IEEE P802.11
Wireless LANs

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| IEEE 802.11 Task Group AYNovember 2015 Dallas Meeting Minutes |
| Date: 2015-11-8 |
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Abstract

Task Group AY meeting minutes from the IEEE 802.11 Dallas, Texas session, November 8-13, 2015.

**IEEE 802.11 Task Group AY**

**November 2015 Dallas Meeting**

**November 8-13, 2015**

**Monday, November 9, 2015, Ad-hoc AM1 Session (08:00-10:00)**

1. The IEEE 802.11ay task group meeting was called to order at 08:03 by the Chair, Edward Au (Huawei).
2. Chair introduced himself, vice-chair Sang Hyun Chang (Samsung) and secretary, Jeorge Hurtarte (Teradyne).
3. Agenda Doc. IEEE 802.11-15/1200r2
4. Chair reviewed the IEEE-SA patent policy, logistics, and reminders on Task Group rules, including meeting guidelines and attendance recording procedures.
	1. Chair asked if anyone has any questions about the IEEE-SA patent policy, logistics or reminders. No questions.
	2. Chair asked if anybody has any disclosures related to the patent policy. None.
	3. Chair asked if there were any questions on any of the above items. None.
	4. Chair reminded all to record their attendance.
	5. Chair reminded all to upload their presentations.
5. Chair reviewed the meeting time slots, locations and agenda items for the week (see slides 11and 12 of the agenda document).
6. Chair also announced that Yan Xin (Huawei) resigned from the IEEE 802.11ay vice-chair post and thanked him for all his past and future contributions to the TG.
7. Chair proceeded to discuss the agenda items for the Monday November 9, 2015 Ad-hoc AM1 meeting, including the liaison communications to the Wi-Fi Alliance.
8. Chair presented the background and draft response to the Wi-Fi Alliance Liaison on usage model scenarios.
	1. Liaison Letter sent to the Wi-Fi Alliance is in Doc. IEEE 802.11-15/0671r1
	2. Wi-Fi Alliance response to 802.11 Liaison Letter is in Doc. IEEE 802.11-15/0934r0
	3. Draft response to the Wi-Fi Alliance is in Doc. IEEE 802.11-15/1294r0
9. Chair reviewed the summary the Wi-Fi Liaison draft response Doc. IEEE 802.11-15/1294r0 and solicited any feedback or questions. None.
10. Meeting recessed at 08:45 and will resume on Tuesday AM1.

**Tuesday, November 10, 2015, AM1 Session (08:00-10:00)**

1. The meeting was called to order at 08:04by the Chair, Edward Au (Huawei).
2. Agenda Doc. IEEE 802.11-15/1200r3
3. Chair reviewed the IEEE-SA patent policy, logistics, email reflector logistics, and reminders on Task Group rules.
	1. Chair asked if anybody has any disclosures related to the patent policy. None.
	2. Chair asked if anyone has any questions about the IEEE-SA patent policy, logistics or reminders. No questions.
	3. Chair reminded all to record their attendance.
4. Chair reviewed the meeting time slots, meeting locations and agenda items for the week (see slides 11 and 12 of the agenda presentation). Chair asked if there were any more presentations or objections to the week’s agenda. None.
5. Chair reviewed the agenda for the Tuesday November 10, 2015 AM1 meeting. Chair asked if there is any other agenda item for Tuesday AM1. None.
6. Chair reviewed the summary of the September 2015 Bangkok, Thailand, meeting, slides 21 and 22.
7. Motion #10: Motion to approve the September 2015 Bangkok Thailand minutes
	1. Move: Yan Xin (Huawei)
	2. Second: Chris Hansen (Covariant Corporation)
	3. No objections noted. Unanimous consent.
	4. The September 2015 Bangkok, Thailand minutes were approved.
8. Chair reviewed the IEEE 802.11ay standard development timeline of slide 24. Chair asked if there were any comments or questions on the timeline. None.
9. Chair reviewed the progress made so far by the TG (slides 25-30), including progress on the usage model, channel model, functional requirements, and evaluation methodology documents.
10. Chair reminded all about the news on the FCC’s Notice of Proposed Rulemaking FCC 15-138, which seeks comments on the use of spectrum bands above 24 GHz for mobile radio services (slides 31 and 32).
11. Presentations
	1. Presentation by Carlos Cordeiro (Intel), Specification framework for TGay, Doc. IEEE 11-15/1358r0. Key points reviewed:
		1. Specification framework outline template
		2. Acronyms and Definitions
		3. Opened the floor for discussion.
	2. Presentation by Thomas Handte (Sony), Effect of impairments on the performance of non-uniform constellations, Doc. IEEE 11-15/1290r0. Key points reviewed:
		1. Investigation of NUC performance in presence of ADC quantization and fading channels
		2. NUCs as a promising technology for 11ay
		3. Further aspects under consideration
		4. Opened the floor for discussion.
	3. Presentation by Camillo Gentile (NIST), Preliminary Q-D model for lab environment at 83 GHz, Doc. IEEE 11-15/1283r0. Key points reviewed:
		1. Preliminary results for the Quasi-Deterministic (Q-D) Channel Model developed using measurements taken in a lab environment at 83 GHz
		2. Opened the floor for discussion.
12. Chair reviewed the schedule for the next presentations and reminded everyone to record the attendance.
13. Meeting recessed at 09:55 and will resume on Wednesday AM1.

**Wednesday, November 11, 2015, AM1 Session (08:00-10:00)**

1. The meeting was called to order at 08:05 by the Chair, Edward Au (Huawei).
2. Agenda Doc. IEEE 802.11-15/1200r5
3. The chair reminded all about the IEEE-SA patentpolicy, logistics, and reminders on Task Group rules.
	1. Chair asked if anybody has any disclosures related to the patent policy. None.
	2. Chair reminded all to record their attendance.
4. Chair announced that the Regulatory SC will start discussing the FCC 15-138 Notice of Proposed Rulemaking on Thursday AM1 and all who would like to participate should attend this meeting.
5. Presentations
	1. Presentation by Artyom Lomayev (Intel), Extension of Legacy IEEE 802.11ad Channel Models for MIMO and Channel Bonding, Doc. IEEE 11-15/1356r0. Key points reviewed:
		1. This presentation describes the practical steps for 11ad channel model update to support SU-MIMO and channel bonding PHY features proposed in 11ay.
		2. The channel structure defining the channel for the Phased Antenna Arrays (PAAs) was proposed.
		3. It was shown that SU-MIMO configurations can be naturally supported using the proposed channel structure.
		4. The enhanced time resolution for the Channel Impulse Response (CIR) function required to support channel bonding can be achieved adjusting Fs parameters in the legacy 11ad model.
		5. Additional experimental verification is required to justify 11ad model for the intra-cluster channel structure.
		6. Opened the floor for discussion.
	2. Presentation by Kerstin Johnsson (Intel), SU60 GHz channel model for D2D links, Doc. IEEE 11-15/1379r0. Key points reviewed:
		1. This presentation introduces a stochastic 60 GHz channel model for D2D links.
			1. The proposed model effectively replaces ray tracing
			2. Accurate spatial correlations are maintained
			3. Low computational complexity
			4. High flexibility
			5. Floor opened for discussion.
6. Chair again reminded all that the Regulatory SC will start discussing the FCC 15-138 Notice of Proposed Rulemaking on Thursday AM1 and all who would like to participate should attend this meeting.
7. Meeting recessed at 09:40 and will resume on Thursday AM2.

**Thursday, November 12, 2015, AM2 Session (10:30-12:30)**

1. The meeting was called to order at 10:32by the Chair, Edward Au (Huawei).
2. Agenda Doc. IEEE 802.11-15/1200r6
3. The chair reminded all about the IEEE-SA patent policy, logistics, and reminders on Task Group rules.
	1. Chair asked if anybody has any disclosures related to the patent policy. None.
	2. Chair reminded all to record their attendance.
4. Chair asked if there are no objections to move the Thursday PM2 agenda items to the Thursday AM 2 session if time permits. No objections.
5. Presentations
	1. Presentation by Rui Yang (Inter Digital), Feasibility of SU-MIMO under array alignment method, Doc. IEEE 11-15/1333r1. Key points reviewed:
		1. This presentation investigates the feasibility of SU-MIMO using array alignment method based on the channel models adopted in 802.11ad.
		2. A simulation methodology is proposed for evaluating the performance of SU-MIMO in an 802.11ay environment.
		3. The condition number of the MIMO channel, the achievable capacity, and the distribution of the capacity are investigated.
		4. The effect of antenna array separation and link distance is considered.
		5. Opened the floor for discussion.
	2. Presentation by Arnab Roy(Inter Digital), 11ay functional requirements for multi-hop, backhaul, and fronthaul, Doc. IEEE 11-15/1339r1. Key points reviewed:
		1. This document includes specifications for multi-hop transmissions for fronthaul and backhauland the proposal that the 802.11ay functional requirements document include these.
		2. Opened the floor for discussion.
	3. Presentation by Alexander Maltsev (Intel), Channel Models for IEEE 802.11ay, Doc. IEEE 11-15/1150r1.
		1. This document is an amendment to the “Channel Models for 60 GHz WLAN Systems” doc. IEEE 802.11-09/0334r8, and it is an update to the document he presented in Bangkok. It provides an update of the legacy indoor channel models for the conference room, enterprise cubicle and living room environments and defines new channel models for IEEE 802.11ay.
		2. Opened the floor for discussion.
	4. Presentation by Edward Au (Huawei), TGay Selection Procedure, Doc. IEEE 11-15/1079r2.
		1. Presentation on the selection procedure for the development of IEEE 802.11ay draft amendment. This slide deck was prepared based on the following references:
			1. 11-09-0059-07-00ac-802-11ac-proposed-selection-procedure
			2. 11-14-0938-04-00ax-802-11ax-selection-procedure
			3. Opened the floor for discussion.
6. Chair proceeded to continue with the agenda items from Thursday PM2.
7. Motion #11: Wi-Fi Alliance Liaison letter.
	1. Move to accept the liaison letter 15/1294r0 and grant the Working Group chair editorial rights to the letter.
	2. Move: Rob Sun (Huawei)
	3. Second: Carlos Cordeiro (Intel)
	4. No objections noted.
	5. Yes: 32; No: 0. Abstain: 1
	6. The motion passes.
8. Motion #12: Selection Procedure.
	1. Move to adopt document 15/1079r2 as the selection procedure for the Task Group.
		1. Move: Yan Xin (Huawei)
		2. Second: Rob Sun (Huawei)
		3. No objections noted. Unanimous consent.
9. Motion #13: Specification Framework
	* 1. Move to adopt document 15/1358r0 as the initial version of the Specification Framework Document for the Task Group.
		2. Move: Alecsander Eitan (Qualcomm)
		3. Second: Carlos Cordeiro (Intel)
		4. No objections noted. Unanimous consent
10. Motion #13: Usage Model Document
	* 1. Move to adopt document 15/0625r3 as the baseline document for the Usage ModelDocument
		2. Move: Rob Sun (Huawei)
		3. Second: Majid Ghanbarinejad (Huawei)
		4. No objections noted. Unanimous consent
11. Chair reviewed the upcoming Teleconference schedule for Tuesday January 5, 2016 10:00-11:00 EST.
	1. No objections noted
12. Chair reviewed the goals for the January 2016 interim meetings in Atlanta, Georgia.
13. Chair asked if there any objections to cancel the Thursday PM2 meeting.
	1. No objections
14. The Task Group AY Dallas meeting was adjourned on November 12, 2015 at 12:10.