant |
| Stacey, Robert | Intel Corporation | 9 | Voter |
| Stanley, Dorothy | Hewlett Packard Enterprise | 14 | Voter |
| Startsev, Ivan | IITP RAS | 1 | Potential Voter |
| Stavridis, Athanasios | Ericsson AB | 10 | Voter |
| Stephens, Adrian | Self | 1 | Voter |
| Stott, Noel | Keysight Technologies | 10 | Voter |
| Strauch, Paul | Qualcomm Incorporated | 10 | Potential Voter |
| SUH, JUNG HOON | Huawei Technologies Co., Ltd | 6 | Voter |
| Sun, Bo | ZTE Corporation | 10 | Voter |
| Sun, Li-Hsiang | Sony Corporation | 3 | Voter |
| Sun, Yanjun | Qualcomm Incorporated | 5 | Voter |
| Sun, Yingxiang | Huawei Technologies Co. Ltd | 3 | Potential Voter |
| Sundman, Dennis | Ericsson AB | 9 | Voter |
| SURACI, FRANK | U.S. Department of Homeland Security | 5 | Potential Voter |
| Tanaka, Yusuke | Sony Corporation | 5 | Voter |
| Thompson, Tom | IEEE STAFF | 5 | Non Voter |
| Tian, Bin | Qualcomm Incorporated | 7 | Voter |
| Tian, Tao | Unisoc Comm. | 18 | Voter |
| tian, wensha | Beijing Xiaomi Science and Technology Co. Ltd. | 2 | Non Voter |
| Tolpin, Alexander | Intel Corporation | 2 | Aspirant |
| Torab Jahromi, Payam | Facebook | 16 | Voter |
| Trainin, Solomon | Qualcomm Incorporated | 5 | Voter |
| Tsai, Tsung-Han | MediaTek Inc. | 3 | Aspirant |
| Tsodik, Genadiy | Huawei Technologies Co., Ltd | 4 | Voter |
| Turkmen, Halise | Vestel | 5 | Potential Voter |
| Uln, Kiran | Cypress Semiconductor Corporation | 9 | Voter |
| Urabe, Yoshio | Panasonic Corporation | 3 | Voter |
| van Wageningen, Andries | Signify | 4 | Voter |
| Van Zelst, Allert | Qualcomm Incorporated | 2 | Voter |
| Varshney, Prabodh | Nokia | 10 | Voter |
| Venkatesan, Ganesh | Intel Corporation | 1 | Voter |
| Verenzuela, Daniel | Sony Corporation | 5 | Potential Voter |
| Verma, Sindhu | Broadcom Corporation | 2 | Voter |
| Vermani, Sameer | Qualcomm Incorporated | 3 | Voter |
| VIGER, Pascal | Canon Research Centre France | 4 | Voter |
| Wang, Chao Chun | MediaTek Inc. | 9 | Voter |
| Wang, Hao | Tencent | 7 | Voter |
| Wang, Huizhao | Quantenna Communications, Inc. | 1 | Voter |
| Wang, Lei | Futurewei Technologies | 17 | Voter |
| Wang, Pu | Mitsubishi Electric Research Labs (MERL) | 9 | Potential Voter |
| Wang, Qi | Apple, Inc. | 6 | Voter |
| Wang, Xiaofei | InterDigital, Inc. | 8 | Voter |
| Wang, Yi-Hsiu | Zeku | 5 | Potential Voter |
| Want, Roy | Google | 8 | Voter |
| Ward, Lisa | Rohde & Schwarz | 5 | Voter |
| Wendt, Matthias | Signify | 8 | Voter |
| Wentink, Menzo | Qualcomm Incorporated | 12 | Voter |
| Wilhelmsson, Leif | Ericsson AB | 8 | Voter |
| Wizenberg, Reut | Vayyar Imaging | 1 | Aspirant |
| WU, Haiqin | Myself | 6 | Non Voter |
| Wu, Hao | XGIMI Technology Co.Ltd | 2 | Non Voter |
| Wu, Kanke | Qualcomm Incorporated | 5 | Potential Voter |
| Wu, Tianyu | Apple, Inc. | 7 | Voter |
| Wullert, John | Perspecta Labs | 8 | Potential Voter |
| Xiao, Bo | ZTE Corporation | 3 | Non Voter |
| Xin, Liangxiao | Sony Corporation | 6 | Voter |
| Xin, Yan | Huawei Technologies Co., Ltd | 5 | Voter |
| Xue, Qi | Qualcomm Incorporated | 8 | Voter |
| YAGHOOBI, HASSAN | Intel Corporation | 7 | Voter |
| Yan, Aiguo | Oppo | 1 | Potential Voter |
| Yang, Bo | Huawei Technologies Co. Ltd | 1 | Voter |
| Yang, Jay | Nokia | 6 | Potential Voter |
| Yang, Lin | Qualcomm Incorporated | 7 | Potential Voter |
| YANG, RUI | InterDigital, Inc. | 4 | Voter |
| Yang, Steve TS | MediaTek Inc. | 4 | Voter |
| Yang, Yunsong | Futurewei Technologies | 1 | Voter |
| Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) | 7 | Voter |
| Yee, James | MediaTek Inc. | 9 | Voter |
| Yee, Peter | NSA-CSD | 17 | Voter |
| yi, yongjiang | Futurewei Technologies | 17 | Voter |
| Yokoyama, Takahiro | Association of Radio Industries and Businesses (ARIB) | 1 | Non Voter |
| Young, Christopher | Broadcom Corporation | 4 | Voter |
| Yu, Heejung | Korea University | 13 | Aspirant |
| Yu, Jian | Huawei Technologies Co., Ltd | 3 | Voter |
| Yu, Mao | NXP Semiconductors | 4 | Voter |
| Yuan, Fangchao | Huawei Technologies Co., Ltd | 2 | Aspirant |
| Zaman, Malia | IEEE Standards Association (IEEE-SA) | 1 | Non Voter |
| ZEGRAR, Salah Eddine | Istanbul Medipol University; Vestel | 4 | Potential Voter |
| Zein, Nader | NEC Corporation | 6 | Aspirant |
| Zeng, Ruochen | NXP Semiconductors | 10 | Potential Voter |
| Zhang, Hongyuan | Marvell Semiconductor, Inc. | 4 | Voter |
| Zhang, Meihong | Huawei Technologies Co., Ltd | 2 | Potential Voter |
| Zhang, Yan | NXP Semiconductors | 10 | Voter |
| Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | 5 | Non Voter |
| Zhou, Richard (Yujia) | Charter Communications | 17 | Non Voter |
| Zhou, Yifan | Huawei Technologies Co., Ltd | 4 | Voter |
| Zou, Tristan | Qualcomm Incorporated | 1 | Potential Voter |
| Zuo, Xin | Tencent | 6 | 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](mailto:dstanley@ieee.org) |
| Jon Rosdahl (Qualcomm) | 1st Vice Chair (Venues and meeting planning) Treasurer | +1 (801) 492-4023 [jrosdahl@ieee.org](mailto:jrosdahl@ieee.org) |
| Robert Stacey (Intel Corporation) | 2nd Vice Chair (Rules and reflectors) IEEE 802 (LMSC) EC delegate | +1 (503) 712 4447 [robert.stacey@intel.com](mailto:robert.stacey@intel.com) |
| Stephen McCann (Huawei) | Secretary | [stephen.mccann@ieee.org](mailto:stephen.mccann@ieee.org) |
| Peter Ecclesine (Cisco Systems, Inc.) | Co-Technical Editor | +1 (408) 710-3403 [petere@ieee.org](mailto:petere@ieee.org) |
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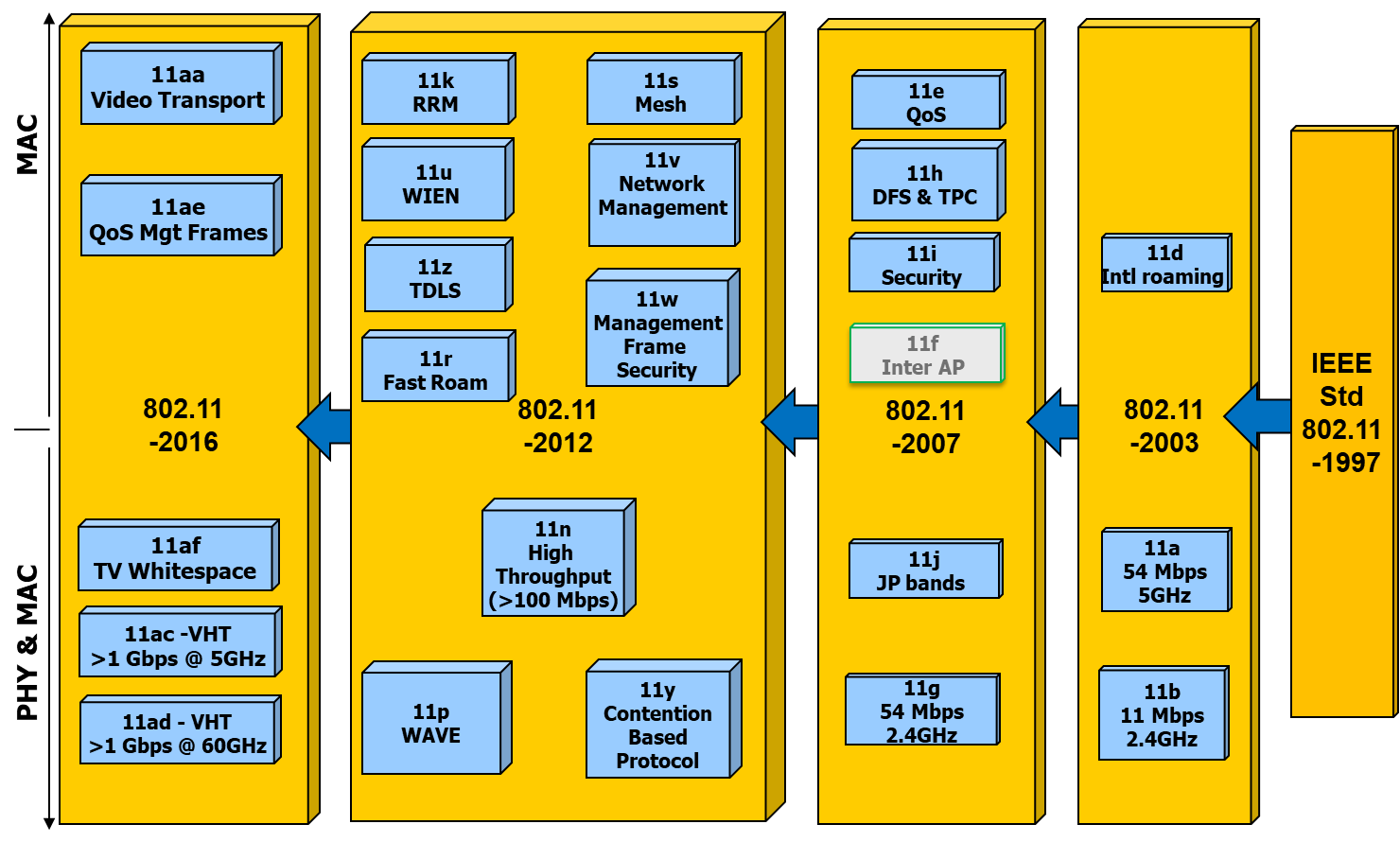
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**Annex C : Minutes**

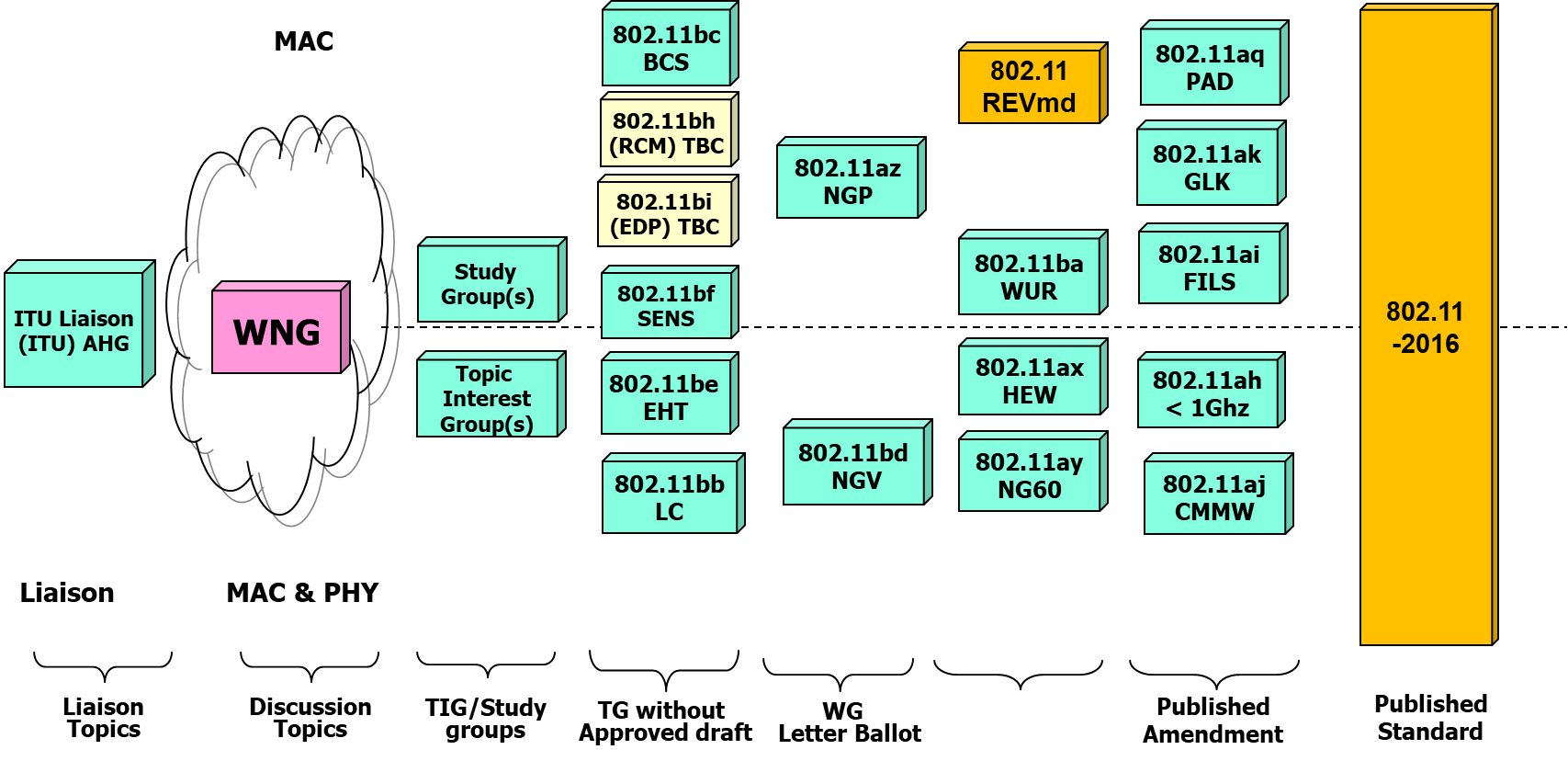
This Annex contains references to all IEEE 802.11 SC/TG/SG & Ad Hoc Committee (AHC) minutes from this meeting. Please note that they are NOT subject to the approval of these minutes, but are confirmed and approved by their individual group in the opening meeting at their next session.

|  |  |  |
| --- | --- | --- |
| WG | TE | 21-0046r1 |
| TGmd | TG | Did not meet |
| TGax | TG | Did not meet |
| TGay | TG | Did not meet |
| TGaz | TG | 21-0072r0 |
| TGba | TG | Did not meet |
| TGbb | TG | 21-0xxxr0 |
| TGbc | TG | 21-0037r1 |
| TGbd | TG | 21-0117r0 |
| TGbe | TG | 21-0103r1 |
| TGbf | TG | 21-0120r0 |
| AANI | SC | 21-0148r0 |
| COEX | SC | 21-0xxxr0 |
| WNG | SC | Did not meet |
| JTC 802 | SC | 21-0088r0 |
| ARC | SC | 21-0xxxr0 |
| RCM | SG | 21-0118r1 |
| ITU | AH | 21-0105r0 |

**Annex D : Revisions and Standards Pipeline**

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**IEEE 802.11 Revisions**

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**IEEE 802.11 Standards Pipeline**

End.