IEEE P802.11
Wireless LANs

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| 802.11ba Teleconference Minutes October 2017 |
| Date: 06-28-2017 |
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Abstract

This document contains minutes from TG 802.11ba teleconferences in October 2017.

Rev 0: Minutes from TG 802.11ba teleconference on 23rd of October, 2017.

Rev 1: Minutes from TG 802.11ba teleconference on 30th of October, 2017.

**Teleconference on Monday, October 23rd, 2017, 5:00 – 6:00pm (ET)**

**Agenda:**

1. Call meeting to order

2. Agenda setting

3. Patent policy (link at the end of the email)

4. Attendance: send email to Leif Wilhelmsson

5. Presentations

1) TGba initial draft D0.1 development process (Minyoung Park): <https://mentor.ieee.org/802.11/dcn/17/11-17-1592-00-00ba-tgba-initial-draft-development-process.pptx>

 2) TGba draft specification D0.0 (Po-Kai Huang): <https://mentor.ieee.org/802.11/dcn/17/11-17-1585-00-00ba-proposed-draft-specification.pdf>

  3)  Mapping between TGba SFD and draft spec (Po-Kai Huang):    <https://mentor.ieee.org/802.11/dcn/17/11-17-1591-00-00ba-sfd-and-draft-specification-mapping.pptx>

6. Adjourn

Please note that teleconferences are bound by the conditions stipulated by the documentation below.  Please review them and bring up any questions/concerns you may have before proceeding with the teleconference:

IEEE Patent Policy - <http://standards.ieee.org/board/pat/pat-slideset.ppt>
Patent FAQ - <http://standards.ieee.org/board/pat/faq.pdf>
LoA Form - <http://standards.ieee.org/board/pat/loa.pdf>
Affiliation FAQ - <http://standards.ieee.org/faqs/affiliationFAQ.html>
Anti-Trust FAQ - <http://standards.ieee.org/resources/antitrust-guidelines.pdf>
Ethics - <http://www.ieee.org/portal/cms_docs/about/CoE_poster.pdf>
IEEE 802.11 Working Group Operations Manual –
<https://mentor.ieee.org/802.11/dcn/09/11-09-0002-16-0000-802-11-operations-manual.doc>

**Chair Minyoung Park (Samsung) calls the meeting to order at 5:00pm (ET).**

Minyoung goes through the agenda and asks if there is anything that should be added to the agenda. No discussion on the agenda, so the proposed agenda will be used.

Minyoung reviewes the IEEE 802 and 802.11 Policy and Procedure, and direct them to the links provided in call for this meeting in case of questions. Minyoung asks if there is any potentially essential patent that people are aware of and if there are any questions.

No potentially essential patents reported and no questions asked.

Minyoung reminds about recording attendance by sending an email to the secretary.

**Presentation:**

**11-17/1592r0, “TGba Initial Draft (D0.1) Development Process”, Minyoung Park (Samsung):** This contribution explains how Minyoung would like the TGba specification to be developed, starting with draft 0.0 today and going forward creating. In the November f2f meeting sub-clauses should be identified together with authors for these. The prepared draft text should then be uploaded before the January f2f meeting. A 7 days review period should be ensured and the comments are to be made using the email reflector. The goal is then to have a first approved version in the January f2f meeting.

**Questions/Comments (Q):** It may be quite challenging, given the current work on 802.11ax and the fact that there are Christmas between the f2f meetings.

**Answer (A):** It will probably not be so much text to review, and it will not be as formal as a comment collection. The idea is basically that people should review the document so that it will be in a shape that can be approved in the January f2f meeting. In addition, the review of 802.11ax will finish now, so there should be no overlap.

**Q:** Have you seen this procedure being used before?

**A:** Yes, similar procedures have been used before.

**Q:** Should all discussion be on the reflector? Is seems there may be a lot of emails.

**A:** We may want to do as with e.g. the Simulation Scenario and Evaluation Methodology document, people who have interest in certain topics can discuss this outside of the 11ba reflector to make it more effective.

**A:** Just remember that this is an open standard so everyone must have the chance to know what is discussed.

**Q:** Is the idea that Po-Kai should collect all the comments, or that the authors for the different sections should collect them?

**A:** The idea is that the authors for the different sections collect the comments.

**Q:** Who resolve the comments?

**A:** The authors, but preferably the commenters have proposal already when they make comments.

**11-17/1585r0, “TGba draft specification D0.0”, Po-Kai Huang (Intel):** Po-kai goes through the template for Draft 0.0.

No questions on the template.

**11-17/1591r0, “SFD and Draft Specification Mapping”, Po-Kai Huang (Intel):** This document describes how Po-Kai views the relation between the SFD and the draft specification(s). Specifically, the mapping between the different sub-sections in the SFD and sub-sections in the draft specification is shown for both the PHY and the MAC.

**Q:** Will you no longer update the SFD?

**A:** The intention is to keep updating the SFD since some sections in the draft specification are still empty. However, after we have a Draft 1.0 we can hopefully stop using the SFD.

**Meeting is adjourned at 5.58pm (ET).**

**List of Attendees:**

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| --- | --- | --- |
|  | Name | Affiliation |
| 1 | Minyoung Park | Samsung |
| 2 | Leif Wilhelmsson | Ericsson |
| 3 | Po-Kai Huang | Intel |
| 4 | Shahrnaz Azizi  | Intel |
| 5 | Hanseul Hong | Yonsei University |
| 6 | Steve Shellhammer | Qualcomm |
| 7 | John Notor | Notor Research/ARM Inc. |
| 8 | Peter Loc | Huawei |
| 9 | Yunsong Yang | Huawei |
| 10 | Roger Marks | Huawei |
| 11 | Xiaofei Wang | Interdigital |
| 12 | Lei Huang | Panasonic |
| 13 | Taewon Song | LG Electronics |
| 14 | Yongho Seok | Mediatek |
| 15 | Jeong Kim | LG Electronics |
| 16 | Woojin Ahn | WILUS |
| 17 | Eunsung Park | LG Electronics |
| 18 | Guoqing Li | Apple |
| 19 | Junghoon Suh | Huawei |
| 20 | Kiseon Ryu | LG Electronics |

**Teleconference on Monday, October 30th, 2017, 8:00 – 9:00pm (PT)**

**Agenda:**

1. Call meeting to order

2. Agenda setting

3. Patent policy (link at the end of the email)

4. Attendance: send email to secretary

5. Presentations

 1) 11-17/1359r0, Considerations for WUR Response, Taewon Song (LG Electronics),

 2) 17/1356r1, PS operation for Duty cycle STAs follow-up, Jeongki Kim (LG Electronics)

 3) 17/1302r3, WUR mode operation procedures, Lei Huang (Panasonic)

 4) 11-17-1608-00-00ba-WUR Discovery Frame for Smart Scanning, Guoqing Li (Apple)

6. Adjourn

Please note that teleconferences are bound by the conditions stipulated by the documentation below.  Please review them and bring up any questions/concerns you may have before proceeding with the teleconference:

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Affiliation FAQ - <http://standards.ieee.org/faqs/affiliationFAQ.html>
Anti-Trust FAQ - <http://standards.ieee.org/resources/antitrust-guidelines.pdf>
Ethics - <http://www.ieee.org/portal/cms_docs/about/CoE_poster.pdf>
IEEE 802.11 Working Group Operations Manual –
<https://mentor.ieee.org/802.11/dcn/09/11-09-0002-16-0000-802-11-operations-manual.doc>

**Chair Minyoung Park (Samsung) calls the meeting to order at 8:03pm (PT).**

*Acting Secretary: Yunsong Yang (Huawei)*

Minyoung goes through the agenda and asks if there is anything that should be added to the agenda. No discussion on the agenda, so the proposed agenda will be used.

Minyoung reviews the IEEE 802 and 802.11 Policy and Procedure, and direct them to the links provided in call for this meeting in case of questions. Minyoung asks if there is any potentially essential patent that people are aware of and if there are any questions.

No potentially essential patents reported and no questions asked.

Minyoung reminds about recording attendance by sending an email to the acting secretary.

**Presentations**

**11-17/1359r0, Considerations for WUR Response, Taewon Song (LG Electronics)**

* Described a potential problem of collisions among frames sent by STAs’ PCR responding to a multicast WUR wakeup frame.
* Described potential solutions with AC-differentiated wakeup delay or random wakeup delay.
* No questions or comments being raised.

**11-17/1356r1, PS operation for Duty cycle STAs follow-up, Jeongki Kim (LG Electronics)**

* Question: when you say broadcast data, do you mean the control data (the MMPDU) or the upper layer data?
	+ Answer: the upper layer data.
* Comment: Suggest making it clear to avoid confusion.
* Question: the counter itself is an indication. Why do you need the additional Presence bit?
	+ Answer: the counter is useful to indicate whether the BSS parameters have changed. The Presence bit indicates whether the BD will be present.
* Question: The BD is not for BSS parameter update, right?
	+ Answer: right.

**11-17/1302r3, WUR mode operation procedures, Lei Huang (Panasonic)**

* Propose that the WUR action frame supports four types of procedures: WUR negotiation, WUR mode entry, WUR mode entry incorporating WUR negotiation, and WUR mode exit.
* Comment: On slide 7, we don’t need Types 0 and 1. Instead, Type 2 should be used.
	+ Answer: WUR negotiation may happen during association, requiring some request and response.
* Question: if it happens during association, is it just capabilities type of negotiation?
	+ Answer: not necessarily just capability negotiation. Could also be negotiating the WUR Mode parameters.
* Question: during negotiation, what parameters are delivered from the AP to the STA?
	+ Answer: slide 3 has some examples (WUR Beacon interval, WUR receiver identifier, Duty cycle schedule of WUR receiver).
* Comment: The general concept is in-line with ours. Need to study if we need separate WUR negotiation and WUR mode entry.
* Question: regarding WUR Mode entry, does the AP always provide a response or sometime just simply send ACK? Can you combine type 1 with type 2?
	+ Answer: Sometimes, the wakeup parameters may be negotiated before the entry procedure. In that case, the parameters are not needed in the entry. That is why we propose them separately.

**11-17-1608-00-00ba-WUR Discovery Frame for Smart Scanning, Guoqing Li (Apple)**

* This follows up of the smart scanning use case previously presented. The issues are:
	+ Scanning multiple channels for WUR Beacons is both time and power consuming.
	+ For roaming scan, the STA needs to know which channel the AP’s PCR is operating at (need 2 octets, in the WUR signal, to indicate that).
* Proposes to define one or a few “Discovery channel” for a WUR transmitter to transmit WUR Discovery frames indicating the transmitter’s ID and the operating band and channel.
* Question: once the STA sees the discovery frame, what will the STA do next?
	+ Answer: it is implementation- dependent. After scanning multiple APs and collecting information, the STA may pick the strongest BSS or one with a particular BSSID.
* Question: The STA still needs to receive the regular Beacon before deciding to associate or not, is that right?
	+ Answer: This is just for the initial screening. Certain matching criteria can be used for the screening. Once matched, the STA can wake up the PCR to scan for the full Beacon.
* Question: If the Discovery channel is not mandatory, the STA first scans this Discovery channel and then scans the other channels, is that right?
	+ Answer: not intended to make the Discovery channel mandatory in the IEEE spec. It is a recommendation for the vendors. IEEE spec should be flexible. But we can consider making it mandatory in the WFA spec.
* Follow up comment: We have a similar proposal. Would like to share it with the TG.
* Question: In the Discovery frame format, is the Transmitter ID the BSS color?
	+ Answer: BSS Color is one type of transmitter ID. Another can be PBSSID. The transmitter ID is mostly for unassociated STAs. Therefore, the transmitter ID collision should be avoided.
* Question: You propose to use WURx to receive the WUR Discovery frames to do initial screening. Do you assume that the PCR and WURx can be turned on at the same time?
	+ Answer: We don’t assume any particular implementation choice. From scanning PoV, if you have some shared components between the WURx and PCR, then you have some constraint. Otherwise, the WUR scanning can be ran at any time.

*Time is running out. The Chair asks if there are any objections to extend the meeting by 10 minutes so as to finish the Q&A. There are no objections.*

* Question: Is the Discovery channel different from the regular PCR channel?
	+ Answer: it could be the same or a different channel.
* Comment: in that case, we may have 3 channels: the PCR channel, the Discovery channel, and the WUR channel.
	+ Answer: that is right.
* Question: what is the difference between the WUR Beacon and the Discovery frame?
	+ Answer: The WUR Beacon may be on any channel that the WUR operates in. The Discovery frame is only for discovery purpose and don’t need the timestamp. Thus, separate frames are needed.
* Question: What is the expected interval between the Discovery frames?
	+ Answer: on the order of hundreds of ms to 1 or a few seconds.
* Comment: In that case, we need to watch for the signaling overhead, as each Discover frame may be 1ms long at the low data rate. But if we increase the interval, the user experience may be bad.
	+ Answer: still useful when doing background search.

**Meeting is adjourned at 9:09pm (PT).**

**List of Attendees:**

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| --- | --- | --- |
|  | Name | Affiliation |
| 1 | Minyoung Park | Samsung |
| 2 | Yunsong Yang | Huawei |
| 3 | Roger Marks | Huawei |
| 4 | Xiaofei Wang | InterDigital |
| 5 | Taewon Song | LG Electronics |
| 6 | Jeongki Kim | LG Electronics |
| 7 | Lei Huang | Panasonic |
| 8 | Guoqing Li | Apple |
| 9 | Kiseon Ryu | LG Electronics |
| 10 | Po-Kai Huang | Intel |
| 11 | Rojan Chitrakar | Panasonic |
| 12 | Kaiying Lv | ZTE |
| 13 | Steve Shellhammer | Qualcomm |
| 14 | Yongho Seok | MediaTek |
| 15 | Shahrnaz Azizi  | Intel |
| 16 | Woojin Ahn | WILUS |
| 17 | Enrico-Henrik Rantala | Nokia |