IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Minutes of the IEEE P802.11 Full Working Group | | | | |
| Date: 2016-05-16 | | | | |
| Author(s): | | | | |
| Name | Company | Address | Phone | email |
| Stephen McCann | BlackBerry Ltd | 200 Bath Road, Slough, Berkshire, SL1 3XE, UK | +44 1753 667099 | smccann@blackberry.com |

Abstract

This document constitutes the minutes of the IEEE 802.11 full working group for the May 2016, Waikoloa, Hawaii, USA meeting.

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

IEEE 802 Wireless Interim Meeting

Hilton Waikoloa

Waikoloa, HI USA

May 16 - 19, 2016

**Monday, 16 May 2016**

**8:01** 802.11, 802.15, 802.16, 802.18, 802.19, 802.21, and 802.24 Chairs called the joint meeting to order. IEEE 802.15 attendance is included as Annex A.

General announcements:

* Moment of Remembrance for Art Astrin 1945-2016
* No photography, no audio recording
* Social – Reception (courtesy of Hilton) on Wednesday 18:00 – 19:30
* Don’t forget, book your room and register for July’s session

Straw Poll of new attendees: 0

**8:08**  IEEE patent policy

802.15 WG chair read the IEEE-SA instructions and displayed the four slides explaining patent policy and informed the attendees that additional information could be found on the PatCom web site: ([**http://standards.ieee.org/board/pat/pat-slideset.ppt**](http://standards.ieee.org/board/pat/pat-slideset.ppt)**)**.

802.15 WG chair read IEEE anti-trust policy.

**8:12** Wireless and IMAT announcements by Nick (Verilan) ([15-16-0045-00](https://mentor.ieee.org/802.15/dcn/16/15-16-0045-00-0000-opening-plenary-information-2016.pptx))

**8:12** WG15 Chair informed the group that the Wireless Chairs Standing Committee (WCSC) met yesterday, Sunday. Chair noted that this is an open meeting, all are encouraged to attend.

**8:13** Financial report by Jon Rosdahl (Qualcomm) docs [11-16-00525-00](https://mentor.ieee.org/802.11/dcn/16/11-16-0525-00-0000-treasurer-report-may-2016-waikoloa.pptx),   
[15-16-0366-00](https://mentor.ieee.org/802.15/dcn/15/15-16-0366-00-0000)

Total liabilities and equity $635,844.73

**8:17** Review future sessions (document # 15-16-0339-02)

* **July 24-29, 2016, Grand Hyatt, San Diego, CA, USA,** *802 Plenary Session*
* **September 11-16, 2016, Marriott Warsaw, Warsaw, Poland,** 802 Wireless Interim Session
* **November 6-11, 2016, Grand Hyatt San Antonio, San Antonio, TX, USA,** *802 Plenary Session.*
* **January 15-20, 2017, Hyatt Regency Atlanta, Atlanta, GA, USA, 802** *Wireless Interim Session.\**
* **March 12-17, 2017, Hyatt Regency Vancouver,** *802 Plenary Session.*
* **May 13-18, 2017, Daejeon Convention Center, Daejeon, Korea (TBC),***802 Wireless Interim Session.*
* **July 9-14, 2017, Estrel Hotel and Convention Center, Berlin, Germany,** 802 Plenary Session**.**
* **September 10-15, 2017, Hilton Waikoloa Village, Kona, HI, USA,** 802 Wireless Interim Session.\*
* **November 5-10, 2017, Caribe Hotel and Convention Center, Orlando, FL, USA,** 802 Plenary Session
* **January 14-19, 2018, Hotel Irvine, Irvine, California, 802 Wireless Interim Session.\***

**8:20 Working Group Updates**

802.11 by Adrian Stephens (Intel), (document [11-16-0495-01](https://mentor.ieee.org/802.11/dcn/16/11-16-0495-01-0000-may-2016-wg-agenda.xlsx))

* 372 voters

802.15 by B Heile (document [15-16-0339-02](file:///C:\Users\jr05\AppData\Local\Temp\15-16-0339-02-0000-may-2016-802-15-wg-agenda-graphic))

* 103 voters
* TG3d: 100G (not meeting this week)
* TG3e: HRCP (High Rate Close Proximity)
* TG4s: SRU (Spectrum Resource Utilization)
* TG4t: High(er) rate amendment
* TG4u: India 865 Band Phy (IBP) amendment
* TG4v: Regional Sub-GHz Bands adds and updates
* TG 7r1: Optical Wireless Communications
* TG8: PAC (Peer Aware Communications) – going to WG letter ballot
* TG10: L2R (Layer 2 Routing) – going to Sponsor Ballot
* TG12 Upper Layer Interface (ULI) for 802.15.4
* IG IETF
* IG Dependability
* IG High Rate Rail Communications
* IG THz
* IG 15.4 Guide (on hold)

802.16 by R Marks

* No active projects, but the 802.16s PAR has been forwarded by EC

802.18 by R Kennedy

* discussing meeting at FCC, FCC 2nd report and order on 5 GHz, ETSI 300 328, et al, Ofcom release on consultation for 5 GHz band

802.19 S Shellhammer (19-16-0080-01)

* 32 voting members
* 3GPP Liaison
  + have not heard back from BRAN
* Possible additional liaisons
  + NYC
  + Send liaison to WiFi Alliance
* TG1a has completed initial draft
* SG formation: Wireless Automotive Coexistence

802.21 Subir Das (21-16-0068-00)

* 22 voting members
* TG21m – revision project – passed Letter Ballot, working on comments
* TG21.1 –use cases and services – passed Letter Ballot, working on comments

802.24 Tim Godfrey

* 37 voters
* Task Groups
  + 802.24.1 Smart Grid TG Tim Godfrey
  + 802.24.2 IoT TG Chris DiMinico
* working on sub-GHz whitepaper

**AoB**

* EC 5G update by R Marks **(**[**802-ec/dcn/16/ec-16-0061-06-5GSG-5g-sc-conference-call-agenda.pdf**](https://mentor.ieee.org/802-ec/dcn/16/ec-16-0061-06-5GSG-5g-sc-conference-call-agenda.pdf)**)**
  + Met at Macau
  + Report about cost and benefits on different approaches to 5G standardization

**8:42** Joint meeting adjourned

**IEEE 802.11 Opening Plenary, Monday 16th May 2016**

Presiding chair: Adrian Stephens (Intel) opened the meeting at 09:00 Hawaii Aleutian Standard Time (HAST) and declared Quorum for the Session.

2nd Vice-chair (VC2): Dorothy Stanley Hewlett Packard Enterprise

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

Secretary: Stephen McCann BlackBerry Ltd

There are 372 voting members and 11\*\* Ex Officio voters of IEEE 802.11

There were 167 people in the room

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

1. **Notices** (11-16-0496r0)
   1. No photographs at this meeting and please turn your mobiles to vibrate. Please note that this slide has been updated regarding members of the press.
   2. Chair: Are there any members of the press present.
      1. None
2. **Approve/modify joint opening agenda** (11-16-0495r1)
   1. Chair: This is a summary of all room allocations for the week.
   2. Are there any more modifications required at this moment?
   3. Comment (C): Please can I add a TGax ad-hoc session for this evening.
   4. VC1: Yes, that should be possible
   5. C: I’ve noticed that the propriety agenda item appears twice on Wednesday and Friday. Is that an error?
   6. Chair: One is a discussion item and the other is a summary.
   7. C: I notice that TGaz and TGax clash all week. Can some other groups be moved to allow members to participate in them as separate meetings?
   8. Chair: Ok. I suggest we approve the agenda and then you may ask to have a motion to amend.
   9. **Move to approve the agenda 11-16-0495r1**
      1. Moved: Jon Notor, 2nd: Marc Emmelmann
      2. For: 92, Against: 1, Abstain: 6 (Motion passes)
3. **March 2016 WG Minutes**
   1. **Move to approve the Macau March 2016 minutes document 11-16-0293r1**
   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 newcomer’s session at 10:30.
   3. The room is Kona 1.
5. **Call for essential Patents** (11-16-0528r0)
   1. VC1: read out the current PatCom rules and then called for essential patents information, as shown by:
   2. <http://standards.ieee.org/board/pat/pat-slideset.ppt>
      1. There were no issues raised regarding the call for essential patents. There was no response to the call for essential patents.
   3. VC1: read out other policies and procedures for the meeting.
   4. VC1: There are also several current documents which describe the policies and procedures. Note that there were a few changes made in November 2015.
   5. No questions
6. **Announcements**
   1. **Liaisons (11-16-0496r0 slide #4)**
      1. Chair: This is a summary of the current liaisons.
      2. There has been a liaison received from 3GPP, which I understand will be dealt with by IEEE 802.19.
      3. IEEE 802.19 chair: This will be dealt with in PM2.
      4. Chair: There is also an ongoing liaison from NGNM and there will be a meeting in PM1 today, to draft a response (from IEEE 802.11).
   2. **Other information and agendas for this meeting (slide #5)**
      1. Chair: This is information about the other IEEE 802.11 and IEEE 802 group meeting logistics for this week. Please note the joint meetings and reciprocal credit with some of the other IEEE 802 groups.
      2. Question (Q): Does the reciprocal credit also apply to the 5G ad-hoc this evening?
      3. Chair: yes, I think that’s quite reasonable to arrange.
   3. **TGaj chair**
      1. Chair: The TGaj has stood down, so this week the vice-chair (Jiamin CHEN) will chair the meetings and he would like to stand for the chair position later this week.
   4. **Meeting logistics (11-16-0536r0 slide #4)**
      1. VC1: this slide deck shows information about future meetings and logistics this week. Please note that Comic Con will be meeting in San Diego the week before the IEEE 802.11 meeting in July. So please book your rooms now in the hotel.
      2. There is also a separate social event, which requires a separate payment of $24.99.
      3. The registration for the September 2016 meeting will open in about 10 days’ time.
   5. **Recording Attendance (slide #12)**
      1. VC1: Please remember to record your attendance for each 2 hour slot during the week.
   6. **WG Documents (slide #11)**
      1. VC1: If you want to synchronize all the documents on mentor, please use the local server and not the external link.
   7. **Social and Catering options (slide #15)**
      1. VC1: Please note that the social this week is being sponsored by the Hilton hotel itself. Guests are also invited along, although they do require a guest badge.
7. **Status of all groups** (11-16-0496r0)
   1. **Sub-Group Status**
      1. Chair: this summarizes all the IEEE 802.11 sub-groups including officers.
      2. Slide #11 indicates the working group appointed positions.
      3. There are additionally some changes to secretaries and editors as shown in yellow.
      4. Slide #16 shows that there has been a letter ballot and a comment collection since the March 2016 meeting.
8. **Group Summaries** (11-16-0527r1)
   1. Special notes were mentioned for the following groups:
   2. **ANA**
      1. There have been some new assignments since the March 2016 meeting.
   3. **Editor’s meeting**
      1. Tomorrow morning at 7.00am, including the ANA status, style guides and numbering situation.
      2. Q: What’s the “new amendment style” discussion
      3. Answer (A): It’s a discussion within the editor’s group to maintain consistency across amendments going forward.
   4. **PAR**
      1. This group is not meeting this week, but this is a reminder that any upcoming PARs do have deadlines to meet.
   5. **WNG**
      1. There are 3 presentations currently scheduled this week (Tuesday AM1), although there may be a 4th.
   6. **TGaj**
      1. A call for a new vice-chair position may be considered during the week.
   7. **TGax**
      1. There were 2919 comments received from the comment collection process which will be dealt with this week. Of these there are 1822 technical comments.
   8. **LRLP (Long Range Low Power) TIG**
      1. There are 4 meetings this week and some discussions about how to move forward to create a study group.
   9. **5G Ad-Hoc**
      1. This meeting will consider IEEE 802.11 issues regarding 5G, which will then be taken to the IEEE 802 5G EC SC meeting on Friday afternoon this week.
9. **Recess**
   1. Meeting recessed at 10:12 HAST.

**Wednesday, 18th May 2016**

**IEEE 802.11 Mid-Week Plenary**

Presiding chair: Adrian Stephens (Intel) opened the meeting at 10:30 HAST.

168 people present.

1. **Approve/modify joint opening agenda** (11-16-0495r3)
   1. Chair: There are a couple of minor changes to the agenda about the proprietary of motions and a new study group about a “wake up receiver”
   2. **Move to approve the revised agenda 11-16-0495r4.**
      1. Moved: Stuart Kerry, 2nd: Al Petrick
      2. No objection to approving the agenda by unanimous consent.
2. **Call for Essential Patents** (11-16-0497 slide #4)
   1. Chair: additionally, I would like to point out that these patent slides apply to everyone within the room.
   2. Also the Call for Essential Patents from Monday still applies
   3. No statements from anyone.
3. **CAC**
   1. Reminder about 19.30 HAST meeting on Thursday. The purpose of this meeting is to prepare for the Friday closing plenary.
4. **Photo**
   1. There will be a group photo on the grand steps when the meeting recesses at 12.30pm
5. **Share Ride**
   1. This is available on the IEEE 802.11 home page for those who wish to share rides back to the airport.
6. **Social**
   1. The first hour is an open bar and so you will not require your drink ticket after all. Please pick up guest badges for all your guests.
7. **IETF Liaison** (11-16-0531r0)
   1. Recent Items of note:
      1. Multicast
      2. SmartGrid
      3. Captive Portals
      4. Radius extensions
      5. Home networking
      6. Security
      7. DNS service discovery
      8. Network based mobility
      9. IP multicast
      10. Deterministic Networking
   2. The next member meeting is scheduled for July 17 - 22, 2016 in Berlin.
   3. Q: regarding slide #5, does the proxy solution for discovery in IPv6 possibly affect the Proxy ARP solution in IEEE 802.11?
   4. A: yes, I think so.
8. **Response to 3GPP Liaison on eLWA measurements** (11-16-0694r3)
   1. This is a response to a liaison received from 3GPP that has been prepared by TGay.
   2. C: The addressee is incorrect. I can provide an update if you wish
   3. Chair: Ok, thanks.
9. **IEEE 802.11 input to 802 EC 5G SC** (11-16-0723r0)
   1. This is a summary of the discussion on Monday evening this week. It has not been endorsed by IEEE 802.11.
   2. There was a strong opinion not to do an IEEE 802 5G project, as the only way forward is the IMT 2020 external proposal.
   3. No questions
10. **Meeting slot changes**
    1. Chair: TGay do not require Thursday AM1
    2. LRLP has adjourned for the week.
    3. Chair: I will post an updated agenda with these meetings removed.
11. **Feedback from the EC on role of SIGs** (11-16-0497r0 slide #6)
    1. Chair: This is some feedback from the EC on the topic of Special Interest Groups.
    2. C: regarding slide #11, the statements are very clear regarding voting. However, the technical information which provides members with the knowledge to vote is not always provided.
    3. C: Many issues are being discussed in external bodies, so that submissions are appearing which are very extensive and complex. The SIGs are effectively replacing ad-hoc meetings which used to be open to all IEEE 802.11 members. I’m also concerned about the future of IEEE 802.11 as it may just become a place to state a yes or no to incoming submissions without any debate.
    4. C: I think that the rules have not changed, but the behavior has. I think the conclusion about coercion in the last slide is not accurate. The example of what occurred within IEEE 802.20 resulted in rule changes. IEEE 802.11 is not a rubber stamping organization and I think IEEE 802.11 has wandered away from best practice.
    5. Q: Do the sub-group chairs have to determine whether members can vote or not.
    6. Chair: The only thing that can be done is to have a role call vote. It is really up to peoples own personal integrity as to whether they vote or not.
    7. C: Some decisions and votes in some TGs don’t make any sense until you realize that a SIG is operating in the background. There’s no full technical debate. However, I don’t know what the next steps are, as the rules appear to be ok.
    8. C: In some groups, the chair is restricting technical discussion, which should be stopped.
12. **Abstain options in letter ballots** (11-16-0528r1)
    1. VC2: This is some material on the issue of the Abstain options in letter ballots.
    2. Please can you see the VC2 if you have any proposed changes.
    3. Q: If a letter ballot reaches 75%, if I vote on a later draft, would I still be restricted to vote on changes?
    4. A: There is not distinction between comment on changes and comments on the whole document. However, the task group may reduce the scope of the ballot. However, this is advice or a recommendation.
    5. Chair: The proposed rule change would give members a longer time to respond to a series of ballots. I don’t think it will change the scope of the comments themselves.
    6. VC1: This document discusses how ballots and voting interact. Remember that re-circulation ballots are really just part of “a ballot” according the rules. This is how IEEE 802.1 and 802.3 behave and we’re moving towards the same behavior.
    7. Q: So, you now will not know until the last re-circulation letter ballot whether a member has lost their voting rights or not?
    8. A: Yes.
    9. Q: Additionally, the definition of consecutive letter ballots now changes?
    10. A: Yes, consecutive letter ballots are now “project ballots”.
    11. Action: consider the definition of consecutive letter ballot.
13. **Change to Policy and Procedures** (11-16-0561r2, 11-16-0696r0)
    1. This submission is regarding how motions follow the interpretation of Robert’s Rules resulting in a possible change to the Policies and Procedures.
    2. The presenter emphasizes that they do not have any personal issues with any of the current IEEE 802.11 officers.
    3. C: Your document change should include task group chairs.
    4. Chair: I’ll have to look at the IEEE 802 P&Ps regarding task group chairs. I think this could be added to the IEEE 802.11 Operations Manual.
    5. C: I thought we were following Robert’s Rules, so this change is required.
    6. Q: The text seems to imply that a motion to re-consider is no longer allowed.
    7. A: Yes, you can’t make the same motion twice.
    8. Q: So, what so we use for guidance?
    9. A: Robert’s Rules is the guide, but the chair can overrule this.
    10. Q: Why don’t you have a motion to use Robert’s Rules as guidance?
    11. A: I think this would be too difficult for the IEEE 802 EC to accept.
    12. **Motion**
    13. **“The 802.11 WG directs its chairman to bring the following motion to the 802 EC as soon as such a motion would be in order and to vote in the affirmative on the motion:**
    14. **Moved: to make changes to the IEEE 802 LMSC Working Group Policies and Procedures as indicated by document 11-16-0696-00-0000-changes-to-p-and-p”**
    15. Moved: Dan Harkins, Second: Stuart Kerry
    16. C: I speak in favor of this motion as I do not want to see motions re-appearing through a week. I do not want to see motions being re-considered.
    17. C: I speak against, 1) it adds a lot of problems about Robert’s Rules, 2) a lot of the text is ambiguous. I think members should trust the chair.
    18. C: I speak in favor. However, it would be useful to determine if this motion will go to the IEEE 802 EC.
    19. C: I speak against. In large groups, it may not work well, as the chairs will be subject to more difficult decisions.
    20. C: As there are 5 parallel tracks, motions currently can be re-run at different times producing considerably different results.
    21. C: I speak against. This topic is a good one, but I don’t think the wording is exactly correct and requires some more thought and time.
    22. C: I understand that this motion will go to the IEEE 802 EC. So is it for discussion at the EC and what should they do with it?
    23. Y: 21, N: 30, A: 67 (Motion fails)
14. **ePoll contribution to IEEE 802.11 results** (11-16-0497r0)
    1. Chair: These are the results of the ePoll on how much time members spend on IEEE 802.11 activities. The average is 38% for each member
    2. No questions
15. **“Wake Up Radio” Study Group** (11-16-0722r1)
    1. This is a proposal for a new Wake Up Radio (WUR) study group.
    2. Q: I’d like to know if there is a SIG working on this?
    3. Chair: That question is out of order.
    4. Presenter: I am not going to answer that.
    5. **Motion**
    6. **Request approval by IEEE 802 LMSC to form an 802.11 Study Group to investigate the requirements and feasibility of the wake-up receiver (WUR) technique as described in doc 11-15/1307r1 with the intent of creating a PAR and CSD.**
    7. Moved: Minyoung Park, Seconded: Shahrnaz Azizi
    8. Q: this is good idea, but if the work is going to be done outside of the IEEE 802.11, please don’t waste members time.
    9. Y: 84, N: 14, A: 24 (Motion passes)
    10. Chair: The EC will entertain an email motion about this topic, so if that email motion passes, the study group will meet at the July 2016 meeting and there I need to find a chair pro-tem.
16. **Any Other Business**
    1. Meeting recessed at 12:23 HAST

**Friday, 20th May 2016**

**IEEE 802.11 Closing Plenary**

Call to order at 08:00 HAST by Adrian Stephens (Intel Corporation).

64 people present in the room.

1. **Agenda** (11-16-0495r6)
   1. Chair: There have been some changes due to the addition of extra items which were not presented earlier in the week, for example a liaison and a report about LRLP.
   2. C: I encourage people to use the share ride link on the IEEE 802.11 front web page.
   3. **Adopt the changes to the agenda as shown in 11-16-0495r6**
   4. Moved: Jon Rosdahl, 2nd: Richard Kennedy
   5. No objection to approving by unanimous consent.
2. **Call for Essential Patents**
   1. Call for Essential Patents and Letters of Assurance (LoA)
   2. No statements
   3. No questions
3. **Announcements**
   1. **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 Chair’s schedule for the chair’s committee meetings (CAC), which are on June 20th and July 18th 2016 at noon ET.
   2. **Letters of Assurance (LoA)** (11-16-0497r0 slide #17)
      1. Chair: please remember about the LoA requirements.
   3. **IEEE Store and ISO SCG** (11-16-0497r0 slide #18)
      1. Chair: Please can everyone review the state of the store and drafts going to ISO SCG
      2. No questions
   4. **LRLP TIG**
      1. Chair: I’ve received a message from the LRLP TIG that is has concluded its work and I’d like to thank Tim Godfrey for all his work running this group.
      2. No questions
   5. **Liaison to 3GPP**
      1. There is an urgent requirement to send a liaison over this weekend to 3GPP from IEEE 802.19. It is document 19-16-0077r3.
      2. No questions
4. **Current Venues** (11-16-0526r2 slide #20)
   1. **Straw Poll: How many people would like to come back to this venue?**
   2. Y: 46, N: 12
   3. VC1: We will be here again in September 2017 and 2018. Also note that the registration for the Warsaw meeting in September 2016 will be open in a couple of weeks’ time.
5. **Upcoming Venues** (11-16-0526r2 slide #21)
   1. VC1: This slide shows the future interim locations. Other slides show the upcoming plenary sessions.
6. **Treasury Report** (11-16-0525r0)
   1. VC1: This is the treasurer’s report.
   2. This week the budget has been kept as low as possible and has been very good value for money. The final figures for this week will be available later in the year.
   3. The Warsaw meeting in September 2016 is a little bit more expensive than this meeting, but has been budgeted correctly.
7. **Documentation & Attendance** (11-16-0530r1 slide #3)
   1. These are the usual attendance statistics for this week and IEEE 802.11ax is by far the largest project this week.
   2. There is also a chart of the number of document uploads by meeting. It’s typically running at about 500-600 documents per session.
   3. C: Thank you for this. This shows how many document we are working on per year. 3GPP RAN does about 8500 documents per year and this shows that IEEE 802.11 is working at a similar rate.
   4. Q: This is just for IEEE 802.11
   5. A: Yes
8. **WG Committee Reports** (11-16-0530r1)
   1. **Technical editor (slide #8)**
      1. There will be a Mandatory Draft Review of the 11aq draft over the next few weeks.
      2. No questions
   2. **ARC Standing Committee** (**slide #15)**
      1. Slide #19 should be a joint meeting with TGak and not TGaq
      2. No questions
   3. **IEEE 802.11/15 Regulatory (REG) Standing Committee** (**slide #23)**
      1. No questions
   4. **WNG Standing Committee (slide #28)**
      1. There were three presentations this week, as shown in slide #30
      2. No questions
   5. **JTC1 Standing Committee** (**slide #31)**
      1. No questions
   6. **TGmc (slide #36)**
      1. Currently working to complete in September 2016
      2. No questions
   7. **TGah (slide #42)**
      1. No questions
   8. **TGai (slide #48)**
      1. No questions.
   9. **TGaj (slide #58)**
      1. It has been decided to no longer have separate TGaj based interims in China, as this extra work is no longer required outside of the normal IEEE 802.11 face to face meetings.
      2. Chair: I would like to also thank Jon Rosdahl and Dorothy Stanley for travelling to China to help the TGaj based interim meetings.
      3. No questions.
   10. **TGak (slide #66)**
       1. No questions
   11. **TGaq (slide #62)**
       1. Q: There is an issue, as the TG should approve the MDR before moving to the re-circulation letter ballot.
       2. A: Ok. So perhaps we should have a motion to allow a TGaq teleconference to authorize approval of the revised draft based on the output of the MDR.
   12. **TGax (slide #74)**
       1. There will be an update to the timelines
       2. No questions
   13. **TGay (slide #80)**
       1. No questions
   14. **TGaz (slide #84)**
       1. No questions
   15. **LRLP TIG (slide #91)**
       1. No questions
9. **Liaison Reports**
   1. **IEEE 802.18**
      1. Working on a 5 GHz document input, in document18-16-0032r0.
   2. **IEEE 802.24** (11-16-0530r1, slide #94)
      1. C: regarding the student papers, the one paper that was submitted was due to IEEE 802 hosting one their professors.
10. **Working Group Motions (Old Business)** (11-16-529r2)
    1. **TGaj chair (slide #7)**
       1. **Move to Affirm Jiamin Chen as TGaj chair.**
       2. Moved: Jon Rosdahl, Second: Donald Eastlake
       3. No objection to approving by unanimous consent.
    2. **Reaffirm task group chairs (slide #7)**
       1. **Move to confirm the Chairs and Vice-Chairs shown below**

|  |  |  |  |
| --- | --- | --- | --- |
| **Cat** | **Group** | **Chair** | **Vice Chair** |
| **SC** | **ARC** | **Mark HAMILTON** | **Joseph LEVY** |
| **SC** | **REG** | **Richard KENNEDY** |  |
| **SC** | **PAR** | **Jon ROSDAHL** |  |
| **SC** | **WNG** | **Jim LANSFORD** | **Lei WANG** |
| **TG** | **MC** | **Dorothy STANLEY** | **Mark HAMILTON**  **Jon ROSDAHL** |
| **TG** | **AH** | **Yongho SEOK** | **Alfred ASTERJADHI**  **Zander LEI** |
| **TG** | **AI** | **Hiroshi MANO** | **Marc EMMELMANN** |
| **TG** | **AJ** | **Jiamin CHEN** | **Haiming WANG** |
| **TG** | **AK** | **Donald EASTLAKE** | **Mark HAMILTON** |
| **TG** | **AQ** | **Stephen MCCANN** | **Yunsong YANG** |
| **TG** | **AX** | **Osama ABOUL-MAGD** | **Simone MERLIN**  **Ron PORAT** |
| **TG** | **AY** | **Edward AU** | **SangHyun CHANG** |
| **TG** | **AZ** | **Jonathan SEGEV** | **Carlos ALDANA** |

* + 1. PAR SC did not meet this week, so the SC VC will need to be reconfirmed in July.
    2. Moved: Stephen McCann, Second: Jonathan Segev
    3. For: 50, Against: 0, Abstain: 0 (Motion passes)
  1. **Teleconferences (slide #9)**
     1. **Move to approve the following teleconferences**

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **Date(s)** | **Start** | **Duration** |
| **CAC** | **Mon June 20, July 18** | **12:00 ET** | **1 hr** |
| **TGaj** | **Thurs July 7** | **21:00** | **1 hr** |
| **ARC** | **Scheduled with 10 day notice** |  |  |
| **TGah** | **Weekly Tues May 24 to Aug 9** | **20:00 ET** | **2.5 hrs** |
| **TGai** | **Scheduled with 10 day notice** |  |  |
| **TGak** | **Mon June 6, 13, 20, July 11** | **10:00 ET** | **1.5 hrs** |
| **TGmc** | **Fri May 27, June 3** | **10:00 ET** | **3 hrs** |
| **TGaq** | **Fri June 24, July 1** | **Noon** | **1 hr** |
| **TGax** | **Thurs June 2, 16, 30, July 14**  **June 23, July 7, Aug 4** | **10:00 ET**  **20:00 ET** | **2 hrs**  **2 hrs** |
| **TGay** | **Weds June 29** | **10:00 ET** | **1 hr** |
| **TGaz** | **Weds June 15** | **10:00 ET** | **1 hrs** |

* + 1. Moved Donald Eastlake, 2nd Guido Hiertz
    2. No objection to approving by unanimous consent.
  1. **TGaj WGLB recirculation (slide #10)**
     1. **Having approved comment resolutions for all of the comments received from WG Initial Letter Ballot on P802.11aj D1.0**
     2. **Instruct the editor to generate P802.11aj D2.0, and**
     3. **Approve a 15 day Working Group Technical Recirculation Letter Ballot asking the question “Should P802.11aj D2.0 be forwarded to Sponsor Ballot?”**
     4. Moved: Jiamin Chen on behalf of the Task Group
     5. [TG result: Move: Haiming WANG, Second: Dejian LI, Results: Y 5 N 0 A 0, Motion passes]
     6. No objection to approving by unanimous consent.
  2. **TGaq WGLB recirculation (slide #11)**
     1. **Having approved comment resolutions for all of the comments received from LB219 on 11aq D4.0 as contained in document 11-16-0553r4,**
     2. **Instruct the editor to prepare 11aq D5.0 incorporating these resolutions and**
     3. **Approve a 15 day Working Group Technical Recirculation Letter Ballot asking the question “Should 11aq D5.0 be forwarded to Sponsor Ballot?”**
     4. Moved: Stephen McCann on behalf of the Task Group
     5. [TGaq result, Moved: Mike Montemurro, Seconded: Yunsong Yang, Result: 4-0-0]
     6. No objection to approving by unanimous consent.
  3. **Liaison response to 3GPP re: 60GHz radio measurements (slide #12)**
     1. **Move to approve the liaison response in https://mentor.ieee.org/802.11/dcn/16/11-16-0694-04-00ay-draft-liaison-response-to-r2-163148.docx granting the WG chair editorial license.**
     2. Moved: Edward Au on behalf of TGay
     3. Seconded: Mike Montemurro
     4. [TGay result: Moved:Laurent Cariou Seconded: Kerstin Johnsson Result: 30-0-1]
     5. For: 44, Against: 0, Abstain: 8 (Motion passes)
  4. **ANA Allocation for Opportunistic Wireless Encryption (slide #13)**
     1. **Move to instruct ANA to assign an extended element ID for the Diffie-Hellman Parameter element and AKM Suite Selector Suite Type for use by IETF**
     2. Moved: Dan Harkins, Seconded: Mike Montemurro
     3. Q: This is to allocate a number for another body? Is that correct?
     4. A: Yes, that is correct. IEEE 802.11 was not able to reach a consensus on this technology, but I feel it is necessary to allocate a number for the IETF. If IEEE 802.11 does not do it, a proprietary OUI would have to be assigned.
     5. C: So, a number will be assigned, but there is no IEEE 802.11 specification to describe how it will be used?
     6. A: There is a process within the IETF. If an RFC is eventually published by the IETF, then it will be used by them.
     7. [Reference: 11-15-1184r7]
     8. For: 20, Against: 8, Abstain: 15 (Motion passes)
     9. Q: Please could the chair announce what type of motion it is, before the motion is called.
     10. Chair: yes, I will try to do that beforehand.
     11. C: I would like to challenge the ruling of the chair.
     12. Chair: ok, that’s fine.
     13. **Motion to appeal the chair’s decision (prior motion was procedural)**
     14. Q: So, would we re-run the original motion again then, if this motion passes?
     15. Chair: No, I think the original count stands.
     16. Moved: Stephen Palm, Second Hiroshi Mano
     17. C: Next time, please can we phrase the motion in the positive?
     18. Chair: This is the correct wording.
     19. C: Please can someone explain the difference between technical and procedural motions?
     20. VC1: Technical is 75% approval, Procedural is 50%.
     21. C: During the last meeting, I thought ANA number assignments were technical. This motion appears to be re-visiting this.
     22. For: 19, Against: 16, Abstain: 7 (Motion passes)
     23. Chair: The chair’s decision has been appealed and therefore the previous motion has failed on appeal.
     24. **Motion to modify agenda to add an item 8.3 to consider ANA motions.**
     25. Moved: Jim Petranovich, Second: Jo Levy
     26. VC1: I would like the chair to review this topic offline, as opposed to modifying the agenda.
     27. Chair: Note, this motion will require 2/3 majority to modify the agenda
     28. For: 15, Against: 15, Abstain: 10 (Motion fails)
  5. **Update agenda for TGaq motion**
     1. **Motion to modify agenda to add a new item 8.3TGaq motion to authorize Telecon decision on MDR.**
     2. Moved: Stephen McCann, Donald Eastlake
     3. No objection to modifying agenda
  6. **TGaq authorization motion (slide #15)**
     1. **Authorize TGaq on its teleconference on July 1st noon ET to approve any changes resulting from the Mandatory Draft Review of the TGaq draft.**
     2. Moved: Stephen McCann, Seconded: Edward Au
     3. No objection to approving by unanimous consent.

1. **Next Meeting** (11-16-0497r0)
   1. The next meeting is in San Diego, CA in July 2016.
   2. There will be an IEEE 802 Wireless Chairs meeting as shown in Slide #20 at the July 2016 meeting. This is an open meeting and everyone is welcome.
2. **Announcement from the floor:**
   1. C: I have a proposal to supplement the slide deck that chairs show at the start of every meeting, with some information about the expected behavior of voting members. It is not finished yet, but I will bring it up in the July 2016 meeting.
3. **Adjournment**
   1. Chair: Having completed the agenda, the chair announced that the meeting was adjourned at 09:52 HAST.

**Annex A: Attendance & Affiliation**

|  | | |
| --- | --- | --- |
| **Name** | **Affiliation** | **Attended >= 75%?** |
| Aboulmagd, Osama | Huawei Technologies Co. Ltd | Yes |
| Agardh, Kare | Sony Mobile Communications | Yes |
| Ahn, Jinsoo | Yonsei University | No |
| Ahn, Woojin | WILUS | Yes |
| Akhmetov, Dmitry | Intel Corporation | Yes |
| Aldana, Carlos | Qualcomm Incorporated | Yes |
| Ansley, Carol | ARRIS Group | Yes |
| Aoki, Tsuguhide | TOSHIBA Corporation | Yes |
| Arakawa, Yutaka | Nara Institute of Science and Technology (NAIST) | No |
| Armstrong, Lee | US Department of Transportation | Yes |
| Arndt, Manfred | Hewlett Packard Enterprise | Yes |
| Asai, Yusuke | NTT | Yes |
| Asterjadhi, Alfred | Qualcomm Incorporated | Yes |
| Au, Kwok Shum | Huawei Technologies Co. Ltd | Yes |
| Auluck, Vijay | Intel Corporation | Yes |
| Azizi, Shahrnaz | Intel Corporation | Yes |
| Baik, Eugene | Qualcomm Incorporated | Yes |
| Banerjea, Raja | Qualcomm Incorporated | No |
| bang, saehee | LG ELECTRONICS | Yes |
| baron, stephane | Canon Research Centre France | Yes |
| Bertschmann, Roger | Eidetic Communications Inc | No |
| Bhandaru, Nehru | Broadcom Corporation | Yes |
| Bims, Harry | Bims Laboratories, Inc. | Yes |
| Bocus, Mohammud | Toshiba of Europe Ltd. | Yes |
| Buffington, John | Itron Inc. | Yes |
| Calcev, George | Huawei R&D USA | Yes |
| Camillo, Gentile | National Institute of Standards and Technology (NIST) | No |
| Cariou, Laurent | Intel Corporation | Yes |
| Carney, William | Sony Corporation | Yes |
| CHANG, SANGHYUN | SAMSUNG ELECTRONICS | No |
| Chang, Soo-Young | California State University, Sacramento (CSUS) | No |
| Chen, Jiamin | HUAWEI | Yes |
| Chen, Xiaogang | Intel Corporation | Yes |
| Cheong, Minho | Newracom Inc. | Yes |
| CHERIAN, GEORGE | Qualcomm Incorporated | Yes |
| Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. | Yes |
| Cho, Hangyu | lg electronics | Yes |
| Choi, Jinsoo | LG ELECTRONICS | No |
| Choi, Sangsung | Electronics and Telecommunications Research Institute (ETRI) | Yes |
| Chu, Liwen | Marvell Semiconductor, Inc. | Yes |
| Ciochina, Dana | Sony Corporation | Yes |
| Coffey, John | Realtek Semiconductor Corp. | Yes |
| Cordeiro, Carlos | Intel Corporation | Yes |
| Dauphinee, Leonard | MaxLinear Corp | Yes |
| de Vegt, Rolf | Qualcomm Incorporated | Yes |
| Debergh, Pierre | Orange | Yes |
| Eastlake 3rd, Donald | Huawei Technologies Co. Ltd | Yes |
| Ecclesine, Peter | Cisco Systems, Inc. | Yes |
| ElSherif, Ahmed | Qualcomm Incorporated | Yes |
| Emmelmann, Marc | Self Employed | Yes |
| Erceg, Vinko | Broadcom Corporation | Yes |
| Estrada, Andrew | Sony Corporation | No |
| Fang, Yonggang | ZTE TX Inc | Yes |
| Fischer, Matthew | Broadcom Corporation | Yes |
| Furuichi, Sho | Sony Corporation | Yes |
| Gagiev, Yaroslav | Intel Corporation | Yes |
| Gan, Ming | Huawei Technologies Co. Ltd | Yes |
| Ghosh, Chittabrata | Intel Corporation | Yes |
| Godfrey, Tim | Electric Power Research Institute, Inc. (EPRI) | Yes |
| Grochla, Krzysztof | IITIS PAN | No |
| Guo, Yuchen | Huawei Technologies Co., Ltd | Yes |
| Hall, Robert | Johnson Controls Inc | Yes |
| Hamilton, Mark | Ruckus Wireless | Yes |
| HAN, Xiao | Huawei Technologies Co. Ltd | Yes |
| Han, Yunbo | HUAWEI | Yes |
| Hansen, Christopher | Peraso Technologies Incorporated | Yes |
| Harkins, Daniel | Aruba Networks, Inc. | Yes |
| Hartman, Chris | Apple, Inc. | Yes |
| he, shiwen | Southeast University, China | Yes |
| Hedayat, Ahmadreza | Newracom Inc. | Yes |
| Hiertz, Guido | Ericsson AB | Yes |
| Hirabe, Yuko | NAIST | No |
| Holcomb, Jay | Itron Inc. | No |
| Hong, Hanseul | Yonsei University | Yes |
| Hong, Sungjin | WILUS Institute | Yes |
| Huang, Lei | Panasonic Asia Pacific Pte Ltd. | Yes |
| Huang, Lei | Huawei Technologies Co. Ltd | Yes |
| Huang, Po-Kai | Intel Corporation | Yes |
| Huang, Zhiyong | LitePoint Corporation/Teradyne | Yes |
| Hunter, David | WireFi Networks Inc. | Yes |
| Hurtarte, Jeorge | Teradyne, Inc. | No |
| Hwang, Sung Hyun | ETRI | Yes |
| Inoue, Yasuhiko | Nippon Telegraph and Telephone Corporation (NTT) | Yes |
| Ishizu, Kentaro | National Institute of Information and Communications Technology (NICT) | Yes |
| Iwatani, Junichi | Nippon Telegraph and Telephone Corporation (NTT) | Yes |
| Jeffries, Timothy | Huawei R&D USA | Yes |
| Ji, Mingyue | Broadcom Corporation | Yes |
| jiang, feng | Intel Corporation | Yes |
| Jiang, Jinjing | Marvell Semiconductor, Inc. | Yes |
| Jo, Kyungtae | LG ELECTRONICS | Yes |
| Johnsson, Kerstin | Intel Corporation | Yes |
| JONES, JEFFRUM | Qorvo, Inc. | Yes |
| Jones, Vincent Knowles IV | Qualcomm Incorporated | Yes |
| Josiam, Kaushik | SAMSUNG | Yes |
| Kain, Carl | Noblis, Inc. | Yes |
| Kang, Hyunduk | Electronics and Telecommunications Research Institute (ETRI) | Yes |
| Kapetanovic, Dzevdan | Ericsson AB | Yes |
| Kasher, Assaf | Intel Corporation | Yes |
| Kennedy, Richard | Hewlett Packard Enterprise | No |
| Kerry, Stuart | OK-Brit | Yes |
| Khorov, EVGENY | IITP RAS | Yes |
| Khoury, Peter | Ruckus Wireless | Yes |
| Kim, Jeongki | LG ELECTRONICS | No |
| Kim, Jin Min | LG ELECTRONICS | Yes |
| Kim, Joonsuk | Apple, Inc. | Yes |
| Kim, Sang Gook | LG ELECTRONICS | Yes |
| Kim, Suhwook | LG ELECTRONICS | No |
| Kim, Yongho | KNUT | Yes |
| Kim, Youhan | Qualcomm Incorporated | Yes |
| Kirimis, Dimitri | Newracom Inc. | Yes |
| KNECKT, JARKKO | Apple, Inc. | Yes |
| Ko, Geonjung | WILUS Institute | Yes |
| Kojima, Fumihide | National Institute of Information and Communications Technology (NICT) | Yes |
| Kondou, Keitarou | Sony Corporation | No |
| Kotzer, Igal | General Motors Company | Yes |
| Kumari, Warren | Google | Yes |
| Kwak, Byung-Jae | Electronics and Telecommunications Research Institute (ETRI) | Yes |
| Kwak, Jin-Sam | WILUS Institute | No |
| Kwon, Young Hoon | Newracom Inc. | Yes |
| Lalam, Massinissa | SAGEMCOM SAS | Yes |
| Lambert, Paul | Marvell Semiconductor, Inc. | Yes |
| Lan, Zhou | National Institute of Information and Communications Technology (NICT) | Yes |
| Lanante, Leonardo | Kyushu Institute of Technology | Yes |
| Lansford, James | Qualcomm Incorporated | Yes |
| Lee, Daewon | Newracom Inc. | Yes |
| Lee, Hyeong Ho | Electronics and Telecommunications Research Institute (ETRI) | No |
| Lee, Jae Seung | ETRI | Yes |
| Lee, Jehun | Newracom Inc. | Yes |
| Lee, Ronald | MaxLinear | Yes |
| Lee, Young Ha | Newracom Inc. | Yes |
| Lepp, James | BlackBerry | Yes |
| Levy, Joseph | InterDigital, Inc. | Yes |
| Li, Bo | northwestern polytechnical university | Yes |
| Li, Dejian | Huawei Technologies; HiSilicon | Yes |
| Li, Huan-Bang | National Institute of Information and Communications Technology (NICT) | Yes |
| Li, Qinghua | Intel Corporation | Yes |
| Li, Yunbo | Huawei Technologies Co. Ltd | Yes |
| Lim, Dong Guk | LG ELECTRONICS | Yes |
| Lin, Meilu | HUAWEI | Yes |
| Lin, Yingpei | Huawei Technologies Co. Ltd | Yes |
| Liu, Fulei | ZTE Corporation | Yes |
| Liu, Jianhan | MediaTek Inc. | Yes |
| Liu, Jinnan | HUAWEI | Yes |
| Loc, Peter | Huawei Technologies Co. Ltd | Yes |
| Loghin, Nabil | Sony Corporation | No |
| Lomayev, Artyom | Intel Corporation | Yes |
| Lv, Kaiying | ZTE Corporation | Yes |
| Ma, Jing | National Institute of Information and Communications Technology (NICT) | No |
| MADHAVAN, NARENDAR | TOSHIBA Corporation | Yes |
| Mano, Hiroshi | Koden Techno Info K.K. | Yes |
| Marks, Roger | EthAirNet Associates | No |
| Mccann, Stephen | BlackBerry | Yes |
| Merlin, Simone | Qualcomm Incorporated | Yes |
| Mobasher, Amin | SAMSUNG | Yes |
| Monajemi, Pooya | Cisco Systems, Inc. | No |
| Montemurro, Michael | Research In Motion Limited | Yes |
| Morioka, Hitoshi | SRC Software | Yes |
| Morioka, Yuichi | Sony Corporation | Yes |
| Motozuka, Hiroyuki | Panasonic Corporation | Yes |
| Mueller, Robert | Ilmenau University of Technology - TU Ilmenau | Yes |
| Murakami, Yutaka | Panasonic Corporation | Yes |
| Nagai, Yukimasa | Mitsubishi Electric Corporation | Yes |
| Nagao, Yuhei | Radrix Co., Ltd | No |
| Nejatian, Alireza | Ericsson AB | No |
| Nezou, Patrice | Canon Research Centre France | Yes |
| Noh, Yujin | Newracom Inc. | Yes |
| Notor, John | Notor Research; ARM, Inc. | No |
| OH, MIN-SEOK | LG Electronics | Yes |
| Oteri, Oghenekome | InterDigital, Inc. | Yes |
| Palm, Stephen | Broadcom Corporation | Yes |
| Pare, Thomas | MediaTek Inc. | Yes |
| Park, Eunsung | LG Electronics | Yes |
| Park, Hyunhee | LG ELECTRONICS | Yes |
| Park, Minyoung | Intel Corporation | No |
| PARK, SEUNGKEUN | ETRI | Yes |
| Park, Sung-jin | LG ELECTRONICS | Yes |
| Persson, Hakan | Ericsson AB | Yes |
| Petranovich, James | ViaSat, Inc. | Yes |
| petrick, Albert | Jones-Petrick and Associates, LLC. | Yes |
| Pienciak, Walter | IEEE | No |
| Pope, Steve | Self Employed | No |
| porat, ron | Broadcom Corporation | Yes |
| Qi, Emily | Intel Corporation | Yes |
| Qiao, Dengyu | Huawei Technologies Co. Ltd | Yes |
| Qu, Shouxing | BlackBerry | Yes |
| Ren, Yazhen | Huawei Technologies Co. Ltd | Yes |
| Riou, Emmanuel | Gridbee Communications | No |
| Rison, Mark | Samsung Cambridge Solution Centre | Yes |
| Rong, Zhigang | Huawei Technologies Co. Ltd | Yes |
| ROPITAULT, Tanguy | National Institute of Standards and Technology (NIST) | No |
| Rosdahl, Jon | Qualcomm Technologies, Inc. | Yes |
| Ryu, Kiseon | LG ELECTRONICS | Yes |
| Sadeghi, Bahareh | Intel Corporation | Yes |
| Sakamoto, Takenori | Panasonic Corporation | Yes |
| Sambasivan, Sam | AT&T | Yes |
| Sampath, Hemanth | Qualcomm Incorporated | No |
| Sato, Naotaka | Sony Corporation | Yes |
| Schelstraete, Sigurd | Quantenna Communications, Inc. | Yes |
| Segev, Jonathan | Intel Corporation | Yes |
| Shah, Kunal | Silver Spring Networks Inc. | Yes |
| Shellhammer, Stephen | Qualcomm Incorporated | No |
| Shimada, Shusaku | Schubiquist Technologies | No |
| Shimizu, Masashi | Nippon Telegraph and Telephone Corporation (NTT) | No |
| Smith, Graham | SR Technologies | Yes |
| Son, Ju-Hyung | WILUS Institute | Yes |
| Song, Nah-Oak | Korea Advanced Institute of Science and Technology (KAIST) | Yes |
| Srinivasa, Sudhir | Marvell Semiconductor, Inc. | Yes |
| Stacey, Robert | Intel Corporation | No |
| Stanley, Dorothy | Hewlett Packard Enterprise | Yes |
| Stephens, Adrian | Intel Corporation | Yes |
| Stott, Noel | Ixia | Yes |
| Strickland, Stuart | Hewlett Packard Enterprise | Yes |
| Suh, JUNG HOON | Huawei Technologies Co. Ltd | Yes |
| Sun, Bo | ZTE Corporation | Yes |
| Sun, Chen | Sony Corporation | Yes |
| Sun, Li-Hsiang | InterDigital, Inc. | Yes |
| sun, sheng | Huawei Technologies Co. Ltd | Yes |
| Tanaka, Yusuke | Sony Corporation | Yes |
| Tao, Wu | Huawei Technologies Co. Ltd | Yes |
| Taori, Rakesh | SAMSUNG | Yes |
| Tayamon, Soma | Ericsson AB | Yes |
| Tian, Bin | Qualcomm Incorporated | Yes |
| TorabJahromi, Payam | Broadcom Corporation | Yes |
| Tsai, Chia-Hung | MediaTek Inc. | Yes |
| Urabe, Yoshio | Panasonic Corporation | No |
| Van Zelst, Allert | Qualcomm Incorporated | Yes |
| Varshney, Prabodh | Nokia | Yes |
| Venkatesan, Ganesh | Intel Corporation | Yes |
| Venkateswaran, Sriram | Broadcom Corporation | Yes |
| Verma, Lochan | Qualcomm Incorporated | Yes |
| Vermani, Sameer | Qualcomm Incorporated | Yes |
| Vlantis, George | STMicroelectronics | Yes |
| Wang, Chao Chun | MediaTek Inc. | Yes |
| Wang, Haiming | Southeast University, China | Yes |
| Wang, Huizhao | Quantenna Communications, Inc. | Yes |
| Wang, James June | MediaTek Inc. | No |
| Wang, Lei | Marvell Semiconductor, Inc. | Yes |
| Wang, Qi | Broadcom Corporation | Yes |
| Wang, Xiaofei | InterDigital, Inc. | Yes |
| Wang, Xuehuan | Huawei Technologies Co. Ltd | Yes |
| Wang, Yi | Huawei Technologies Co. Ltd | Yes |
| Ward, Lisa | Rohde & Schwarz | Yes |
| Watanabe, Fujio | NTT DoCoMo, Inc. | Yes |
| Wentink, Menzo | Qualcomm Incorporated | Yes |
| Wilhelmsson, Leif | Ericsson AB | Yes |
| Wu, Tianyu | MediaTek Inc. | Yes |
| Wu, Zhanji | Beijing University of Posts and Telecommunications (BUPT) | No |
| Xin, Yan | Huawei Technologies Co. Ltd | Yes |
| Xing, Weimin | ZTE Corporation | Yes |
| YAGHOOBI, HASSAN | Intel Corporation | No |
| Yamada, Akira | NTT DoCoMo, Inc. | Yes |
| Yang, Ou | Intel Corporation | Yes |
| YANG, RUI | InterDigital, Inc. | Yes |
| Yang, Xun | Huawei Technologies Co. Ltd | Yes |
| Yang, Yunsong | Huawei Technologies Co. Ltd | Yes |
| YAO, KE | ZTE Corporation | Yes |
| Yee, Peter | NSA/IAD | Yes |
| Yokota, Hidetoshi | Landis Gyr Group Worldwide | No |
| Yoshii, Isamu | Panasonic Corporation | No |
| Yu, Jian | Huawei Technologies Co. Ltd | Yes |
| Yunoki, Katsuo | KDDI R&D Laboratories | Yes |
| Zeng, Kun | Huawei Technologies Co., Ltd | Yes |
| Zhang, Hongyuan | Marvell Semiconductor, Inc. | Yes |
| ZHANG, JIAYIN | Huawei Technologies Co. Ltd | Yes |
| Zhang, Xingxin | Huawei Technologies Co. Ltd | Yes |
| Zhang, Yan | Marvell Semiconductor, Inc. | Yes |
| Zhu, Chunhui | Huawei Technologies Co. Ltd | Yes |

**Annex B : Working Group Officers**

Working group

|  |  |  |
| --- | --- | --- |
| **Name (Affiliation)** | **Position** | **Contact Details** |
| Adrian Stephens  (Intel Corporation UK Ltd.) | IEEE 802.11 Working Group Chair  Co-Technical Editor  802.11 Assigned Numbers Authority | +44 1793 404825 (office)  [adrian.p.stephens@ieee.org](mailto:adrian.p.stephens@ieee.org) |
| Jon Rosdahl (Qualcomm) | 1st Vice Chair (Policies and Procedures) Treasurer | +1 (801) 492-4023 [jrosdahl@ieee.org](mailto:jrosdahl@ieee.org) |
| Dorothy V. Stanley  (HPE) | 2nd Vice Chair (Rules and reflectors)  IEEE 802 (LMSC) EC delegate | +1 (630) 363-1389  [dorothy.stanley@hpe.com](mailto:dorothy.stanley@hpe.com) |
| Stephen McCann (BlackBerry Ltd.) | Secretary Publicity ad-hoc Chair | +44 1753 667099 [stephen.mccann@ieee.org](mailto:stephen.mccann@ieee.org) |
| Peter Ecclesine (Cisco Systems, Inc.) | Co-Technical Editor | +1 (408) 527-0815 [petere@cisco.com](mailto:petere@cisco.com) |

Standing Committees

|  |  |  |
| --- | --- | --- |
| **Name (Affiliation)** | **Position** | **Contact Details** |
| Jim Lansford (CSR Technologies Inc. a Qualcomm Company) | Wireless Next Generation (WNG) Chair | +1-719-286-8660  [jim.lansford@ieee.org](mailto:jim.lansford@ieee.org) |
| Mark Hamilton (Ruckus Wireless) | Architecture (ARC) Chair | +1 (303) 441-7553  [mark.hamilton2152@gmail.com](mailto:mark.hamilton2152@gmail.com) |
| Andrew Myles (Cisco Systems, Inc.) | ISO/IEC/JTC1/SC6 shadow committee (JTC1) Chair | +61 2 84461010 [andrew.myles@cisco.com](mailto:andrew.myles@cisco.com) |
| Rich Kennedy (Unlicensed Spectrum Advocates) | Regulatory Chair | +1 (832) 298-1114  [rkennedy1000@gmail.com](mailto:rkennedy1000@gmail.com) |
| Jon Rosdahl (Qualcomm ) | Project Authorization Request (PAR) review Chair | +1 (801) 492-4023 [jrosdahl@ieee.org](mailto:jrosdahl@ieee.org) |

Task Groups

|  |  |  |
| --- | --- | --- |
| **Name (Affiliation)** | **Position** | **Contact Details** |
| Dorothy V. Stanley  (HPE) | TGmc Chair  (Revision mc) | +1( 630) 363-1389  [dorothy.stanley@hpe.com](mailto:dorothy.stanley@hpe.com) |
| Yongho Seok  (Self) | TGah Chair (Sub 1 GHz Operation) | +82-10-7581-0828  [yongho.seok@gmail.com](mailto:yongho.seok@gmail.com) |
| Hiroshi Mano (Koden Techno Info K.K.) | TGai Chair (Fast Initial Link Setup) | +81-3-5436-8350 [mano@koden-ti.com](mailto:mano@koden-ti.com) |
| Xiaoming Peng  (Institute for Infocomm Research) | TGaj Chair  (China Millimeter Wave) | +65-64082429  [pengxm@i2r.a-star.edu.sg](mailto:pengxm@i2r.a-star.edu.sg) |
| Donald Eastlake, 3rd  (Huawei Technologies) | TGak Chair  (General Link) | +1 508-333-2270  [d3e3e3@gmail.com](mailto:d3e3e3@gmail.com) |
| Stephen McCann  (BlackBerry Ltd.) | TGaq Chair  (Pre-association Discovery) | +44 1753 667099  [stephen.mccann@ieee.org](mailto:stephen.mccann@ieee.org) |
| Osama Aboul-Magd  (Huawei) | TGax Chair (pro-tem)  (High Efficiency WLAN) | +1 (613) 287-1405  [osama.aboulmagd@huawei.com](mailto:osama.aboulmagd@huawei.com) |
| Edward Au (Huawei) | TGay Chair (Next Generation 60 GHz) | +1 773 782 6875  [edward.ks.au@huawei.com](mailto:edward.ks.au@huawei.com) |
| Jonathan Segev (Intel Corporation) | TGaz Chair (Next Generation Positioning) | +972-54-2403587  [jonathan.segev@intel.com](mailto:jonathan.segev@intel.com) |

Study Groups

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

Topic Interest Groups

|  |  |  |
| --- | --- | --- |
| **Name (Affiliation)** | **Position** | **Contact Details** |
| Tim Godfrey (Electric Power Research Institute) | Long Range Low Power (LRLP) TIG | +1 (650) 855-8584 (office) [tim.godfrey@ieee.org](mailto:tim.godfrey@ieee.org) |

Liaison Officials to non IEEE 802 organizations

|  |  |  |
| --- | --- | --- |
| **Name (Affiliation)** | **Position** | **Contact Details** |
| Stephen McCann (BlackBerry Ltd.) | Liaison to 3GPP (3rd Generation Partnership Project) | +44 1753 667099 [stephen.mccann@ieee.org](mailto:stephen.mccann@ieee.org) |
| Dorothy V. Stanley (Aruba Networks) | Liaison to IESTF (Internet Engineering Task Force) | +1( 630) 363-1389  [dorothy.stanley@hpe.com](mailto:dorothy.stanley@hpe.com) |
| Ian Sherlock (Texas Instruments Inc.) | Liaison to WFA (Wi-Fi Alliance) | +1-972-995-2011 [isherlock@ieee.org](mailto:isherlock@ieee.org) |

Liaison Officials to IEEE 802 organizations

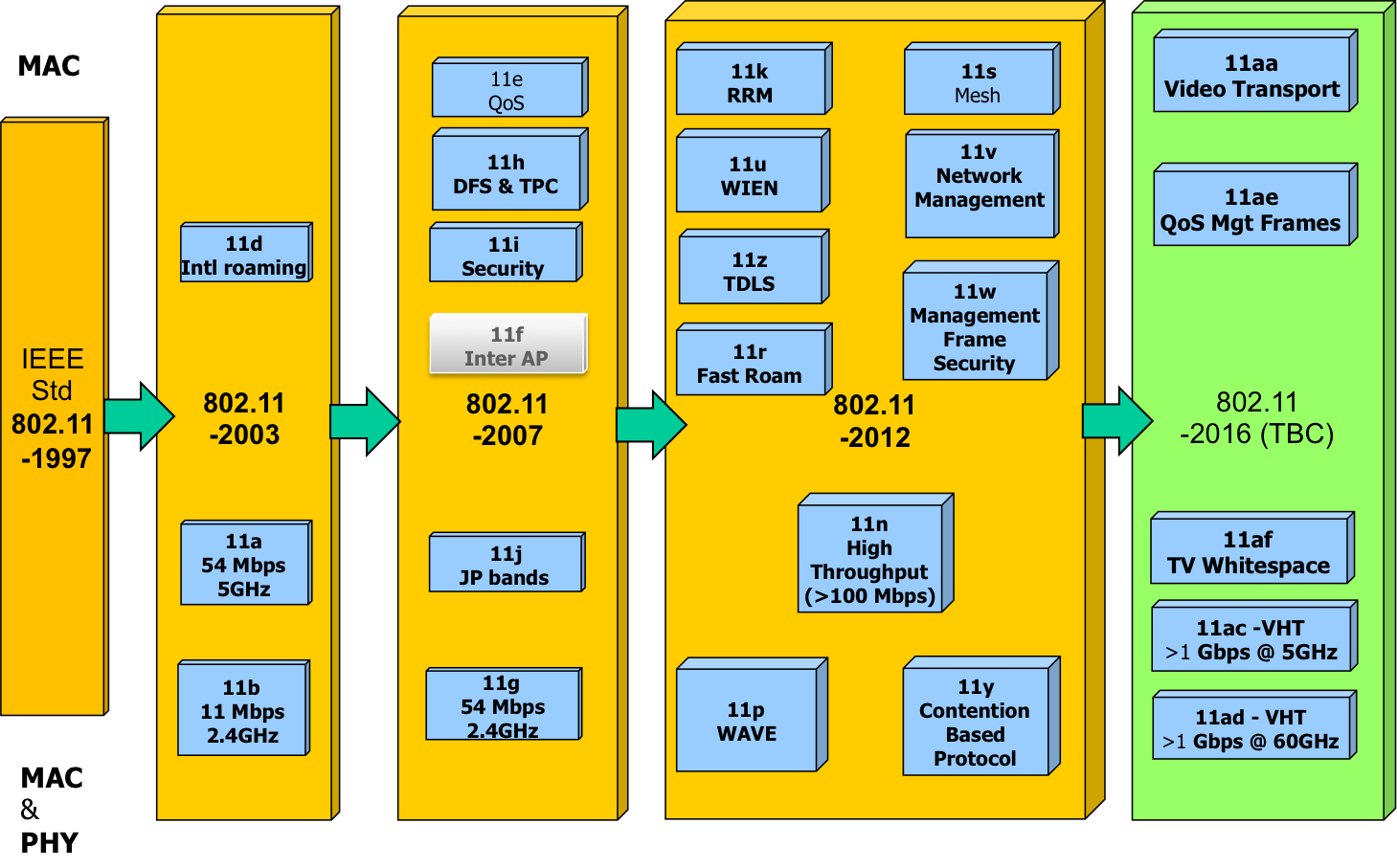
|  |  |  |
| --- | --- | --- |
| **Name (Affiliation)** | **Position** | **Contact Details** |
| Clint Chaplin (Samsung Electronics) | Liaison to IEEE 802.15 | +1 (408) 768-0827  [clint.chaplin@gmail.com](mailto:clint.chaplin@gmail.com) |
| Rich Kennedy  (Unlicensed Spectrum Advocates) | Liaison to IEEE 802.18 | +1 (832) 298-1114  [rkennedy1000@gmail.com](mailto:rkennedy1000@gmail.com) |
| 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**

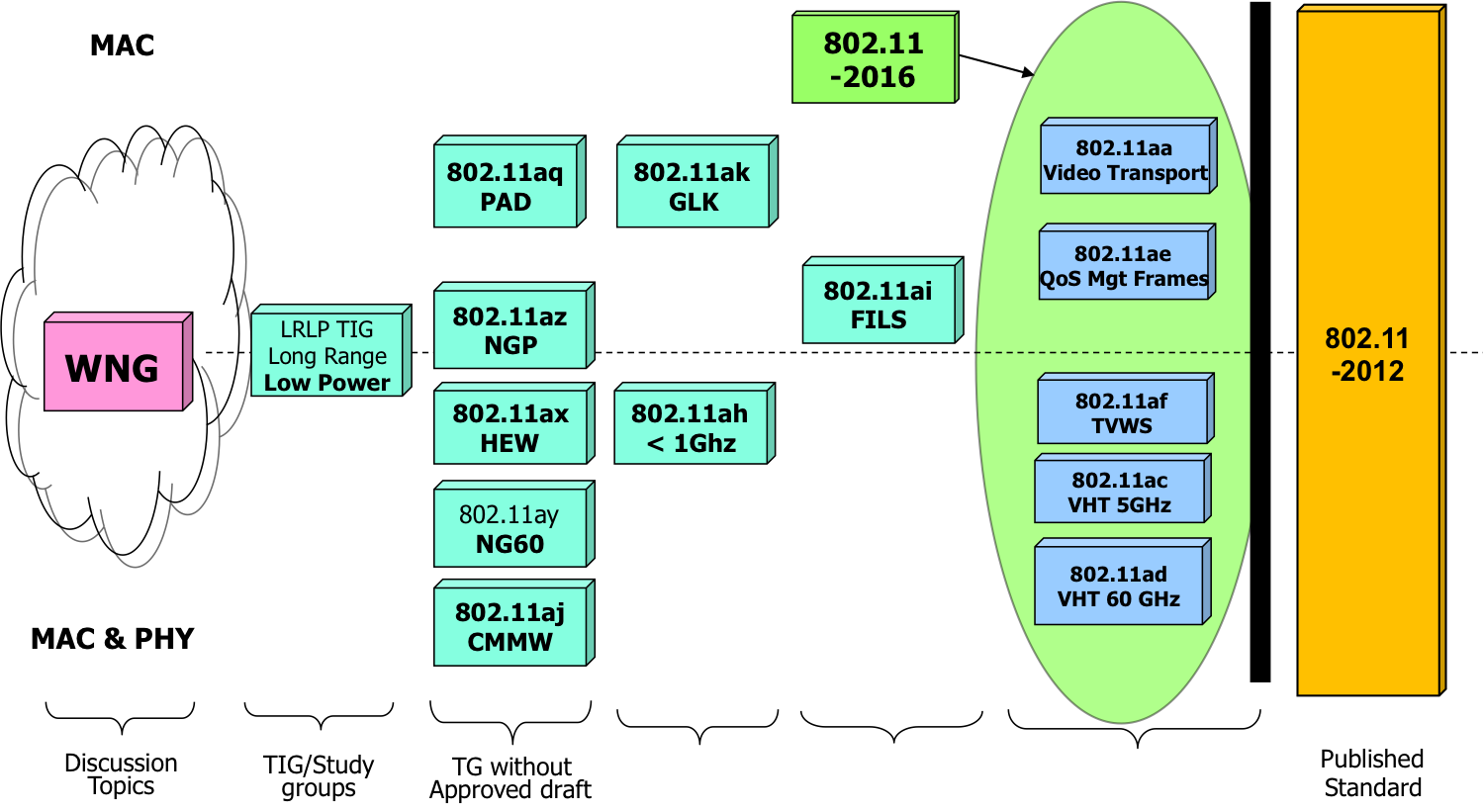
This Annex contains references to all IEEE 802.11 SC/TG/SG & Ad Hoc Committee (AHC) minutes from this meeting. Please note that they are NOT subject to the approval of these minutes, but are confirmed and approved by their individual group in the opening meeting at their next session.

|  |  |  |
| --- | --- | --- |
| WG | TE | 16-0524r1 |
| TGmc | TG | [16-0717r0](https://mentor.ieee.org/802.11/documents?is_dcn=717https://mentor.ieee.org/802.11/dcn/16/11-16-0717-00-000m-minutes-for-revmc-brc-face-to-face-meeting-may-17-19-waikoloa.docx) |
| TGah | TG | 16-0791r0 |
| TGai | TG | 16-0743r0 |
| TGaj | TG | 16-0758r0 |
| TGak | TG | 16-0749r0 |
| TGaq | TG | 16-0702r0 |
| TGax | TG | 16-0686r0 |
| TGay | TG | 16-0738r0 |
| TGaz | TG | 16-0778r0 |
| LRLP | TIG | 16-0xxxr0 |
| WNG | SC | 16-0706r0 |
| ARC | SC | 16-0xxxr0 |
| JTC1 | SC | 16-0760r0 |
| REG | SC | 16-0522r0 |

**Annex D : Revisions and Standards Pipeline**



**IEEE 802.11 Revisions**



**IEEE 802.11 Standards Pipeline**

End.