IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Minutes for Task Group (TG) 802.11 be Extremely High Throughput Telephone Conferences in December 2019 and January 2020 | | | | |
| Date: 2019-12-05 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Dennis Sundman | Ericsson |  |  | Dennis.sundman@ericsson.com |
|  |  |  |  |  |

Abstract

This document contains the meeting minutes from TGbe telcos in December and January.

* Rev0: Added meeting minutes for Thursday December 6.

**Thursday 5 December 2019, 19:00 – 22:00 ET**

**Introduction**

1. The Chair (Alfred Asterjadhi, Qualcomm) calls the meeting to order at 19:15. The delay was due to problems with the join.me program.
2. The Chair asks if there is any objection to go adead with the agenda 11-19/2107r2. Nobody objects.
3. The Chair goess through the IPR policy and asks if anyone is aware of any potentially essential patents. Nobody speaks up.
4. The Chair reminds everyone to report their attendance by sending an e-mail to the secretary, Dennis Sundman (Ericsson) and the Chair himself. According to the join.me app, it appears to be around 120 people in the call.  
     
   **Recorded attendance through the join.me app and/or reported attendance through e-mail:**
   * Al Petrick
   * Alan Jauh (Unisoc)
   * Alfred Asterjadhi (Qualcomm)
   * Alice Chen
   * Andrew Blanksby
   * Cheng Chen (Intel)
   * Cheng-Hui Lin
   * Dennis Sundman (Ericsson)
   * Dongguk Lim
   * George Calcev (Futurewei)
   * Greg Ko
   * Insun Jang
   * Jinmin Kim
   * John Son (WILUS)
   * Junghoon Suh (Huawei)
   * Kazuto Yano (ATR)
   * Lei Wang
   * Lochan Verma (Qualcomm)
   * Ming Gan (Huawei)
   * Paul Nikolich
   * Pooya Monajemi (Cisco)
   * Rojan Chitrakar (Panasonic)
   * Ron Porat (Broadcom)
   * Ross Jian Yu
   * Rui Yang (InterDigital)
   * Sameer Vermani
   * Sang Kim (LGE)
   * Sang Sun
   * Shimini Shilo
   * Shubodeep Adhikari
   * Sigurd Schelstraete (Quantenna)
   * Sindhu Verma
   * Stephane Baron (Canon)
   * Steve Shellhammer (Qualcomm)
   * Steve Yang
   * Taewon Song
   * Tomo Adachi
   * Wook Bong Lee
   * Xin Zuo (Tencent)
   * Yan Xin
   * Yonggang Fang
   * Yongho Seok
   * Young Hoon Kwon (Marvell)
   * Yujin Noh
   * Yunbo Li (Huawei)
5. Announcements: This session is a joint session, but the remaining teleconference calls will be split between MAC and PHY.

**Contributions**

1. **[1652r1](https://mentor.ieee.org/802.11/dcn/19/11-19-1652-01-00be-multi-ap-transmission-procedure.pptx), “Multi-AP Transmission Procedure” – Dan Yang (ZTE)**  
     
   **Summary:** The authors propose a STA triggered Multi-AP transmission procedure.  
     
   **Comments:**  
   C: Why would a STA trigger a multi-AP transmission?  
   A: It may be the case that the APs can not hear each other.  
   C: How does this work if you have multiple STA that wants to participate?  
   A: Good question, let’s discuss over e-mail.  
   C: On slide 6. How does the master-AP know which slave-APs are to participate in the multi-AP transmission? So that the master-AP can deliver the data to the slave-APs.  
   A: This response is only to trigger the transmission.
2. [**1923r0**](https://mentor.ieee.org/802.11/dcn/19/11-19-1923-00-00be-revisiting-harq-complexity.pptx)**, “Revisiting HARQ Complexity” – Shimi Shilo (Huawei)**  
     
   **Summary:** The authors look at complexity for HARQ. For chase combining, they believe we need memory requirement in the order of 10ths of megabytes. The authors have studied codeword processing, which becomes less for retransmissions. It is concluded that the complexity is less than first expected.  
     
   **Comments:**  
   C: Slide 8. I believe the SRAM area does not so optimisticly for 7 nm.  
   A: I asked our design guys about this, but I can check again.  
   C: Slide 10. If you simulate on per-packet behaviour it may look different than this.  
   A: Assuming very large packets, I believe this is accurate.  
   C: In the memory case, you allocate memory for some reasonable probability. But occasionally, you will have a very bad situation. How do you do then?  
   A: If you cannot store, just re-transmit.  
   C: Slide 10. Is this an optimistic view of the complexity?  
   A: I want to show that the complexity scales “better” than linearly.  
   C: I have a question slide 5. Is this realistic scenario?  
   A: This is the output of my system level simulator.  
   C: If you only have one MPDU with multiple CW, you must store the full MPDU.  
   A: I agree.  
   C: Slide 10. This is based on chase combining. I wonder if this changes with incremental redundancy.  
   A: This is not chase combining. On slide 10, we use a retransmission of only info-bits. It is a sort of IR scheme.
3. [**1788r0**](https://mentor.ieee.org/802.11/dcn/19/11-19-1788-00-00be-coordinated-ofdma-operation.pptx)**, “Coordinated OFDMA Operation” – Yongho Seok (MediaTek)**  
     
   **Summary:** The authors look at sharing the spectrum through OFDMA, when an AP obtains TXOP. The AP obtaining the TXOP is called coordinator AP, and APs that gets to share the spectrum are called coordinated APs.  
     
   **Comments:**  
   C: Why do we need coordinated OFDMA? Why not choose a different primary channel?  
   A: We can discuss that scenario also.  
   C: Are you assuming that the coordinator and coordinated APs can hear each other?  
   A: Yes.  
   C: Slide 12. What about third party STAs?  
   A: We need to think about that.  
   C: Slide 5. This implies that any AP can be coordinator AP.  
   A: Yes, this is correct.  
   C: Slide 12. The response frames, are they transmitted simultaneously?  
   A: Yes, this is broadcasted.
4. [**1879r0**](https://mentor.ieee.org/802.11/dcn/19/11-19-1879-00-00be-coordinated-ap-time-and-frequency-sharing-gain-analysis.pptx)**, “Coord. AP Time & Frequency Sharing Gain Analysis” – Lochan Verma (Qualcomm)**  
     
   **Summary:** Follow-up to a presentation from the F2F. The authors look at latency aspects of TXOP sharing in time/frequency. The authors have performed full buffer simulations. Their simulations infer that both time and frequency division improves worst case latency.  
     
   **Comments:**  
   C: Did you include queuing time?  
   A: No, because it’s a full buffer scenario, so there are no queues.  
   C: What happens if we turn on the single user contention (add UL traffic)? What happens if you don’t have an AP participating in this scheme?  
   A: This is TBD, but we are working on it.  
   C: So, you use 80 MHz channels. What about re-using smaller BWs?  
   A: That is a good observation. A drawback is that the total BW for a certain transmission is less.
5. [**1895r0**](https://mentor.ieee.org/802.11/dcn/19/11-19-1895-00-00be-setup-for-multi-ap-coordination.pptx)**, “Setup for Multi-AP coordination” – Sungjin Park (LGE)**  
     
   **Summary:** The authors consider procedures for multi-AP setup.  
     
   **Comments:**  
   C: I have a question regarding Phase 2. How does the master AP gets decided?  
   A: Master-AP obtains TXOP, then this exchange takes place. So it is dynamic.
6. [**1909r0**](https://mentor.ieee.org/802.11/dcn/19/11-19-1909-00-00be-performance-of-jt-with-wireless-backhaul.pptx)**, “Performance of JT with Wireless Backhaul” – Ron Porat (Broadcom)**  
     
   **Summary:** The authors consider the impact of BW limited backhaul in joint transmissions. As long as the backhaul is at least as good as the fronthaul, the performance of JT seems to still be good.  
     
   **Comments:**  
   C: What do you mean by sounding for mesh?  
   A: We assume 2 spatial streams for the fronthaul.  
   C: What are the channel model errors in the JT impairments?  
   A: We assume AWGN imperfect channel feedback.  
   C: Slide 11. I wonder if you choose a good reference to compare with? APs are well within reach, so should you really use mesh in that case? I believe using mesh as reference is not a good idea.  
   A: Comparing to single APs are not relevant anymore. Mesh is the only thing we can get in the market right now.

**Concluding remarks**

1. Any other business: nobody speaks up
2. Telco adjourned.