IEEE P802.11  
Wireless LANs

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| Minutes of the IEEE P802.11 Full Working Group | | | | |
| Date: 2021-03-08 | | | | |
| Author(s): | | | | |
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Abstract

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

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

**IEEE 802.11 Plenary Meeting – Session #186**

**March 8th – 16th, 2021**

**IEEE 802.11 Opening Plenary, Monday 8th March 2021**

Presiding chair: Dorothy Stanley (Hewlett Packard Enterprise) opened the meeting at 09:00 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 442 voting members and 11 Ex Officio voters of IEEE 802.11\*

There were 306 people present in the meeting.

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

1. **Notices** (11-21-0167r0 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.
2. **Approve/modify working group agenda** (11-21-0166r2)
   1. This is a summary of the meeting today. Please note the schedule for this session on the separate tab “Schedule”. Please note that you need to attend 9 time slots during this plenary to achieve the required 75% attendance as a voting credit.
   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 11-21-0166r2**
      1. Moved: Marc Emmelmann, 2nd: Al Petrick
      2. No objection to approving by unanimous consent
3. **January 2021 WG Minutes**
   1. **Move to approve the January 2021 WG minutes document 11-21-0046r1**
   2. Moved: Stephen McCann, 2nd: Stuart Kerry
   3. Following neither discussion nor dissent the minutes were approved by unanimous consent.
4. **New Attendees** (11-21-0215r0 slide #4)
   1. Straw Poll:
   2. **Are you a new attendee to IEEE 802.11?**
      1. Yes: 11, No: 164
   3. There is a new members’ meeting on Tuesday March 9th at 09:00 ET. This is a useful tutorial for those 11 new members to learn about IEEE 802.11.
5. **Call for essential Patents** (11-21-0182r0)
   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. There was no response to the call for essential patents.
6. **Participation and Attendance** (11-21-0182r0)
   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. **Voting Rights**
   1. Chair: During this 802.11 plenary, 9 meetings need to be attended to obtain the 75% attendance criteria.
   2. In addition, if you were previously a potential voter, you are now a voter as of the start of today’s meeting.
8. **Announcements** (11-21-0167r0)
   1. **Liaisons** (slide #4)
      1. Chair: There is one liaison from the Wireless Broadband Alliance (WBA) regarding 5G and RAN convergence. This liaison will be covered in more detail in the subsequent WNG SC meeting, following this opening meeting.
   2. **EC and standard board decisions** (slides #6)
      1. Chair: The EC approved the items on the slides. Three PARs were approved together with the completion of the 802.11ax project.
9. **Logistics and Key events/activities**
   1. **Working group session documents** (11-21-0167r0 slide #7)
   2. **Joint meetings & reciprocal credit with IEEE 802 groups** (slide #8)
      1. Reminder that there are topics relevant to IEEE 802.11 to be covered in IEEE 802.18, IEEE 802.19, IEEE 802.24 and some of the other IEEE 802 groups.
      2. Chair: Please note that there is no joint credit for IEEE 802.1, as there are no longer any relevant projects for IEEE 802.11 members.
   3. **M3.3 Other WG meeting plans** (11-21-0167r0 slide #9)
      1. This slide shows information about other WG meetings, future meetings and logistics during this plenary.
      2. Please use the online schedule at the IEEE 802 website for the online meeting times during this plenary. It can be adjusted to show times in your own time zone.
      3. Please remember to record your attendance for each slot during this plenary, using the IMAT tool: <https://imat.ieee.org/802.11>
   4. **Audio Visual Etiquette** (11-21-0211r0 slide #7)
      1. VC1: Please remember this advice when you are presenting during online calls.
   5. **M3.7 Recording attendance** (slide #9)
      1. VC1: Please note the rules about recording attendance at each IEEE 802.11 meeting during this plenary.
10. **Status of all groups** (11-21-0167r0)
    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.
    3. **Summary of Ballots** (slide #19)
       1. There have been several ballots and comment collections, between the January 2021 meeting and now.
11. **Membership** (11-21-0167r0 slide #23)
    * 1. These slides show the IEEE 802.11 membership numbers, by affiliation and whether members have been recently active.
      2. No questions.
12. **Timelines**
    1. IEEE 802.11-2020 has been added as the new 802.11 baseline and therefore IEEE 802.11-2016 has moved down the timeline page:
    2. <https://www.ieee802.org/11/Reports/802.11_Timelines.htm>
    3. There will be new rows for TGme, TGbh and TGbi after the completion of this March plenary, once some tentative milestone dates have been determined.
    4. No questions
13. **Group Summaries** (11-21-0183r3)
    1. Special notes were mentioned for the following groups:
    2. **Editors’ meeting and ANA** (slide #3)
       1. There is an editors’ meeting later this session, as per the online schedule. Other topics include the ANA status (11-11-0270r54).
       2. No questions
    3. **AANI** SC (slide #5)
       1. There are 4 meetings for this session. A report was produced and was sent out for comment collection. The work will be to prepare a liaison for the WBA regarding how fine grain QoS for 5G flows can be provided by 802.11ax.
       2. No questions
    4. **ARC SC** (slide #6)
       1. There have been 4 teleconferences since the January 2021 meeting, basically discussing TGbe architecture issues.
       2. No questions
    5. **Co-ex** **SC** (slide #8)
       1. This standing committee will meet once this session.
       2. Comment (C): ETSI BRAN is also discussing some 60 GHz topics, which are related to TGay.
       3. A: I’m not sure if 60 GHz topics are actually within scope of the co-ex group.
    6. **PAR SC** (slide #10)
       1. There will be 1 meeting during this IEEE 802.11 session to formally review 2 PARs:
          * + 802.1Qdq
            + 802.1ASdr
       2. There is also an additional teleconference meeting on Thursday 18th March at 09:00 ET to consider any feedback.
       3. No questions
    7. **WNG** (slide #11)
       1. There is 1 meeting this sesion with 1 presentation, from the WBA regarding Wi-Fi and 5G RAN convergence.
       2. No questions
    8. **JTC1** (slide #12)
       1. There is 1 meeting during this session.
       2. No questions
    9. **TGme** (slide #15)
       1. This is a new Task Group for revising the IEEE 802.11-2020 baseline specification.
       2. No questions
    10. **TGax** (slide #16)
        1. This task group has now finished its work and P802.11ax has been approved as a new amendment. There are no meetings this session.
        2. An award presentation is scheduled for May 2021.
        3. No questions
    11. **TGay** (slide #17)
        1. This task group has now finished its work and P802.11ay is now on the RevCom agenda for publication. There are no meetings this session.
        2. No questions
    12. **TGaz** (slide #18)
        1. The group is meeting 3 times during this session to resolve comments from Letter Ballot 253.
        2. No questions
    13. **TGba** (slide #19)
        1. This task group has now finished its work and P802.11ba is now on the RevCom agenda for publication. There are no meetings this session.
        2. No questions
    14. **TGbb** (slide #20)
        1. The group is meeting 4 times during this session.
        2. No questions.
    15. **TGbc** (slide #21)
        1. The goals are to continue the comment resolution process.
        2. There are 4 meetings during this session.
        3. No questions
    16. **TGbd** (slide #23)
        1. The group is also working on comment resolutions this session and has 4 meetings.
        2. No questions
    17. **TGbe** (slide #27)
        1. The group produced a draft 0.3 and started a comment collection. There were 2409 comments created and many teleconferences have been held to start the resolution process.
        2. No questions
    18. **TGbf** (slide #30)
        1. There have been 3 teleconference calls since the January 2021 meeting on various topics.
        2. No questions
    19. **TGbh (Random and Changing MAC address)** (slide #32)
        1. This is a new group meeting twice during this session.
        2. No questions.
    20. **TGbi (Enhanced Data Privacy)** (slide #33)
        1. This is a new group meeting twice during this session.
        2. No questions.
    21. **ITU ad-hoc** (slide #34)
        1. There have been 3 meetings since January 2021. There will be 1 session during this session.
        2. Q: On the slide, it looks like references to 1405 should be 1450.
        3. A: Yes, that is correct.
    22. **Coex SC**
        1. Chair: Regarding the Coex SC charter, I would like to direct the Coex SC to additionally consider coexistence topics for 60 GHz operation.
14. **IEEE 802.18 Liaison** (11-21-0377r0)
    1. This document shows the details of the IEEE 802.18 meeting this session.
    2. No questions.
15. **IEEE 802.19 Liaison** (11-21-0403r0)
    1. This document shows the details of the IEEE 802.19 meeting this session.
    2. No questions.
16. **Working Group Motions (Old Business)** (11-21-1635r0)
    1. **TGme chair confirmation** (slide #5)
       1. **Confirm Mike Montemurro as an IEEE 802.11me Task Group Chair.**
       2. Moved: Matthew Fischer, 2nd: Dan Harkins
       3. No objection to approving by unanimous consent
    2. **TGbh chair confirmation** (slide #6)
       1. **Confirm Mark Hamilton as an IEEE 802.11bh Task Group Chair.**
       2. Moved: Edward Au, 2nd: Allan Jones
       3. No objection to approving by unanimous consent
    3. **TGbi chair confirmation** (slide #7)
       1. **Confirm Carol Ansley as an IEEE 802.11bi Task Group Chair.**
       2. Moved: Jouni Malinen, 2nd: Lei Wang
       3. No objection to approving by unanimous consent
17. **DirectVoteLive update** (11-21-0374r3)
    1. This is a summary of the results of the voting tool test, which will be used for the May meeting going forward. There are some issues, which are being dealt with.
    2. Please note the “warnings” on slide #7
    3. Everyone will have received a test email just prior to this meeting. Please can you now click on your email link and vote using the DirectVoteLive tool.
    4. I would prefer to address issues offline (by email) please.
    5. Question (Q): If you switch from one meeting to another (for example the first meeting is very short within a 2 hour time block), it doesn’t appear that you can vote in the 2nd meeting.
    6. Answer (A): Initially this tool will only be used for the 802.11 WG plenary meetings.
    7. Chair: I would like to thank Jon Rosdahl for sorting out all the issues with this tool.
    8. Chair: Please can members check the list on slides #10 and #11, as it will be important to have full and correct operation going forward.
    9. Chair: This new tool is not being used during this session.
18. **AoB**
    1. Chair: Please remember to look at the meeting schedule within the agenda tab and record your attendance for each meeting of this session.
    2. The next IEEE 802.11 plenary meeting will be on Tuesday March 16th.
19. **Recess**
    1. Meeting recessed at 11:00 EST.

**Tuesday, 16th March 2021**

**IEEE 802.11 Closing Plenary**

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

252 people present in the meeting.

1. **Approve/modify working group agenda** (11-21-0166r4)
   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 11-21-0166r4**
      1. Moved: Marc Emmelmann, 2nd: Stuart Kerry
      2. No objection to approving by unanimous consent.
2. **Call for Essential Patents** (11-21-0168r0 slide #7)
   1. Call for Essential Patents
   2. No statements
   3. No questions
3. **Announcements** (11-21-0168r0)
   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. **Chair’s minutes, reports and web pages**
      1. Please can you ensure that the sub-group minutes are on the server within 30 days after the close of this meeting. Please can you also send web-page and timeline updates to the secretary.
      2. Please be aware of the future chair’s committee meetings (CAC), the first one of which will be on April 12th 09:00 ET. Please note the deadline for the sub-group agendas.
   3. **Next Meeting**
      1. The next meeting of the IEEE 802.11 working group is in May 10th - 18th 2021 and will be an online meeting.
   4. **Letters of Assurance (LoA)** (slide #11)
      1. Chair: please remember about the LoA requirements.
      2. There is one LoA request open at the moment.
   5. **IEEE Store and ISO SC6** (slides #12 and #13)
      1. Chair: Please note that IEEE 802.11-2020 has been recently published and is now available. The publication date for IEEE 802.11ax-2021 is the end of April 2021.
      2. Chair: There will be a later motion to liaise IEEE 802.11-2020 to ISO.
      3. No questions
   6. **Press Releases** (slide #14)
      1. A press release on the topic of TGbf has been completed. There will be new press releases for TGbh and TGbi produced over the next few weeks. The IEEE 802 EC will approve the final version.
   7. **Public Visibility Standing Committee** (slide #15)
      1. This IEEE 802 group is designed to increase the external visibility of IEEE 802.
4. **Treasury Report** (ec-21-0024-00)
   1. VC1: This shows the treasurers’ report and is correct up to 28th February2021:
   2. <https://mentor.ieee.org/802-ec/dcn/21/ec-21-0024-00-WCSG-wireless-treasurer-report-march-2021-electronic-plenary.pptx>
   3. The finance tool NetSuite will shortly be no longer be used, so from the start of May 2021 another tool will be used.
   4. No questions
5. **Upcoming Venues** (11-21-0211r1 slides #13)
   1. VC1: This slide shows that the next online interim meeting will be in May 2021.
   2. The next possible IEEE 802.11 face to face meeting could be in September 2021. The decision as to whether this will be an online or face-to-face meeting will be made at the IEEE 802 Wireless Chairs’ meeting on May 5th 2021.
   3. At the IEEE 802 EC meeting on July 9th 2021 a decision will be made as to whether the November 2021 IEEE 802 meeting will be face-to-face or online.
   4. Q: Is anyone in IEEE 802 thinking of Covid-19 vaccination certificates or tests as requirements for the future venues?
   5. A: I don’t think that IEEE will impose any requirements on the face to face meeting themselves. I think it is up to the health regulators of the countries within which the face to face meetings are held. We are also working with the hotels to ensure that the meetings will be held in the safest way based on local regulations.
   6. **Straw poll**
   7. **When do you expect the next in person 802.11 Session will be?**
   8. A – Sept 2021 - 36
   9. B – Nov 2021 - 54
   10. C – After 2021 - 72
   11. D – No answer - 53
   12. No questions
6. **Timelines**
   1. There have been several changes to the timeline page:
      1. 802.11-2020 now published.
      2. New row for TGme
      3. New row for TGbh and TGbi
      4. Updates for TGbd and TGbe
   2. Chair: Thank you for keeping this web page up to date.
   3. No questions
7. **Attendance statistics** (11-21-0184r2 slide #4)
   1. VC2: These slides are a summary of the attendance statistics and sub-group activities during this session.
8. **WG Committee Reports** (11-21-0184r2)
   1. **Editors** (slide #10)
      1. In May 2021 the amendment order may be re-arranged, once more information about each task group milestone dates have been received.
      2. No questions
   2. **AANI** (slide #18)
      1. Please note that WFA should be WBA.
      2. C: Please can WFA to be changed to WBA on slide #22 and a revised closing report document posted.
      3. A: Yes.
   3. **ARC** (slide #24)
      1. No questions
   4. **COEX SC** (slide #30)
      1. Q: I thought that 60 GHz operation was not allowed in China.
      2. A: The group has not really discussed that item and so it is a great topic to discuss at the next COEX SC meeting.
   5. **JTC1 SC** (slide #33)
      1. No questions
   6. **PAR Review SC** (slide #36)
      1. There were two PARs that required some review during this session:
         1. 802.1Qdq
         2. 802.1ASdr
      2. However, some comments will be discussed on Thursday 18th March during the next PAR Review SC teleconference, to match the IEEE 802 EC plenary timetable.
      3. No questions
   7. **WNG SC** (slide #37)
      1. The presentation earlier this week was a liaison about 5G and WLAN from WBA:
      2. <https://mentor.ieee.org/802.11/dcn/21/11-21-0408-00-0wng-wba-5g-and-wi-fi-ran-convergence-ieee-802-11-wng-session.pdf>
      3. No questions
   8. **REVme** (slide #40)
      1. It was the initial meeting of this group this session.
      2. There will be a comment collection on REVme D0.0, which is essentially IEEE 802.11-2020.
      3. No questions
   9. **TGaz** (slide #44)
      1. Working on LB253 comments
      2. No questions
   10. **TGbb** (slide #50)
       1. No questions
   11. **TGbc** (slide #54)
       1. No questions
   12. **TGbd** (slide #60)
       1. No questions
   13. **TGbe** (slide #65)
       1. No questions
   14. **TGbf** (slide #69)
       1. No questions
   15. **TGbh** (slide #74)
       1. This was the first meeting within an IEEE 802.11 session.
       2. No questions
   16. **TGbi** (slide #80)
       1. This was the first meeting within an IEEE 802.11 session.
       2. No questions
   17. **ITU ad-hoc** (slide #83)
       1. No questions
9. **Liaison Reports** (11-21-0184r2)
   1. **Wi-Fi Alliance** (slide #97)
      1. There was an online members’ event last week.
      2. Q: Regarding the ongoing technical activities, are these in development or are they completed certification programs?
      3. A: It’s a mixture of both.
      4. C: The 11ax program is in development.
   2. **IETF** (slide #101)
      1. The last meeting online was last week.
      2. No questions
   3. **IEEE 1609** (slide #119)
      1. No questions
10. **Break**
    1. Chair: At this point we will have a 5 minute recess
11. **Working Group Motions (Old Business)** (11-21-0215r3)
    1. **TGme Vice Chairs** (slide #10)
       1. **Confirm Mark Hamilton and Mark Rison as TGme Vice Chairs.**
       2. Moved by Mike Montemurro on behalf of TGme
       3. Approved by unanimous consent
       4. [TGme similar motion result: Yes: 57, No: 0, Abstain: 1]
    2. **TGbh vice-chairs** (slide #11)
       1. **Confirm Peter Yee (NSA-CSD/AKAYLA), and Stephen Orr (Cisco) as TGbh Vice Chairs.**
       2. Moved by Mark Hamilton on behalf of TGbh
       3. Approved by unanimous consent
       4. [TGbh similar motion result: Yes: 34, No: 0, Abstain: 0]
    3. **TGbi vice-chairs** (slide #12)
       1. **Confirm Jerome Henry and Stephen McCann as TGbi Vice Chairs**
       2. Moved by Carol Ansley on behalf of TGbi.
       3. Moved: Osama Aboul-Magd, Seconded: Yasuhiko Inoue
       4. Approved by unanimous consent
       5. [TGbi similar motion result: Yes: 53, No: 0, Abstain: 4]
    4. **IEEE Std 802.11-2020 to ISO** (slide #13)
       1. **Request IEEE 802 LMSC to submit IEEE Std 802.11-2020 to ISO/IEC JTC1/SC6 for adoption under the PSDO agreement..**
       2. Moved by Andrew Myles on behalf of the JTC1 SC
       3. Seconded: Ian Sherlock
       4. Result: Yes: 100, No: 1, Abstain: 23 (Motion passes)
    5. **TGbh WFA Liaison** (slide #14)
       1. **Move to forward 11-21/0425r2 to Wi-Fi Alliance as a liaison requesting for input on RCM, giving the WG Chair editorial license.**
       2. Moved by Mark Hamilton on behalf of TGbh
       3. Seconded: Ian Sherlock
       4. Result: Yes: 96, No: 1, Abstain: 17 (Motion passes)
       5. [TGbh similar motion result: Yes: 32, No: 0, Abstain: 4]
    6. **TGbh WBA Liaison** (slide #15)
       1. **Move to forward 11-21/449r0 to Wireless Broadband Alliance as a liaison requesting input on RCM, given the WG Chair editorial license.**
       2. Moved by Mark Hamilton on behalf of TGbh
       3. Seconded: Joseph Levy
       4. Result: Yes: 99, No: 2, Abstain: 11 (Motion passes)
       5. [TGbh similar motion result: Yes: 32, No: 0, Abstain: 2]
12. **REVmd Awards** (11-21-0447r0)
    1. This document contains a list of people who contributed to the TGmd project which resulted in IEEE 802.11-2020 in February 2021.
    2. Chair: Congratulations to all people mentioned in this document and thank you for all your hard work.
13. **DirectVoteLive** (11-21-0374r3)
    1. This report summarizes the status of the DirectVoteServer tool.
    2. All members present were invited to vote in a new vote using the tool.
    3. There have been some questions from various members about the tool and these have been forwarded to the IEEE.
    4. Q: Should we open the DirectVoteLive at the beginning of a meeting and then close it at the end of session?
    5. A: Yes.
    6. C: If you select “No” on a vote, the tool implies that you have not actually voted. Therefore it is confusing.
    7. Q: How do we restrict any votes to the meeting we are attending?
    8. A: At the moment, this will only be used for WG votes.
    9. C: The standard for emails states that they are not case sensitive, so this is strange behavior of the tool.
    10. Q: Is this tool for IEEE 802.11 documents?
    11. A: No.
    12. C: I think these unused features are very confusing.
    13. Q: The new DirectVoteLive test email for this meeting, took about 45 minutes to arrive.
    14. A: Yes, it did take more than 30 minutes to reach the 400 IEEE 802.11 members.
    15. C: The other 802 WGs are not having these types of issues. IEEE 802.1 did have some issues on their teleconferences the first time they used it, but they seem to be ok now.
    16. C: IEEE 802.3 may try and use the tool for their closing plenary.
    17. Chair: We have to identify electronic tools that work efficiently as we move forward. We are still deciding whether DirectVoteLive can be used for the 802.11 WG. Webex can still be used as a fallback.
    18. Chair: I would like to thank Jon for all his work trying to sort out issues with the tool.
14. **Wireless Chairs Meeting** (11-21-0168r0 slide #17)
    1. The next meeting will be on April 7th 2021 at 15:00 ET and everyone is welcome to attend. The subsequent meeting on May 5th 2021 will make a decision about the September 2021 IEEE 802 wireless interim being online or not.
    2. The proposed date of the next IEEE 802.11 meeting is May 10-18th 2021.
15. **Announcements** (11-21-0168r0 slide #19)
    1. There will be an IEEE 802 Electronic Media 2021 Edition. There will be no physical media this time. Please see the email that the chair sent out about this.
16. **AoB**
    1. Q: I think that Covid-19 may stop many people travelling for some time. Therefore I think there will be requirements for remote participants at future face to face meeting for several years.
    2. Chair: I acknowledge this point. Regarding meeting face to face, this will take some work. The IEEE 802 EC is discussing hybrid meetings and how they would possibly work.
    3. Q: Perhaps the voting requirements also need to be sorted out?
    4. Chair: The IEEE 802 EC is also discussing attendance credit issues for interims.
    5. Q: Which email will receive the notification for the electronic media 2021 edition?
    6. A: There will not be a unique email. You’ll have to log in to your IEEE-SA account to access the media. The notification emails will go to the IEEE 802.11 WG email reflector.
    7. Q: Regarding the IEEE 802 July 2021 plenary, what are the exact dates please?
    8. Chair: They have not been decided yet. The plan is to choose the same week as originally planned and avoid the IETF online meeting.
    9. Q: I would also like to stick to the announced time windows for future online dates, as people do have other commitments that they may need to attend.
    10. VC1: It looks as though the IEEE 802 EC meeting will be between 9th – 23rd July, so that the IEEE 802.11 meeting could be between 12th – 20th July.
17. **Adjournment**
    1. Having completed the agenda, the chair announced that the meeting was adjourned at 12:00 EDT.

**Annex A: Attendance & Affiliation**

| **Name** | **Affiliation** | **Attended >= 75%** | **Status** |
| --- | --- | --- | --- |
| Abdelaal, Rana | Broadcom Corporation | Yes | Voter |
| AbidRabbu, Shaima' | Istanbul Medipol University; Vestel | Yes | Voter |
| Abouelseoud, Mohamed | Sony Corporation | Yes | Voter |
| Aboulmagd, Osama | Huawei Technologies Co., Ltd | Yes | Voter |
| Abushattal, Abdelrahman | Istanbul Medipol University; Vestel | Yes | Voter |
| Adachi, Tomoko | TOSHIBA Corporation | Yes | Voter |
| Adhikari, Shubhodeep | Broadcom Corporation | Yes | Voter |
| Agarwal, Peyush | Broadcom Corporation | Yes | Voter |
| Agrawal, abhishek | ON Semiconductor | No | Voter |
| Agrawal, Sandeep | C-DOT/Centre for Development of Telematics | Yes | Voter |
| Aio, Kosuke | Sony Corporation | Yes | Voter |
| Akhmetov, Dmitry | Intel Corporation | Yes | Voter |
| AKHTAR, NADEEM | Arista Networks, Inc. | Yes | Aspirant |
| Al Falujah, Iyad | ON Semiconductor | Yes | Aspirant |
| Aldana, Carlos | Facebook | Yes | Potential Voter |
| Alexander, Danny | Intel Corporation | Yes | Potential Voter |
| Ambede, Abhishek | Ericsson AB | Yes | Potential Voter |
| An, Song-Haur | INDEPENDENT | Yes | Voter |
| ANANDAKUMAR, KRISHNASAMY | Maxlinear Inc | Yes | Potential Voter |
| Andersdotter, Amelia | None - Self-funded | Yes | Voter |
| Ansley, Carol | IEEE member / Self Employed | Yes | Voter |
| Anwyl, Gary | MediaTek Inc. | Yes | Voter |
| Arlandis, Diego | Maxlinear Corp | Yes | Potential Voter |
| Arregui, Antonio | Maxlinear | Yes | Potential Voter |
| Arrington, Arthur | Air Network Solutions | Yes | Voter |
| Asai, Yusuke | Nippon Telegraph and Telephone Corporation (NTT) | Yes | Voter |
| Asterjadhi, Alfred | Qualcomm Incorporated | Yes | Voter |
| Au, Kwok Shum | Huawei Technologies Co., Ltd | Yes | Voter |
| Au, Oscar | Origin Wireless | Yes | Voter |
| Auluck, Vijay | Self | Yes | Voter |
| Avital, Ziv | MaxLinear | Yes | Potential Voter |
| Avrillon, Matthieu | Luceor | Yes | Voter |
| Awater, Geert | Qualcomm Incorporated | Yes | Voter |
| Aygul, Mehmet | Istanbul Medipol University; Vestel | Yes | Voter |
| B, Hari Ram | NXP Semiconductors | Yes | Voter |
| Badenes, Agustin | Maxlinear Corp | Yes | Potential Voter |
| Baek, SunHee | LG ELECTRONICS | Yes | Voter |
| Bahn, Christy | IEEE STAFF | Yes | Aspirant |
| Baik, Eugene | Qualcomm Incorporated | Yes | Voter |
| Bajko, Gabor | MediaTek Inc. | Yes | Voter |
| Banerjea, Raja | Qualcomm Incorporated | Yes | Voter |
| Bankov, Dmitry | IITP RAS | Yes | Voter |
| Bapat, Sanjay | Maxlinear | No | Aspirant |
| baron, stephane | Canon Research Centre France | Yes | Voter |
| Barr, David | Maxlinear Corp | Yes | Potential Voter |
| Batra, Anuj | Apple, Inc. | Yes | Voter |
| Baykas, Tuncer | Kadir Has University, Hyperion Technologies | Yes | Voter |
| BECHADERGUE, Bastien | OLEDCOMM | Yes | Voter |
| Beg, Chris | Cognitive Systems Corp. | Yes | Voter |
| Bei, Jianwei | NXP Semiconductors | Yes | Voter |
| Ben Arie, Yaron | Toga networks (a huawei company) | Yes | Voter |
| Berger, Christian | NXP Semiconductors | No | Voter |
| Berkema, Alan | INDEPENDENT | Yes | Voter |
| Berner, Stephan | PureLiFi | Yes | Voter |
| Bhandaru, Nehru | Broadcom Corporation | Yes | Voter |
| Bims, Harry | Bims Laboratories, Inc. | Yes | Voter |
| Bluschke, Andreas | Signify | Yes | Voter |
| Bober, Lennert | Fraunhofer Heinrich Hertz Institute | Yes | Voter |
| Boldy, David | Broadcom Corporation | Yes | Voter |
| Bouchet, Olivier | Orange | Yes | Voter |
| Bravo, Daniel | Intel Corporation | Yes | Potential Voter |
| Bredewoud, Albert | Broadcom Corporation | Yes | Voter |
| Campos, Arturo | GiGaLiFi | No | Non-Voter |
| Canchi, Radhakrishna | Kyocera International Inc | Yes | Voter |
| Cao, Rui | NXP Semiconductors | Yes | Voter |
| Cariou, Laurent | Intel Corporation | Yes | Voter |
| Carney, William | Sony Corporation | Yes | Voter |
| Cavalcanti, Dave | Intel Corporation | Yes | Voter |
| Cepni, Gurkan | Apple, Inc. | Yes | Voter |
| CHAN, YEE | Facebook | Yes | Voter |
| Chao, Yi-Ling | NXP Semiconductors | Yes | Aspirant |
| Chaplin, Clint | Self | No | ExOfficio |
| Chayat, Naftali | Vayyar Imaging | Yes | Potential Voter |
| Chen, Chaoliang | iComm Semiconductor | Yes | Aspirant |
| Chen, Cheng | Intel Corporation | Yes | Voter |
| Chen, Cheng-Ming | Qualcomm Incorporated | Yes | Voter |
| Chen, Evelyn | Ericsson AB | Yes | Voter |
| chen, jindou | Huawei Technologies Co., Ltd | Yes | Potential Voter |
| Chen, Na | Self | Yes | Voter |
| Chen, Xiaogang | Intel | Yes | Voter |
| Chen, Zheng | Huawei Technologies Co., Ltd | No | Non-Voter |
| Cheng, Gang | Nokia | No | Non-Voter |
| Cheng, Paul | MediaTek Inc. | Yes | Voter |
| Cheng, Xilin | NXP Semiconductors | Yes | Voter |
| CHERIAN, GEORGE | Qualcomm Incorporated | Yes | Voter |
| Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. | Yes | Voter |
| Cho, Hanbyeog | Electronics and Telecommunications Research Institute (ETRI) | No | Non-Voter |
| Cho, Hangyu | LG ELECTRONICS | Yes | Voter |
| cho, shinho | allradio | No | Non-Voter |
| Choi, Dain | Telecommunications Technology Association (TTA) | No | Non-Voter |
| Choi, Jinsoo | LG ELECTRONICS | Yes | Voter |
| Choo, Seungho | Senscomm Semiconductor Co., Ltd. | Yes | Voter |
| Chu, Liwen | NXP Semiconductors | Yes | Voter |
| CHUN, JINYOUNG | LG ELECTRONICS | Yes | Voter |
| Chung, Bruce | Realtek Semiconductor Corp. | Yes | Voter |
| Chung, Chulho | SAMSUNG | Yes | Voter |
| Ciochina, Dana | Sony Corporation | Yes | Voter |
| Coffey, John | Realtek Semiconductor Corp. | Yes | Voter |
| Congdon, Paul | Huawei Technologies Co., Ltd | No | Non-Voter |
| Cordeiro, Carlos | Intel Corporation | Yes | Voter |
| Costa, D.Nelson | Peraso Technologies Incorporated | Yes | Voter |
| da Silva, Claudio | Intel Corporation | Yes | Voter |
| Das, Dibakar | Intel Corporation | Yes | Voter |
| Das, Subir | Perspecta Labs Inc | Yes | ExOfficio |
| Dash, Debashis | Apple, Inc. | No | Voter |
| Dauphinee, Leonard | MAXLINEAR INC | Yes | Voter |
| Davies, Robert | Signify | Yes | Voter |
| de Vegt, Rolf | Qualcomm Incorporated | Yes | Voter |
| DeLaOlivaDelgado, Antonio | InterDigital, Inc. | Yes | Voter |
| Derham, Thomas | Broadcom Corporation | Yes | Voter |
| Di Taranto, Rocco | Ericsson AB | Yes | Potential Voter |
| Ding, Baokun | Huawei Technologies Co., Ltd | Yes | Voter |
| Ding, Yanyi | Panasonic corporation | Yes | Voter |
| Dogukan, Ali | Vestel | Yes | Potential Voter |
| Dong, mingjie | Huawei Technologies Co., Ltd | No | Non-Voter |
| Dong, Xiandong | Xiaomi Inc. | Yes | Voter |
| Doostnejad, Roya | Intel Corporation | No | Voter |
| Du, Rui | Huawei Technologies Co., Ltd | Yes | Voter |
| Du, Zhenguo | Huawei Technologies Co., Ltd | Yes | Voter |
| Duan, Ruchen | SAMSUNG | Yes | Voter |
| Ecclesine, Peter | Cisco Systems, Inc. | Yes | Voter |
| Edelmayer, Andras | Commsignia | No | Non-Voter |
| Edgar, Richard | Imagination Technologies Ltd. | Yes | Voter |
| Eitan, Alecsander | Qualcomm Incorporated | Yes | Voter |
| ElSherif, Ahmed | Qualcomm Incorporated | Yes | Voter |
| Emmelmann, Marc | Self Employed / Koden-TI / Fraunhofer FOKUS | Yes | Voter |
| Erceg, Vinko | Broadcom Corporation | Yes | Voter |
| Erell, Assaf | Vayyar Imaging Ltd. | Yes | Potential Voter |
| Escuder, Francisco | Maxlinear Corp | No | Non-Voter |
| Escuder, Francisco | Maxlinear Corp | No | Non-Voter |
| Fang, Juan | Intel Corporation | Yes | Potential Voter |
| Fang, Yonggang | Self | Yes | Voter |
| feng, Shuling | MediaTek Inc. | Yes | Voter |
| Feng, Xiang | Keysight Technologies | Yes | Voter |
| Ferruz, David | Maxlinear Corp | Yes | Potential Voter |
| Fischer, Matthew | Broadcom Corporation | Yes | Voter |
| Fletcher, Paul | Samsung Cambridge Solution Center | Yes | Voter |
| Fridman, Roi | Vayyar Imaging Ltd | Yes | Potential Voter |
| Furuichi, Sho | Sony Corporation | Yes | Voter |
| Gan, Ming | Huawei Technologies Co., Ltd | Yes | Voter |
| Ganwani, Vijay | NXP Semiconductors | Yes | Voter |
| Gardner, James | Qualcomm Incorporated | Yes | Voter |
| Garg, Lalit | Broadcom Corporation | Yes | Voter |
| Garringer, James | Apple, Inc. | No | Non-Voter |
| Ghaderipoor, Alireza | MediaTek Inc. | Yes | Potential Voter |
| Ghosh, Chittabrata | Intel Corporation | Yes | Voter |
| Gidvani, Ravi | SAMSUNG | Yes | Potential Voter |
| Gilb, James | General Atomics Aeronautical Systems, Inc., University of San Diego | No | ExOfficio |
| Godbole, sachin | Broadcom Corporation | Yes | Aspirant |
| Godfrey, Tim | Electric Power Research Institute, Inc. (EPRI) | No | ExOfficio |
| Gong, Bo | Huawei Technologies Co., Ltd | Yes | Potential Voter |
| Goodall, David | Morse Micro | No | Non-Voter |
| GOTO, Fumihide | DENSO | Yes | Voter |
| Grandhe, Niranjan | NXP Semiconductors | Yes | Voter |
| Grigat, Michael | Deutsche Telekom AG | Yes | Voter |
| Gu, Xiangxin | UNISOC | Yes | Aspirant |
| GUIGNARD, Romain | Canon Research Centre France | Yes | Voter |
| Guntupalli, Lakshmikanth | Ericsson AB | Yes | Voter |
| Guo, Yuchen | Huawei Technologies Co., Ltd | Yes | Voter |
| Gupta, Binita | Intel Corporation | No | Non-Voter |
| Gurevitz, Assaf | INTEL | No | Aspirant |
| Haasz, Jodi | IEEE Standards Association (IEEE-SA) | No | Non-Voter |
| Haider, Muhammad Kumail | Facebook | Yes | Voter |
| Hall, Robert | CONSULTANT | Yes | Voter |
| Hamilton, Mark | Ruckus/CommScope | Yes | Voter |
| HAN, CHONG | pureLiFi | Yes | Voter |
| Han, Jonghun | SAMSUNG | Yes | Voter |
| HAN, Xiao | Huawei Technologies Co., Ltd | Yes | Voter |
| Han, Zhiqiang | ZTE Corporation | Yes | Voter |
| Handte, Thomas | Sony Corporation | Yes | Voter |
| Hansen, Christopher | Covariant Corporation | Yes | Voter |
| Harkins, Daniel | Hewlett Packard Enterprise | Yes | Voter |
| Harrison, Edward | Anritsu Company | Yes | Voter |
| Hart, Brian | Cisco Systems, Inc. | Yes | Voter |
| Haskou, Abdullah | InterDigital, Inc. | Yes | Voter |
| Henry, Jerome | Cisco Systems, Inc. | Yes | Voter |
| Hernandez, Gerardo | Gigalifi | No | Non-Voter |
| Hernandez, Marco | National Institute of Information and Communications Technology (NICT) | Yes | Aspirant |
| hervieu, Lili | Cable Television Laboratories Inc. (CableLabs) | Yes | Voter |
| Hiertz, Guido | Ericsson GmbH | Yes | Voter |
| Hirata, Ryuichi | Sony Corporation | Yes | Voter |
| Hiroki, Shigeru | Canon | No | Voter |
| Ho, Duncan | Qualcomm Incorporated | Yes | Voter |
| Holcomb, Jay | Itron Inc. | No | ExOfficio |
| Holland, Oliver | Advanced Wireless Technology Group, Ltd. | Yes | Voter |
| Hong, Hanseul | WILUS Inc. | No | Voter |
| Hsieh, Hung-Tao | MediaTek Inc. | Yes | Voter |
| Hsu, Chien-Fang | MediaTek Inc. | Yes | Voter |
| Hu, Chunyu | Facebook | Yes | Voter |
| Hu, Mengshi | Huawei Technologies Co., Ltd | Yes | Voter |
| Huang, Guogang | Huawei Technologies Co., Ltd | Yes | Voter |
| Huang, Lei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | Yes | Voter |
| Huang, Po-Kai | Intel Corporation | Yes | Voter |
| Hurtarte, Jeorge | Teradyne, Inc. | Yes | Voter |
| Ibrahim, Mostafa | SAMSUNG | Yes | Voter |
| IDO, Tetsuo | Canon | Yes | Voter |
| Ikegami, Tetsushi | Meiji University | Yes | Voter |
| Inohiza, Hirohiko | Canon | Yes | Voter |
| Inoue, Yasuhiko | Nippon Telegraph and Telephone Corporation (NTT) | Yes | Voter |
| Iranzo, Salvador | MaxLinear Corp | Yes | Potential Voter |
| Izquierdo, Eduardo | Maxlinear Corp | Yes | Potential Voter |
| Jamalabdollahi, Mohsen | Cisco Systems, Inc. | No | Non-Voter |
| Jang, Insun | LG ELECTRONICS | Yes | Voter |
| Jeffries, Timothy | Futurewei Technologies | Yes | Voter |
| Jeon, Eunsung | SAMSUNG ELECTRONICS | Yes | Voter |
| Ji, Chenhe | Huawei Technologies Co., Ltd | Yes | Voter |
| Jia, Jia | Huawei Technologies Co., Ltd | Yes | Voter |
| jiang, feng | Apple, Inc. | Yes | Voter |
| Jiang, Jinjing | Apple, Inc. | Yes | Voter |
| jiang, yiming | Nokia | No | Non-Voter |
| JIHOON, OH | Telecommunications Technology Association (TTA) | No | Non-Voter |
| Joh, Hanjin | KT Corp. | No | Non-Voter |
| Jones, Allan | Activision | Yes | Voter |
| JONES, JEFFRUM | Qorvo | No | Voter |
| Jones, Steven | Samsung Cambridge Solution Center | Yes | Potential Voter |
| Jones, Vincent Knowles IV | Qualcomm Incorporated | Yes | Voter |
| Jung, hyojin | Hyundai Motor Company | No | Aspirant |
| Jungnickel, Volker | Fraunhofer Heinrich Hertz Institute | Yes | Voter |
| Kadampot, Ishaque Ashar | Qualcomm Incorporated | Yes | Voter |
| Kain, Carl | USDOT; Noblis, Inc. | Yes | Voter |
| Kakani, Naveen | Qualcomm Incorporated | Yes | Voter |
| kamath, Manoj | Broadcom Corporation | Yes | Potential Voter |
| Kamel, Mahmoud | InterDigital, Inc. | Yes | Voter |
| Kandala, Srinivas | SAMSUNG | Yes | Voter |
| Kang, Sugbong | Apple, Inc. | Yes | Potential Voter |
| Kasher, Assaf | Qualcomm Incorporated | Yes | Voter |
| katla, satyanarayana | InterDigital, Inc. | No | Non-Voter |
| Kennedy, Richard | Huawei Technologies Co., Ltd | Yes | Aspirant |
| Kenney, John | TOYOTA InfoTechnology Center U.S.A. | Yes | Voter |
| Keren, Rani | Huawei Technologies Co., Ltd | Yes | Aspirant |
| Kerry, Stuart | OK-Brit; Self | Yes | Voter |
| Kessler, Thomas | Deutsche Telekom AG | No | Non-Voter |
| Khan, Naseem | Leidos Engineering. LLC | Yes | Voter |
| Khorov, EVGENY | IITP RAS | Yes | Voter |
| Khude, Nilesh | NXP Semiconductors | Yes | Voter |
| Kim, Jeongki | LG ELECTRONICS | Yes | Voter |
| kim, junghun | Telecommunications Technology Association (TTA) | No | Non-Voter |
| Kim, Myeong-Jin | SAMSUNG | Yes | Voter |
| kim, namyeong | LG ELECTRONICS | Yes | Voter |
| Kim, Sang Gook | LG ELECTRONICS | Yes | Voter |
| Kim, Sanghyun | WILUS Inc. | Yes | Voter |
| Kim, Yongho | Korea National University of Transportation | Yes | Voter |
| Kim, Youhan | Qualcomm Incorporated | Yes | Voter |
| KIM, Youngjae | Telecommunications Technology Association (TTA) | No | Aspirant |
| Kim, Youn-Kwan | Sync Techno | Yes | Voter |
| Kinningham, Alan | I-PEX | No | Non-Voter |
| Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) | Yes | Voter |
| Kitazawa, Shoichi | Muroran IT | Yes | Voter |
| Klein, Arik | Huawei Technologies Co., Ltd | Yes | Voter |
| Klimakov, Andrey | Huawei Technologies Co., Ltd | Yes | Voter |
| KNECKT, JARKKO | Apple, Inc. | Yes | Voter |
| Ko, Geonjung | WILUS Institute | Yes | Voter |
| Kondo, Yoshihisa | Advanced Telecommunications Research Institute International (ATR) | Yes | Voter |
| Kondylis, George | Broadcom Corporation | No | Non-Voter |
| Koundourakis, Michail | Samsung Cambridge Solution Centre | Yes | Aspirant |
| Kozarev, Aleksandra | MaxLinear Corp | Yes | Potential Voter |
| Krieger, Ann | US Department of Defense | No | Non-Voter |
| Kumar, Manish | Marvell Semiconductor, Inc. | Yes | Voter |
| Kureev, Aleksey | IITP RAS | Yes | Voter |
| Kwak, Jin-Sam | WILUS Inc. | Yes | Voter |
| Kwon, Young Hoon | NXP Semiconductors | Yes | Voter |
| Lalam, Massinissa | SAGEMCOM SAS | Yes | Voter |
| Lan, Zhou | Broadcom Corporation | Yes | Voter |
| Lansford, James | Qualcomm Incorporated | Yes | Voter |
| Lee, Hong Won | LG ELECTRONICS | Yes | Aspirant |
| Lee, Hyeong Ho | Netvision Telecom Inc. | Yes | Voter |
| Lee, Il-Gu | Sungshin University | Yes | Potential Voter |
| Lee, Jae Seung | Electronics and Telecommunications Research Institute (ETRI) | No | Voter |
| Lee, Nancy | Signify | Yes | Voter |
| Lee, Wookbong | SAMSUNG | Yes | Voter |
| Lepp, James | None - Self-funded | Yes | Voter |
| Levitsky, Ilya | IITP RAS | Yes | Voter |
| Levy, Joseph | InterDigital, Inc. | Yes | Voter |
| Li, Bo | Northwestern Polytechnical University | Yes | Potential Voter |
| Li, Guoqing | Facebook | No | Voter |
| Li, Jialing | Qualcomm Technologies, Inc. | Yes | Voter |
| Li, Jianhui | Huawei Technologies Co., Ltd | Yes | Voter |
| Li, Qinghua | Intel Corporation | Yes | Voter |
| Li, Yanchun | Huawei Technologies France S.A.S.U | Yes | Voter |
| Li, Yiqing | Huawei Technologies Co., Ltd | Yes | Voter |
| li, yun | ZTE Corporation | No | Non-Voter |
| Li, Yunbo | Huawei Technologies Co., Ltd | Yes | Voter |
| Lim, Dong Guk | LG ELECTRONICS | Yes | Voter |
| lim, taesung | LG ELECTRONICS | Yes | Aspirant |
| Lin, Wei | Huawei Technologies Co., Ltd | Yes | Voter |
| Lin, Zinan | InterDigital, Inc. | Yes | Aspirant |
| Lindskog, Erik | SAMSUNG | Yes | Voter |
| LIU, CHENCHEN | Huawei Technologies Co., Ltd | Yes | Voter |
| Liu, Der-Zheng | Realtek Semiconductor Corp. | Yes | Voter |
| Liu, Jeff | Broadcom Corporation | Yes | Voter |
| Liu, Jianfei | Huawei Technologies Co., Ltd | Yes | Potential Voter |
| Liu, Jianhan | MediaTek Inc. | Yes | Voter |
| Liu, Yong | Apple, Inc. | Yes | Voter |
| Loginov, Vyacheslav | IITP RAS | Yes | Voter |
| Lopez, Miguel | Ericsson AB | Yes | Voter |
| Lorgeoux, Mikael | Canon Research Centre France | Yes | Potential Voter |
| Lou, Hanqing | InterDigital, Inc. | Yes | Voter |
| Lou, Hui-Ling | NXP Semiconductors | Yes | Voter |
| Lu, Kaiying | MediaTek Inc. | Yes | Voter |
| Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | Yes | Voter |
| LU, Yuxin | Huawei Technologies Co., Ltd | Yes | Aspirant |
| Lumbatis, Kurt | CommScope, Inc. | Yes | Aspirant |
| Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. | Yes | Voter |
| Luu, David | Juniper Networks, Inc. | No | Non-Voter |
| Lv, Lily | Huawei Technologies Co., Ltd | Yes | Voter |
| Lyakh, Mikhail | ON Semiconductor | Yes | Aspirant |
| Ma, Li | MediaTek Inc. | Yes | Voter |
| Ma, Mengyao | Huawei Technologies Co., Ltd | Yes | Voter |
| MADHAVAN, NARENDAR | Ericsson AB | No | Non-Voter |
| Madpuwar, Girish | Broadcom Corporation | Yes | Voter |
| Mai, Huiheng | Blu Wireless Technology Ltd | Yes | Aspirant |
| Malinen, Jouni | Qualcomm Incorporated | Yes | Voter |
| Mano, Hiroshi | Koden Techno Info K.K. | Yes | Voter |
| Marks, Roger | EthAirNet Associates | No | ExOfficio |
| Martinez Vazquez, Marcos | MaxLinear Corp | Yes | Voter |
| Mashimo, Hiroshi | Canon | No | Aspirant |
| Max, Sebastian | Ericsson AB | Yes | Voter |
| Mccann, Stephen | Huawei Technologies Co., Ltd | Yes | Voter |
| Mcconnell, Ray | Blu Wireless Technology Ltd | Yes | Potential Voter |
| McGuire, Colin | The MathWorks, Inc. | No | Non-Voter |
| Mehrnoush, Morteza | Facebook | Yes | Voter |
| MELZER, Ezer | Toga Networks, a Huawei company | Yes | Voter |
| Memisoglu, Ebubekir | Istanbul Medipol University; Vestel | Yes | Voter |
| Merlin, Simone | Qualcomm Incorporated | Yes | Voter |
| Minotani, Jun | Panasonic Corporation | Yes | Voter |
| Mirfakhraei, Khashayar | independent researcher and consultant | Yes | Voter |
| Moelker, Dignus-Jan | Broadcom Corporation | Yes | Potential Voter |
| Mohanty, Bibhu | Qualcomm Incorporated | Yes | Voter |
| Monajemi, Pooya | Cisco Systems, Inc. | Yes | Voter |
| Montemurro, Michael | Huawei Technologies Co., Ltd | Yes | Voter |
| Montreuil, Leo | Broadcom Corporation | Yes | Voter |
| Moon, Juseong | Korea National University of Transportation | Yes | Potential Voter |
| Moran, Ashley | IEEE Standards Association (IEEE-SA) | No | Non-Voter |
| Morioka, Hitoshi | Koden Techno Info K.K. | Yes | Voter |
| Motozuka, Hiroyuki | Panasonic Corporation | Yes | Voter |
| Mueller, Robert | Technische Universitaet Ilmenau | Yes | Voter |
| Munoz, Luis | Maxlinear Corp | No | Non-Voter |
| Murphy, Rick | vLogic, Inc. | Yes | Potential Voter |
| Myles, Andrew | Cisco Systems, Inc. | Yes | Voter |
| Nagai, Yukimasa | Mitsubishi Electric Corporation | No | Voter |
| nagata, kengo | Nippon Telegraph and Telephone Corporation (NTT) | Yes | Voter |
| Naik, Gaurang | Qualcomm Incorporated | Yes | Aspirant |
| Nakano, Hiroki | CAHI Corporation; Kyoto University | Yes | Voter |
| Nakano, Takayuki | Panasonic Corporation | No | Aspirant |
| Nam, Junyoung | Qualcomm Incorporated | Yes | Voter |
| Nandagopalan, SAI SHANKAR | Infineon Technologies | Yes | Voter |
| Nassiri Toussi, Karim | Broadcom Corporation | Yes | Potential Voter |
| Nezou, Patrice | Canon Research Centre France | Yes | Voter |
| Ng, Boon Loong | Samsung Research America | Yes | Aspirant |
| Nguyen, An | U.S. Department of Homeland Security | Yes | Voter |
| Nikolich, Paul | self employed/various | No | ExOfficio |
| Noh, Yujin | Newracom Inc. | Yes | Voter |
| Nurani Krishnan, Neelakantan | Qualcomm Incorporated | No | Voter |
| Oh, Hyun Seo | Electronics and Telecommunications Research Institute (ETRI) | Yes | Voter |
| Okada, Hiraku | Nagoya University | Yes | Voter |
| Omar, Hassan | Huawei Technologies Co., Ltd | Yes | Voter |
| Orlando, Christian | IEEE STAFF | No | Non-Voter |
| Orlik, Philip | Mitsubishi Electric Research Labs (MERL) | No | Aspirant |
| Orlovsky, Michael | Vayyar Imaging LTD. | Yes | Potential Voter |
| Orr, Stephen | Cisco Systems, Inc. | Yes | Potential Voter |
| Ouchi, Masatomo | Canon | Yes | Voter |
| Oyama, Satoshi | Association of Radio Industries and Businesses (ARIB) | Yes | Voter |
| Ozbakis, Basak | VESTEL Electronics Corp. | Yes | Voter |
| OZDEN ZENGIN, OZLEM | VESTEL | Yes | Potential Voter |
| Ozpoyraz, Burak | Vestel | Yes | Aspirant |
| Palayur, Saju | Maxlinear Inc. | Yes | Potential Voter |
| Palm, Stephen | Broadcom Corporation | Yes | Voter |
| Pan, Chun | Huawei Technologies Co., Ltd | Yes | Voter |
| Pare, Thomas | MediaTek Inc. | Yes | Voter |
| Paredes, Otilio | Maxlinear Corp | Yes | Aspirant |
| Parekh, Jatin | Arista Networks, Inc. | Yes | Voter |
| Park, Eunsung | LG ELECTRONICS | Yes | Voter |
| Park, Minyoung | Intel | Yes | Voter |
| Parsons, Glenn | Ericsson AB | Yes | ExOfficio |
| Patil, Abhishek | Qualcomm Incorporated | Yes | Voter |
| Patkar, Raghavendra | NI (National Instruments Corporation) | Yes | Aspirant |
| Patwardhan, Gaurav | Hewlett Packard Enterprise | Yes | Voter |
| Perahia, Eldad | Hewlett Packard Enterprise | Yes | Voter |
| Perkins, Richard | Qorvo | No | Voter |
| Perlmutter, Uri | Intel Corporation | No | Aspirant |
| PESIN, ANTHONY | InterDigital, Inc. | Yes | Voter |
| Petranovich, James | ViaSat, Inc. | Yes | Voter |
| petrick, Albert | Jones-Petrick and Associates, LLC. | Yes | Voter |
| Petry, Brian | Broadcom Corporation | Yes | Voter |
| Pettersson, Charlie | Ericsson AB | Yes | Voter |
| Pirhonen, Riku | NXP Semiconductors | Yes | Voter |
| porat, ron | Broadcom Corporation | Yes | Voter |
| Prabhakaran, Dinakar | Broadcom Corporation | Yes | Voter |
| Puducheri, Srinath | Broadcom Corporation | Yes | Voter |
| Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. | Yes | Voter |
| Qi, Emily | Intel Corporation | Yes | Voter |
| Rafique, Saira | Istanbul Medipol University, Vestel | Yes | Voter |
| Rai, Kapil | Qualcomm Incorporated | Yes | Voter |
| Raissinia, Alireza | Qualcomm Incorporated | Yes | Voter |
| Ranganath, Ashok | SAMSUNG | Yes | Potential Voter |
| Rantala, Enrico-Henrik | Nokia | Yes | Voter |
| Redlich, Oded | Huawei Technologies Co., Ltd | Yes | Voter |
| Rege, Kiran | Perspecta Labs | Yes | Potential Voter |
| Regev, Dror | Toga Networks (a Huawei Company) | Yes | Voter |
| REICH, MOR | Huawei Technologies Co., Ltd | Yes | Voter |
| Reshef, Ehud | Intel Corporation | No | Aspirant |
| Restuccia, Francesco | Northeastern University | No | Non-Voter |
| Rezk, Meriam | Qualcomm Incorporated | Yes | Voter |
| Riegel, Maximilian | Nokia | Yes | Voter |
| Rison, Mark | Samsung Cambridge Solution Centre | Yes | Voter |
| Robert, Joerg | TU Ilmenau, Fraunhofer IIS | Yes | Voter |
| Roder, Patricia | IEEE Standards Association (IEEE-SA) | No | Non-Voter |
| Rolfe, Benjamin | Blind Creek Associates | Yes | Potential Voter |
| Rosdahl, Jon | Qualcomm Technologies, Inc. | Yes | Voter |
| Roy, Richard | SRA International | Yes | Aspirant |
| Roy, Sayak | NXP Semiconductors | Yes | Voter |
| Sadeghi, Bahareh | Intel Corporation | Yes | Voter |
| Sahin, Onur | InterDigital, Inc. | No | Non-Voter |
| Sakamoto, Takenori | Panasonic Corporation | Yes | Voter |
| Sakoda, Kazuyuki | Sony Corporation | Yes | Voter |
| Salem, Mohamed | Huawei Technologies Co., Ltd | Yes | Voter |
| Salman, Hanadi | Istanbul Medipol University; VESTEL | Yes | Voter |
| Sambasivan, Sam | AT&T | Yes | Voter |
| Sand, Stephan | German Aerospace Center (DLR) | Yes | Voter |
| Sandhu, Shivraj | Qualcomm Incorporated | Yes | Voter |
| Sarris, Ioannis | u-blox | Yes | Voter |
| Sato, Naotaka | Sony Corporation | Yes | Voter |
| Schelstraete, Sigurd | ON Semiconductor | Yes | Voter |
| Schmidhammer, Martin | German Aerospace Center (DLR) | Yes | Potential Voter |
| Schneider, Christian | Ilmenau University of Technology - TU Ilmenau | No | Non-Voter |
| Scott, Andy | NCTA | Yes | Voter |
| Sedin, Jonas | Ericsson AB | Yes | Voter |
| Segev, Jonathan | Intel Corporation | Yes | Voter |
| Seok, Yongho | MediaTek Inc. | Yes | Voter |
| Serafimovski, Nikola | pureLiFi | Yes | Voter |
| Sethi, Ankit | NXP Semiconductors | Yes | Voter |
| Sevin, Julien | Canon Research Centre France | Yes | Voter |
| Shafin, Rubayet | Samsung Research America | Yes | Aspirant |
| Shah, Kunal | Itron Inc. | Yes | Voter |
| Shellhammer, Stephen | Qualcomm Incorporated | No | ExOfficio |
| Sherlock, Ian | Texas Instruments Incorporated | Yes | Voter |
| Shilo, Shimi | Huawei Technologies Co., Ltd | Yes | Voter |
| Sinn, Ulrich | Siemens AG | Yes | Voter |
| Smely, Di Dieter | Kapsch TrafficCom AG | Yes | Potential Voter |
| Smith, Graham | SR Technologies | Yes | Voter |
| Solaija, Muhammad Sohaib | Istanbul Medipol University; Vestel | Yes | Voter |
| Son, Ju-Hyung | WILUS Inc. | Yes | Voter |
| Sosack, Robert | Molex Incorporated | Yes | Voter |
| Srinivasa, Sudhir | NXP Semiconductors | Yes | Voter |
| Srinivasan, Shree Raman | Qualcomm Incorporated | Yes | Potential Voter |
| Stacey, Robert | Intel Corporation | Yes | Voter |
| Stanley, Dorothy | Hewlett Packard Enterprise | Yes | Voter |
| Startsev, Ivan | IITP | No | Voter |
| Stavridis, Athanasios | Ericsson AB | Yes | Voter |
| Stepanov, Max | Intel Corporation | Yes | Potential Voter |
| Stephens, Adrian | Self | No | Voter |
| Stott, Noel | Keysight Technologies | Yes | Voter |
| Strauch, Paul | Qualcomm Incorporated | Yes | Voter |
| Su, Hang | Broadcom Corporation | Yes | Voter |
| SU, HONGJIA | Huawei Technologies Co., Ltd | Yes | Voter |
| Suh, JUNG HOON | Huawei Technologies Co., Ltd | Yes | Voter |
| Sumi, Takenori | Mitsubishi Electric Corporation | Yes | Voter |
| Sun, Bo | ZTE Corporation | Yes | Voter |
| Sun, Li-Hsiang | Sony Corporation | Yes | Voter |
| sun, sheng | Huawei Technologies Co., Ltd | Yes | Voter |
| Sun, Yanjun | Qualcomm Incorporated | Yes | Voter |
| Sun, Yingxiang | Huawei Technologies Co., Ltd | Yes | Voter |
| Sundman, Dennis | Ericsson AB | No | Voter |
| SURACI, FRANK | U.S. Department of Homeland Security | Yes | Voter |
| Takai, Mineo | Space-Time Engineering | Yes | Voter |
| Tan, Danny | Huawei Technologies Co., Ltd | Yes | Voter |
| Tanaka, Yusuke | Sony Corporation | Yes | Voter |
| Teran, Jesus Gutierrez | IHP GmbH | Yes | Voter |
| Thakur, Sidharth | Apple, Inc. | No | Non-Voter |
| Thompson, Tom | IEEE STAFF | No | Non-Voter |
| Tian, Bin | Qualcomm Incorporated | Yes | Voter |
| Tian, Tao | Unisoc Comm. | Yes | Voter |
| Tolpin, Alexander | Intel Corporation | Yes | Potential Voter |
| Tomoyuki, Takada | Canon | Yes | Voter |
| Torab Jahromi, Payam | Facebook | Yes | Voter |
| Torrijo, Alejandro | MaxLinear Corp | Yes | Potential Voter |
| Trainin, Solomon | Qualcomm Incorporated | Yes | Voter |
| Tsai, Tsung-Han | MediaTek Inc. | Yes | Potential Voter |
| Tsodik, Genadiy | Huawei Technologies Co., Ltd | Yes | Voter |
| Tsujimaru, Yuki | Canon Inc. | Yes | Aspirant |
| Tugtekin, Omer | VESTEL Electronics Corp. | No | Non-Voter |
| Turkmen, Halise | Vestel | Yes | Voter |
| Uln, Kiran | Cypress Semiconductor Corporation | Yes | Voter |
| Umehara, Makoto | Canon | Yes | Voter |
| Unterhuber, Paul | German Aerospace Center (DLR) | Yes | Voter |
| Urabe, Yoshio | Panasonic Corporation | Yes | Voter |
| Van Nee, Richard | Qualcomm Incorporated | Yes | Voter |
| van Wageningen, Andries | Signify | No | Voter |
| Van Zelst, Allert | Qualcomm Incorporated | Yes | Voter |
| Varshney, Prabodh | Nokia | Yes | Voter |
| Venkatesan, Ganesh | Intel Corporation | Yes | Voter |
| Verenzuela, Daniel | Sony Corporation | Yes | Voter |
| Verma, Lochan | Apple, Inc. | Yes | Voter |
| Verma, Sindhu | Broadcom Corporation | Yes | Voter |
| Vermani, Sameer | Qualcomm Incorporated | Yes | Voter |
| Vicent Colonques, Santiago | Maxlinear Corp | Yes | Potential Voter |
| VIGER, Pascal | Canon Research Centre France | Yes | Voter |
| Vituri, Shlomi | Intel | No | Aspirant |
| Wang, Chao Chun | MediaTek Inc. | Yes | Voter |
| Wang, Hao | Tencent | Yes | Voter |
| Wang, Huizhao | Quantenna Communications, Inc. | Yes | Voter |
| Wang, Jiansong | Facebook | No | Non-Voter |
| Wang, Jue | ZTE Corporation | Yes | Aspirant |
| Wang, Lei | Futurewei Technologies | Yes | Voter |
| Wang, Pu | Mitsubishi Electric Research Labs (MERL) | No | Voter |
| Wang, Qi | Huawei Technologies Co., Ltd | Yes | Voter |
| Wang, Yi-Hsiu | Zeku | Yes | Voter |
| Want, Roy | Google | Yes | Voter |
| Ward, Lisa | Rohde & Schwarz | Yes | Voter |
| Wendt, Matthias | Signify | Yes | Voter |
| Wentink, Menzo | Qualcomm Incorporated | Yes | Voter |
| Wilhelmsson, Leif | Ericsson AB | Yes | Voter |
| Winser, Paul | Blu Wireless | Yes | Voter |
| Wizenberg, Reut | Vayyar Imaging | No | Aspirant |
| Wu, Chung | TP-Link Corporation Limited | No | Non-Voter |
| Wu, Hao | XGIMI Technology Co.Ltd | Yes | Aspirant |
| Wu, Kanke | Qualcomm Incorporated | Yes | Voter |
| Wu, Tianyu | Apple, Inc. | Yes | Voter |
| Wullert, John | Perspecta Labs | Yes | Voter |
| Xiao, Bo | ZTE Corporation | Yes | Aspirant |
| Xin, Liangxiao | Sony Corporation | Yes | Voter |
| Xin, Yan | Huawei Technologies Co., Ltd | Yes | Voter |
| Xue, Qi | Qualcomm Technologies, Inc. | Yes | Voter |
| Xue, Ruifeng | Cisco Systems, Inc. | Yes | Voter |
| YAGHOOBI, HASSAN | Intel Corporation | Yes | Voter |
| Yan, Aiguo | zeku | Yes | Voter |
| Yan, Zhongjiang | Northwestern Polytechnical University | Yes | Voter |
| Yang, Bo | Huawei Technologies Co., Ltd | Yes | Voter |
| Yang, Jay | Nokia | Yes | Voter |
| Yang, Lin | Qualcomm Incorporated | Yes | Voter |
| Yang, Mao | Northwestern Polytechnical University | Yes | Voter |
| YANG, RUI | InterDigital, Inc. | Yes | Voter |
| Yang, Steve TS | MediaTek Inc. | Yes | Voter |
| Yang, Xun | Huawei Technologies Co., Ltd | Yes | Voter |
| Yang, Yunsong | Futurewei Technologies | Yes | Voter |
| Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) | Yes | Voter |
| Yarkoni, Sol | Vayyar ltd. | Yes | Aspirant |
| Yee, James | MediaTek Inc. | Yes | Voter |
| Yee, Peter | NSA-CSD | Yes | Voter |
| yi, yongjiang | Futurewei Technologies | Yes | Voter |
| yim, choon sik | RCN | No | Non-Voter |
| Yokoyama, Takahiro | Association of Radio Industries and Businesses (ARIB) | Yes | Aspirant |
| Yoo, Homin | LG ELECTRONICS | Yes | Aspirant |
| Yoon, Jeonghwan | LG ELECTRONICS | Yes | Aspirant |
| Yoshikawa, Yuki | Canon | Yes | Voter |
| Young, Christopher | Broadcom Corporation | Yes | Voter |
| Yu, Heejung | Korea University | Yes | Potential Voter |
| Yu, Jian | Huawei Technologies Co., Ltd | Yes | Voter |
| Yuan, Fangchao | Huawei Technologies Co., Ltd | Yes | Potential Voter |
| Zaman, Malia | IEEE Standards Association (IEEE-SA) | No | Non-Voter |
| ZEGRAR, Salah Eddine | Istanbul Medipol University; Vestel | Yes | Voter |
| Zein, Nader | NEC Corporation | Yes | Potential Voter |
| Zeng, Ruochen | NXP Semiconductors | Yes | Voter |
| Zeng, Yan | Huawei Technologies Co., Ltd | Yes | Voter |
| Zhang, Hongyuan | NXP Semiconductors | Yes | Voter |
| ZHANG, JIAYIN | Huawei Technologies Co., Ltd | Yes | Voter |
| Zhang, Meihong | Huawei Technologies Co., Ltd | Yes | Voter |
| Zhang, Yan | NXP Semiconductors | Yes | Voter |
| Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd | Yes | Aspirant |
| Zhou, Yifan | Huawei Technologies Co., Ltd | Yes | Voter |
| Zhu, Peiying | Huawei Technologies Co., Ltd | Yes | Aspirant |
| Zou, Tristan | Qualcomm Incorporated | Yes | Voter |
| Zuo, Xin | Tencent | No | Voter |

**Annex B : Working Group Officers**

**Working Group**

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| --- | --- | --- |
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| Andrew Myles (Cisco) | Coexistence Standing Committee Chair | +61 418 656587 [amyles@cisco.com](mailto:amyles@cisco.com) |

**Task Groups**

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| --- | --- | --- |
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| Alfred Asterjadhi  (Qualcomm) | TGbe Chair  Extremely High Throughput (EHT) | aasterja@qti.qualcomm.com |
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| Mark Hamilton  (Ruckus) | TGbh Chair  Random and Changing MAC address (RCM) | +1 (303) 818-8472 [mark.hamilton2152@gmail.com](mailto:mark.hamilton2152@gmail.com) |
| Carol Ansley  (Self) | TGbi Chair  Random and Changing MAC address (RCM) | [carol@ansley.com](mailto:carol@ansley.com) |
| Michael Montemurro (Huawei Technologies Co., Ltd) | TGme Chair 802.11 revision project - P802.11REVme | [montemurro.michael@gmail.com](mailto:montemurro.michael@gmail.com) |

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| --- |
|  |

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

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

**Ad-Hoc Groups (AHG)**

|  |  |  |
| --- | --- | --- |
| Name (Affiliation) | Position | Contact Details |
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**Liaison Officials to non IEEE-802 organizations**

|  |  |  |
| --- | --- | --- |
| Name (Affiliation) | Position | Contact Details |
| Peter Yee (Akayla) | Liaison to IETF (Internet Engineering Task Force) | [peter@akayla.com](mailto:peter@akayla.com) |
| Ian Sherlock (Texas Instruments Inc.) | Liaison to WFA (Wi-Fi Alliance) | +1-972-995-2011 [isherlock@ieee.org](mailto:isherlock@ieee.org) |
| John Kenney  (Toyota) | Liaison to IEEE 1609 | [jkenney@us.toyota-itc.com](mailto:jkenney@us.toyota-itc.com) |

**Liaison Officials to IEEE-802 organizations**

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| Name (Affiliation) | Position | Contact Details |
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| Tuncer Baykas (Istanbul Medipol Universitesi) | Liaison to IEEE 802.19 | [tbaykas@ieee.org](mailto:tbaykas@ieee.org) |
| Tim Godfrey (Electric Power Research Institute) | Liaison to IEEE 802.24 | +1 (650) 855-8584 (office) [tim.godfrey@ieee.org](mailto:tim.godfrey@ieee.org) |

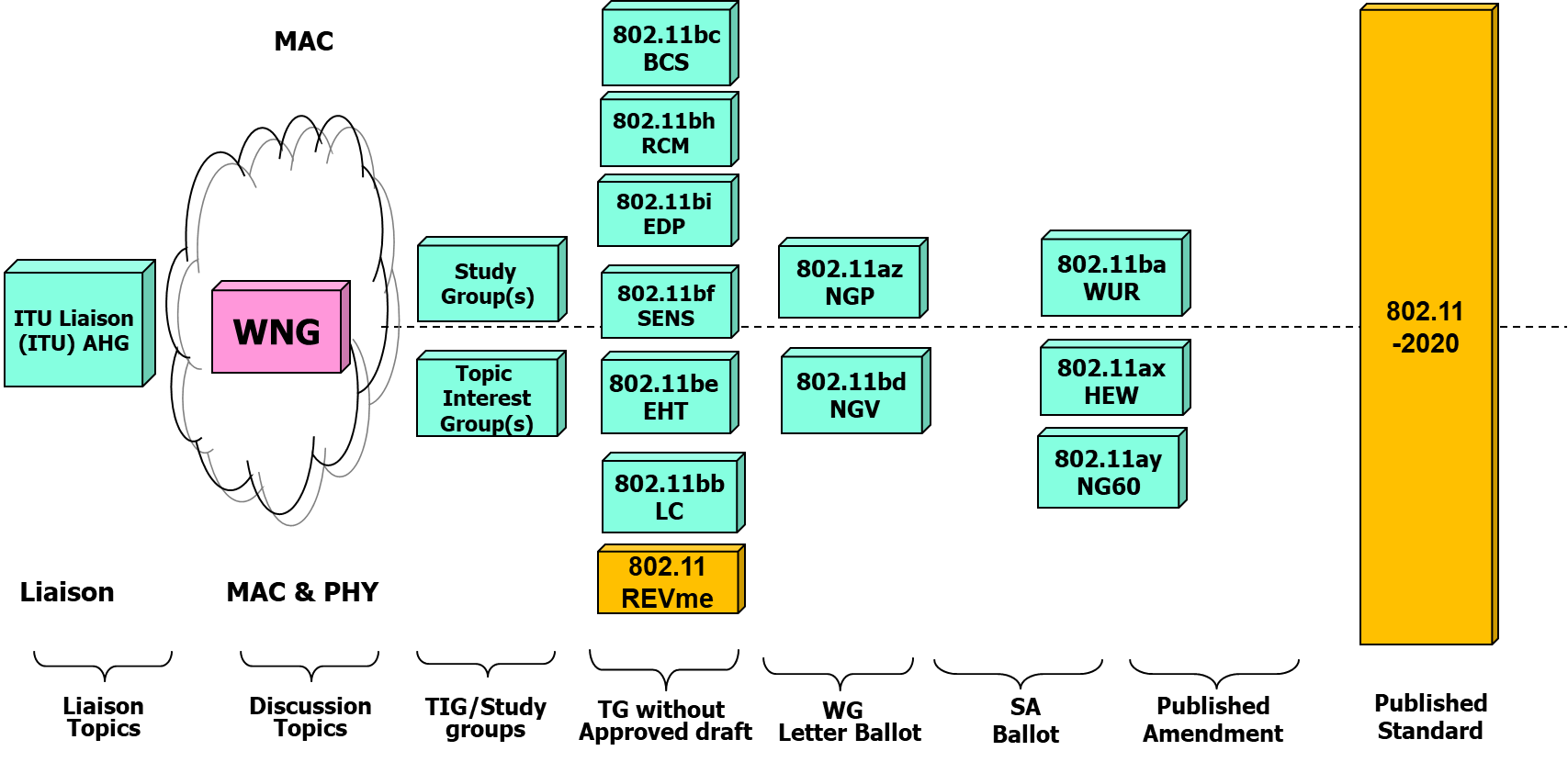
**Annex C : Minutes**

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 | 21-0388r1 |
| TGme | TG | 21-0xxxr0 |
| TGaz | TG | 21-0422r0 |
| TGbb | TG | 21-0446r0 |
| TGbc | TG | 21-0404r0 |
| TGbd | TG | 21-0454r0 |
| TGbe | TG | 21-0436r2 |
| TGbf | TG | 21-0476r0 |
| TGbh | TG | 21-0460r1 |
| TGbi | TG | 21-0437r0 &  21-0466r1 |
| AANI | SC | 21-0521r0 |
| COEX | SC | 21-0xxxr0 |
| WNG | SC | 21-0412r0 |
| JTC 802 | SC | 21-0549r1 |
| ARC | SC | 21-0406r0 |
| ITU | AH | 21-0204r0 |
| PAR | SC | 21-0359r0 |

**Annex D : Revisions and Standards Pipeline**

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**IEEE 802.11 Standards Pipeline**

End.