IEEE P802.11
Wireless LANs

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| 802.11ba Teleconference Minutes February 2017 |
| Date: 07-28-2016 |
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Abstract

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

Rev 0: Minutes from TG 802.11ba teleconference on 6th of February, 2017.

**Teleconference on Monday, February 6th , 2017, 10:00 – 11:30 (ET)**

**Agenda:**

### Call the meeting to order

1. IEEE 802 and 802.11 IPR policy and procedure
2. Attendance reminder. Please send an email to Leif Wilhelmsson (leif.r.wilhelmsson@ericsson.com)
3. Remaining presentations from the January meeting and allocations:
	1. **Feb. 6th:**
		1. 11-17/0068, “AP Discovery Discussion,” Kaiying Lv
		2. [11-17/0070, “Initial Negotiation for WUR“ – Igor Kim (ETRI)](https://mentor.ieee.org/802.11/dcn/17/11-17-0070-00-00ba-initial-negotiation-for-wur.pptx)
		3. [11-17/0071, “High level MAC concept for WUR” – Po-Kai Huang (Intel)](https://mentor.ieee.org/802.11/dcn/17/11-17-0071-00-00ba-high-level-mac-concept-for-wur.pptx)
	2. **Feb. 13th:**
		1. [11-17/0043, “WUR power save mode “ – Tiannyu Wu (Mediatek)](https://mentor.ieee.org/802.11/dcn/17/11-17-0043-00-00ba-wur-power-save-mode-and-problem.pptx)
		2. [11-17/124, “WUR MAC and Wakeup Frame” – Liwen Chu (Marvell)](https://mentor.ieee.org/802.11/dcn/17/11-17-0124-00-00ba-wur-mac-and-wakeup-frame.pptx)
		3. [11-17/184, “Ultra low power strategies for selective wake-up from receiver prospect” - Joerg Robert (FAU Erlangen-Nuernberg)](https://mentor.ieee.org/802.11/dcn/17/11-17-0184-00-00ba-ultra-low-power-strategies-for-selective-wake-up-from-receiver-prospect.pptx)
	3. **Feb. 27th:**
		1. [11-17/0039, “Proposed TGba Functional Requirements” Ming Gan (Huawei)](https://mentor.ieee.org/802.11/dcn/17/11-17-0039-00-00ba-proposed-tgba-functional-requirements.doc)

### Adjourn

Chair Minyoung Park (Intel) calls the meeting to order at 10:00 (ET).

Minyoung confirms that the Secretary is on the call.

Minyoung reviewes the IEEE 802 and 802.11 Policy and Procedure, and presents where to find the relevant documents. Chair 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.

Minyoung checks attendance of the potential presenters, and it is proposed to cover paper 11-17/0070, 11-17/0071, and 11-17/0184.

[**11-17/0070, “Initial Negotiation for WUR”- Igor Kim (ETRI)**](https://mentor.ieee.org/802.11/dcn/17/11-17-0070-00-00ba-initial-negotiation-for-wur.pptx)**:** The presentation discusses how the initial exchange of information concerning WUR capabilities may be performed. Examples of parameters that may be exchanged include operating channel, WUR mode, duty-cycled parameters, WUR ACK policy, and wake-up delay. Also WUR association establishment and association tear-down are discussed.

**Question(Q):** Can you explain what operating channel refers to? What is the granularity?

**Answer(A):** Channel 1,2 etc. refers to the 20 MHz channels, WUR channel is to be defined later.

**Q:** You assume that a completely different channel may be used for the wake-up signal?

**A:** Yes.

**Q:** How does the AP select what WUR channel to use? Is there any cooperation between the APs?

**A:** This is not really discussed here. The negotiation referred to here is between the AP and the STA.

[**11-17/0071, “High level MAC concept for WUR” – Po-Kai Huang (Intel)**](https://mentor.ieee.org/802.11/dcn/17/11-17-0071-00-00ba-high-level-mac-concept-for-wur.pptx)**:** The presentation discusses three high level MAC concepts essential for WUR operation

1. WUR mode requests/responses to enable WUR operation and negotiate parameters.
2. Integration with current power save protocols.
3. Basic operation including acknowledgement and retransmission.

**Q:** Do you suggest that the STA should reuse a specific bit?

**A:** No, my point is that the STA in some way has to indicate it is using a WUR.

**Q:** The AP may terminate the usage of the WUR?

**A:** I don’t propose anything in particular, just point out that some kind of signaling is needed.

[**11-17/184, “Ultra low power strategies for selective wake-up from receiver prospect” - Joerg Robert (FAU Erlangen-Nuernberg)**](https://mentor.ieee.org/802.11/dcn/17/11-17-0184-00-00ba-ultra-low-power-strategies-for-selective-wake-up-from-receiver-prospect.pptx)**:** The presentation proposes to use a super regenerative receiver architecture in combination with a sampling receiver to achieve very low power consumption. It is also illustrated how the use of a sampling receiver may increase the robustness to intermittent interference.

**Q:** What would be the length of the wake-up packet?

**A:** This is essentially a design parameter which is based on the trade-off with power consumption.

**Q:** Do you have a reference for the power consumption figures?

**A:** That would be reference [9].

**Q:** Is the power consumption based on the assumption of a architecture shown on page 6?

**A:** Yes, but with another architecture is still not more than 3-4 times higher.

**Q:** Have you looked into adjacent channel interference performance?

**A:** No, but the receiver should be frequency selective enough to give good performance.

Meeting is adjourned at 11:05 (ET).

**List of Attendees**

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|  | **Name** | **Affiliation** |
| 1 | Minyoung Park | Intel |
| 2 | Leif Wilhelmsson | Ericsson |
| 3 | Joerg Robert | Univeristy Erlangen-Nuernberg |
| 4 | John Notor | Notor Research/ARM Inc. |
| 5 | Fei Tong | Samsung |
| 6 | Peter Loc | Huawei |
| 7 | Kome Oteri | InterDigital |
| 8 | Xiaofei Wang | InterDigital |
| 9 | Dongguk Lim | LG |
| 10 | Youngbo Han | Huawei |
| 11 | Shahrnaz Azizi | Intel |
| 12 | Igor Kim | ETRI |
| 13 | Pierre Debergh | Orange |
| 14 | Sunghyun Hwang  | ETRI |
| 15 | Jason Yuchen Guo | Huawei |
| 16 | Yong Cheng | Huawei |
| 17 | Jinsoo Choi | LG |
| 18 | Woojin Ahn | WILUS |
| 19 | Youngho Seok | Newracom |
| 20 | Jeongki Kim | LG |
| 21 | Po-Kai Huang | Intel |
| 22 | Eunsong Park | LG |
| 23 | Hanseul Hong | Yonsei Univ. |