IEEE P802.11
Wireless LANs

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| 802.11 TGaf July 2012 San Diego Plenary Meeting Minutes |
| Date: 2012-07-20 |
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Abstract

This document contains the meeting minutes from the 802.11 TGaf meetings, held at the July 2012 IEEE 802 Wireless Plenary session.

 **July 16th , 2012 (Monday) AM 9:00-11:00**

**Notes – Monday, May 16th, 2011; with 40+ attendees, AM1 ad hoc meeting**

1. **Richard Kennedy (RIM) is the chair of the group. Peter Ecclesine (Cisco Systems) is the vice-chair of the group. Zhou Lan (NICT) is the second vice-chair of the group. Chair called the meeting to order: 9:00 am.**
2. **The agenda of this meeting was reviewed and approved by unanimous consent.**
3. **Introduction**
	1. Chair welcomed participants.
	2. Chair reminded participants to record their attendance.
4. **Administrative items**
	1. Chair reviewed the administrative items and presented the links for accessing the related documents.
	2. Chair reviewed the patent policy and meeting guideline slides. Chair asked: “Are there any questions on the slides?” None.
	3. Chair asked: “Are there any patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) that the participant believes may be essential for the use of that standard?” None.
	4. Chair reviewed other guide lines of the IEEE WG meetings.
	5. Chair reviewed IEEE-SA bylaws and operations manual.
	6. Chair reviewed task group chair functions and authority.
5. **Discussions on the agenda of this week.**
	1. Peter Ecclesine proposed to add the discussion of the comment resolution in Tuesday PM1.
6. **Wookbong Lee (LGE) presented the document 802.11-12/0809r1 for the PHY proposal.**
	1. Jens Tingleff (CSR) talked about the changes of the chapter of the spectrum mask saying that the 80 MHz spectrum mask needs to be modified.
	2. Wookbong Lee (LGE) responded that 11af is from 40 MHz operation of 11ac, not from 80 MHz operation.
7. **Peter Ecclesine presented Ofcom final rules.**
	1. Peter Ecclesine pointed out the antenna height in the Ofcom rules is based on the sea level. Subsequently, the Regulator decided that antenna height will be reported in the WGS84 datum.
8. **Peter Ecclesine presented the document 802.11-12/0804r1 for clause 4 proposal.**
9. **Peter Ecclesine presented the document 802.11.12/0799r1 for channelization proposal.**
10. **Rich Kennedy asked if there are any other documents to be presented this week.**
	1. Ron Porat said there will be 802.11-12/0839r0 for the interleaver parameter, 802.11-12/0817r0 for SIFS, slot time and a PHY overview presentation.
11. **Peter Ecclesine reviewed the volunteer list for the MAC chapters.**
12. **Ron Porat discussed the proposed change for clause 8 (document not uploaded yet).**
	1. Discussion on the capability IE.
	2. Discussion on the beamforming report field.
13. **Ad hoc meeting adjourned at 10:52 am Local time.**

**July 16th , 2012 (Monday) PM 1:30-3:30**

**Notes – Monday, July 16th, 2012; with 50+ attendees, PM1 meeting**

1. **Richard Kennedy (RIM) is the chair of the group. Peter Ecclesine (Cisco Systems) is the vice-chair of the group. Zhou Lan (NICT) is the second vice-chair of the group. Chair called the meeting to order: 1:30 pm.**
2. **The agenda of the meeting was reviewed and approved by unanimous consent.**
3. **Introduction**
	1. Chair welcomed participants.
	2. Chair reminded participants to record their attendance.
4. **Administrative items**
	1. Chair reviewed the administrative items and presented the links for accessing the related documents.
	2. Chair reviewed the patent policy and meeting guideline slides. Chair asked: “Are there any questions on the slides?” None.
	3. Chair asked: “Are there any patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) that the participant believes may be essential for the use of that standard?” None.
	4. Chair reviewed other guide lines of the IEEE WG meetings.
	5. Chair reviewed task group chair functions.
5. **Motion to approve the TGaf minutes from the May Wireless Interim in Atlanta, and May 29th, June 5th, 19th and 26th, and July 3rd, 10th and 12th teleconferences in documents 11-12-0733r0, 11-12-0824r0, 11-12-0736r0, 11-12-0749r0, 11-12/0826r0, 11-12/0796r0, 11-12/828r0 and 11-12/0829r0 respectively.**
	1. **Moved by Sean Coffey (Realtek), seconded by Yongho Seok (LGE)**
	2. **Discussions: None**
	3. **Passes with unanimous consent.**
6. **The change of the TG principles to “The PHY is based on the submission for Clause 23, representing modifications of and references to Clause 22, and required, related changes to Clauses 3, 4, 5, 6, 7, 8, 9 and 10, and Annexes B, C, D and E ”.**
	1. **Rich Kennedy as the TG chair asked if there is any comment on the change of the TG principles.**
		1. **Hearing none, the changed TG principle is our baseline.**
7. **Motion to approve speculative draft P802.11af D1.08, posted on 2012-06-20, as the working draft.**
	1. **Moved by Peter Ecclesine (Cisco Systems), seconded by Jens Tingleff** **(CSR)**
	2. **Discussions: None**
	3. **Passes with unanimous consent.**
8. **Peter Ecclesine reviewed the spreadsheet of volunteers for MAC sections.**
	1. Peter Ecclesine volunteered for clause 4.
	2. Yongho Seok volunteered for the sections related with CCA indication.
9. **Ron Porat (Broadcom) presented the document 802.11-12/839r0 for interleaver parameter design.**
	1. Wookbong Lee asked what is your criteria to decide the parameters?
	2. Ron Porat responded values are chosen for better performance of higher MCSs.
10. **Tevfik Yucek (Qualcomm) presented the document 802.11-12/0908r1 for interleaver parameter design.**
	1. Ron Porat commented the results are not identical, but similar. High MCS should be taken care of.
	2. Hongyuan Zhang (Marvell) asked if 11af only supports up to 4 streams.
	3. Tevfik responded yes.
	4. Tevfik said one value cannot be winner on all the cases and MCSs.
11. **Motion to adopt the parameters on the slide 6 of 0908r1 as the interleaver parameters for TGaf.**
	1. **Moved Tevfik Yucek (Qualcomm), seconded by Jim Lansford (CSR)**
	2. **Discussions: None**
	3. **Passes with 26 YES, 0 NO and 6 ABSTAIN.**
12. **Ron Porat presented document 802.11-12/0817r0 for slot time and SIFS design.**
	1. Peter Ecclesine commented the detection time of the receiver should be considered.
	2. Fei Tong (CSR) commented why is rounding down used, rounding up makes more sense.
	3. Tevfik Yucek commented propagation time should be two times maximum one way air propagation time between most distant radios, 500 nS is too short for 11af.
13. **Recessed at 3:30 PM.**

**July 17th , 2012 (Tuesday) AM 8:00-12:30**

**Notes – Tuesday, July 17th, 2012; with 40+ attendees, AM1 meeting**

1. **Richard Kennedy (RIM) is the chair of the group. Peter Ecclesine (Cisco Systems) is the vice-chair of the group. Zhou Lan (NICT) is the second vice-chair of the group. Chair called the meeting to order: 10:00 am.**
2. **The agenda of the meeting was reviewed and approved by unanimous consent.**
3. **Introduction**
	1. Chair welcomed participants.
	2. Chair reminded participants to record their attendance.
4. **Administrative items**
	1. Chair reviewed the administrative items and presented the links for accessing the related documents.
	2. Chair reviewed the patent policy and meeting guideline slides. Chair asked: “Are there any questions on the slides?” None.
	3. Chair asked: “Are there any patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) that the participant believes may be essential for the use of that standard?” None.
	4. Chair reviewed other guide lines of the IEEE WG meetings.
	5. Chair reviewed task group chair functions.
5. **Yongho Seok (LGE) presented document 802.11-12/0894r1 for TVHT BSS operation.**
	1. Peter Ecclesine commented the secondary upper and lower are not needed. Secondary Channel Offset is not needed, can be removed.
6. **Motion to adopt the additions and changes to the TGaf draft in document 802.11-12/894r1, with changes as shown on the screen (to become r2, removing MHz).**
	1. **Moved by Yongho Seok (LGE), Seconded by Wookbong Lee (LGE)**
	2. **Discussions on the motion: None**
	3. **Passes with 11 YES, 0 NO and 4 ABSTAIN**
7. **Yongho Seok (LGE) presented document 802.11-12/0383r3 for white space map updates.**
	1. Peter Ecclesine commented the regulations changed from 200 KHz to 100 KHz. The new rules for time validity are 2 hours instead of 4 hours.
	2. Wookbong Lee commented to remove UK to keep generality of the standard.
	3. Padam Kafle (Nokia) commented there are two EIRP values for both 8 MHz and the 100 KHz spectrum density.
8. **Tevfik Yucek presented document 802.11-12/0914r0 for SIFS and slot time parameters.**
	1. Someone asked if small packet sized was considered?
	2. Tevfik responded the efficiency will be decreased if small packet size were used.
	3. Padam Kafle commented higher clock gives higher power efficiency.
9. **Ron Porat presented document 11-12/0817r1 for a revision of SIFS and slot time.**
10. **Motion to select as CCA times as shown in the table below for TGaf**
	1. CCATime 15 us (6/7 MHz), 11.25 us (8MHz)
	2. **Moved by Tevfik Yucek (Qualcomm), Seconded by Ron Porat (Broadcom)**
	3. **Discussions on the motion: None**
	4. **Passes with 19 YES, 0 NO and 3 ABSTAIN**
11. **Motion to select as slot times, slot time as shown in the table below for TGaf**
	1. Slot time 24 us(6/7 MHz), 20 us (8 MHz)
	2. **Moved by Ron Porat (Broadcom), Seconded by Tevfic Yucek (Qualcomm)**
	3. **Discussions on the motion: None**
	4. **Passes with 18 YES, 0 NO and 3 ABSTAIN**
12. **Group paused for a break at 10:00 am local time.**
13. **Chair resumed the meeting at 10:30 am local time following the break.**
14. **Straw poll: Do you support the proposed SIFS design philosophy?**
	1. Option A: SIFS values shall be derived from downclocking 20MHz and adding a penalty for 128FFT(16+X)\*20/BW
	2. Option B: SIFS values should be derived from downclocking 40MHz. (16)\*40/BW
	3. Discussions: None
	4. Results:
		1. Option A: 11, Option B: 14, Others: 2
15. **Straw poll: Do you support the proposed SIFS design philosophy?**
	1. Option A: SIFS values shall be derived from using 2x faster clock (leveraging 11af narrow BW)
	2. Option B: SIFS values should be derived from using 1x faster clock
	3. Discussions: None
	4. Results:
		1. Option A: 10, Option B: 15, Others: 2
16. **Straw poll: do you support the proposed SIFS (straightforward down clocking)?**
	1. For 6/7MHz channel: 115us
	2. For 8MHz: 86us
	3. Discussions: None
	4. Results:
		1. 15 YES, 9 NO, 13 ABSTAIN
17. **According to the straw poll results, the TG decided to keep the value as 16 us and change it later when a reasonable value comes out.**
	1. Matt Fischer commented because of MAC may have a different clock, straightforward downclocking has problems.
	2. Peter Ecclesine commented the Table 20-25 is missing the slot time.
	3. Wookbong Lee listed up the missing details. (Table 20-25)
18. **Peter Ecclesine presented 11-12/0804r1 for the clause 4 proposal.**
	1. **Motion to accept the changes to clause 4 in document 11-12/0804r1, with changes as shown on the screen (to become r2)**
	2. **Moved by Peter Ecclesine (Cisco Systems), Seconded by Jens Tingleff (CSR)**
	3. **Passes with 17 YES, 0 NO and 3 ABSTAIN**
19. **Peter Ecclesine presented 11-12/0799r1 for the channelization proposal.**
	1. **Motion to accept the channelization proposal in 11-12/0799r1.**
		1. **Moved by Peter Ecclesine (Cisco Systems), Seconded by Zhou Lan (NICT)**
		2. **Discussions on the motion: None**
		3. **Passes with 17 YES, 0 NO and 3 ABSTAIN**
20. **Ron Porat presented document 11-12/0906r1 for clause 8 proposal.**
21. **Recessed at 12:30 am Local time.**

**July 17th , 2012 (Tuesday) PM 1:30-3:30**

**Notes – Tuesday, July 17th, 2012; with 40+ attendees, PM1 meeting**

1. **Agenda was reviewed and approved.**
2. **Introduction**
	1. Chair welcomed participants.
	2. Chair reminded participants to record their attendance.
3. **Administrative items**
	1. Chair reviewed the administrative items, placing emphasis on his responsibility to deliver a quality draft standard in a timely fashion, as outlined in the WG P&P, asking that comments and comment resolutions be in the best interest of the standard, and presented the links for accessing the related documents.
	2. Chair reviewed the patent policy and meeting guideline slides. Chair asked: “Are there any questions on the slides?” None.
	3. Chair asked: “Are there any patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) that the participant believes may be essential for the use of that standard?” None.
	4. Chair reviewed other guide lines of the IEEE WG meetings.
	5. Chair reviewed task group chair functions.
4. **Motion to accept the changes of clause 8 in 802.11-12/0906r1, with the removal of “MHz” where it is not needed and 8.4.2.161a (to become r2).**
	1. **Moved by Ron Porat (Broadcom), Seconded by Wookbong Lee (LGE)**
	2. **Discussions on the motion:**
		1. Peter: there seems to be overlapping information (8.4.2.161a) provided with 11-12/0894r1.
		2. Wookbong Lee suggested to remove that section from 11-12/0906r1.
	3. **Passes with 11 YES, 0 NO and 0 ABSTAIN**
5. **Motion to accept the PHY proposal in 11-12/0809r3.**
	1. **Moved by Wookbong Lee (LGE) , Seconded by Peter Ecclesine (Cisco Systems)**
	2. **Discussions: None**
	3. **Passes with 18 YES, 0 NO, 0 ABSTAIN**
6. **Review of the assignment spread sheet.**
	1. Jens volunteered for section 3.1, 3.2 and 3.3.
	2. Section 8 is covered
	3. Peter volunteered to check the mesh sections.
7. **Motion to accept the white space map for the UK 802.11-12/0383r4 with the changes shown on screen (to become r5). The changes are to change the channel number to UK.**
	1. **Moved by Wookbong Lee (LGE), Seconded by Peter Ecclesine (Cisco Systems)**
	2. **Discussions: None**
	3. **Passes with 14 YES, 0 NO and 3 ABSTAIN**
8. **Recessed at 2:30 pm Local time.**

**July 18th , 2012 (Wednesday) AM 8:00-10:00**

**Notes – Wednesday, July 18th, 2012; with 40+ attendees, AM1 meeting**

1. **Agenda was reviewed and approved.**
2. **Introduction**
	1. Chair welcomed participants.
	2. Chair reminded participants to record their attendance.
3. **Administrative items**
	1. Chair reviewed the administrative items, placing emphasis on his responsibility to deliver a quality draft standard in a timely fashion, as outlined in the WG P&P, asking that comments and comment resolutions be in the best interest of the standard, and presented the links for accessing the related documents.
	2. Chair reviewed the patent policy and meeting guideline slides. Chair asked: “Are there any questions on the slides?” None.
	3. Chair asked: “Are there any patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) that the participant believes may be essential for the use of that standard?” None.
	4. Chair reviewed other guide lines of the IEEE WG meetings.
	5. Chair reviewed task group chair functions.
4. **Peter Ecclesine reviewed the comment spreading sheet 11-12/0277r27.**
	1. Discussion on the receiver maximum input sensitivity.
	2. Change from -30 dBm to -20 dBm according to approved submission 1077r0.
	3. Vinko Erceg (Broadcom) said the SIFS time can be TBD. People may vote yes on the letter ballot with comments.
5. **Recess for 5 minutes.**
6. **Motion to approve comment resolution spreadsheet 11-12/277r27 with changes shown on the screen (to become r28)**
	1. **Moved by Mike Montemurro (Rim), Seconded by Wookbong Lee (LGE)**
	2. **Discussions: None**
	3. **Passes with 29 YES, 0 NO and 0 ABSTAIN**
7. **Ron Porat presented document 11-12/866r0 for the PHY overview.**
	1. Hongyuan Zhang asked any requirement of channel synchronization in the case of two RF chains for two different channels and one RF at the receiver side.
	2. Ron Porat responded 80+80 operation in clause 22 need further checking.
8. **Chair asked if there was any objection to cancelling the PM1 session. There were no objections heard.**
9. **Recessed at 10:00 am Local time.**

**July 19th , 2012 (Thursday) AM 8:00-10:00**

**Notes – Thursday, July 19th, 2012; with 40+ attendees, AM1 meeting**

1. **Agenda was reviewed and approved.**
2. **Introduction**
	1. Chair welcomed participants.
	2. Chair reminded participants to record their attendance.
3. **Administrative items**
	1. Chair reviewed the administrative items, placing emphasis on his responsibility to deliver a quality draft standard in a timely fashion, as outlined in the WG P&P, asking that comments and comment resolutions be in the best interest of the standard, and presented the links for accessing the related documents.
	2. Chair reviewed the patent policy and meeting guideline slides. Chair asked: “Are there any questions on the slides?” None.
	3. Chair asked: “Are there any patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) that the participant believes may be essential for the use of that standard?” None.
	4. Chair reviewed other guide lines of the IEEE WG meetings.
	5. Chair reviewed task group chair functions.
4. **Joe Kwak (InterDigital) presented document 11-12/924r0 for interference variations on multiple channels.**
	1. Wookbong Lee (LGE) commented because we have the interleaver, the effect of the aggregated SNR would not be that significant.
	2. Jens commented aggregation doesn’t have to be done in the PHY layer.
	3. Tevfik commented a good channel should be used if the SNR on the bad channel is too bad.
	4. Hongyuan Zhang commented 11n had the same problem, almost all the people didn’t agree with unequal modulation.
	5. Ron Porat commented it may not be a good idea to use the bad channel if a 17 dB difference is there.

1. **Zhou Lan (NICT) presented document 802.11-12/938r1 for clause 9.19.2.18.**
	1. **Motion to accept the changes to clause 9.19.2.18 in 11-12/938r1.**
	2. **Moved by Zhou Lan (NICT), Seconded by Wookbong Lee (LGE)**
	3. **Discussion:**
		1. Matt Fischer asked if the definition is somewhere to support the contribution.
		2. Zhou responded the definition is on clause 3 according to another approved contribution.
	4. **Passes with 27 YES, 0 NO, and 0 ABSTAIN**
2. **Jens Tingleff** **(CSR) presented document 11-12/957r2 for clause 3.**
	1. **Motion to accept the changes to clause 3 in document 11-12/957r2.**
		1. **Moved by Jens Tingleff** **(CSR), seconded Zhou Lan (NICT)**
		2. **Discussion: None**
		3. **Passes with 22 YES, 0 NO and 0 ABSTAIN**
3. **Wookbong Lee presented revision of 0809r4 for the PHY proposal.**
	1. **Motion to accept the changes in 0809r4 with the changes show on the screen (to become r5)**
	2. **Moved by Wookbong Lee (LGE), Seconded by Jens Tingleff** **(CSR)**
	3. **Passes with 17 YES, 0 NO and 0 ABSTAIN**
4. **Recessed at 9:30 am Local time.**

**July 19th , 2012 (Thursday) PM 1:30-3:30**

**Notes – Thursday, July 19th, 2012; with 40+ attendees, PM1 meeting**

1. **Agenda was reviewed and approved.**
2. **Introduction**
	1. Chair welcomed participants.
	2. Chair reminded participants to record their attendance.
3. **Administrative items**
	1. Chair reviewed the administrative items, placing emphasis on his responsibility to deliver a quality draft standard in a timely fashion, as outlined in the WG P&P, asking that comments and comment resolutions be in the best interest of the standard, and presented the links for accessing the related documents.
	2. Chair reviewed the patent policy and meeting guideline slides. Chair asked: “Are there any questions on the slides?” None.
	3. Chair asked: “Are there any patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) that the participant believes may be essential for the use of that standard?” None.
	4. Chair reviewed other guide lines of the IEEE WG meetings.
	5. Chair reviewed task group chair functions.
4. **Motion to approve speculative draft P802.11af D2.0 as the working draft.**
	1. **Moved by Vinko Erceg (Broadcom), Seconded by Padam Kafle (Nokia)**
	2. **Discussions on: None**
	3. **Passes with 16 YES, 0 NO and 0 ABSTAIN**
5. **Motion to approve a 30 day working group technical letter ballot asking the question “should TGaf D2.0 be forwarded to sponsor ballot”**
	1. **Moved by Vinko Erceg (Broadcom), Seconded by Padam Kafle (Nokia)**
	2. **Discussions : None**
	3. **Passes with 22 YES, 0 NO and 0 ABSTAIN**
6. **Teleconference plan**
	1. Weekly on Tuesdays starting July 24th
	2. Time: 21:00 ET for up to 2 hours
7. **Time line changes**
	1. Second Working Group Letter Ballot: September 2012
	2. Recirculation Letter Ballot: January 2013
	3. Form Sponsor Ballot Pool: 2013
	4. Initial Sponsor Ballot: 2013
	5. Recirculate Sponsor Ballot: 2013
	6. Final WG/EC Approval: 2014
	7. RevCom/Standards Board Approval: 2014
8. **Meeting adjourned at 3:30 pm Local time.**
9. **References:**
	1. <https://mentor.ieee.org/802.11/dcn/12/11-12-0866-02-00af-phy-overview.pptx>
	2. <https://mentor.ieee.org/802.11/dcn/12/11-12-0809-05-00af-tgaf-phy-proposal.docx>
	3. <https://mentor.ieee.org/802.11/dcn/12/11-12-0957-02-00af-clasue-3-2-additions-proposal.doc>
	4. <https://mentor.ieee.org/802.11/dcn/11/11-11-0277-28-00af-tgaf-lb-comment-resolutions.xls>
	5. <https://mentor.ieee.org/802.11/dcn/12/11-12-0938-01-00af-clause-9-19-2-8-proposal.doc>
	6. <https://mentor.ieee.org/802.11/dcn/12/11-12-0817-02-00af-proposed-sifs-and-slot-values.pptx>
	7. <https://mentor.ieee.org/802.11/dcn/12/11-12-0383-05-00af-white-space-map-for-uk.doc>
	8. <https://mentor.ieee.org/802.11/dcn/12/11-12-0804-02-00af-phy-clause-4-proposal.doc>
	9. <https://mentor.ieee.org/802.11/dcn/12/11-12-0924-00-00af-multi-channel-snr-variance.pptx>
	10. <https://mentor.ieee.org/802.11/dcn/12/11-12-0894-02-00af-tvht-bss-operation-proposal.doc>
	11. <https://mentor.ieee.org/802.11/dcn/12/11-12-0914-01-00af-11af-interframe-spacing-parameters.pptx>
	12. <https://mentor.ieee.org/802.11/dcn/12/11-12-0817-01-00af-proposed-sifs-and-slot-values.pptx>
	13. <https://mentor.ieee.org/802.11/dcn/12/11-12-0906-01-00af-clause-8-proposal.docx>