IEEE P802.11  
Wireless LANs

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| Minutes of the July 2023 meeting of the IEEE 802.11 Coexistence Standing Committee | | | | |
| Date: 2023-07-17 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Guido R. Hiertz | Ericsson GmbH | Ericsson Allee 1 52134 Herzogenrath Germany |  | hiertz@ieee.org |

Abstract

This document contains the minutes of the May 2023 meeting of the IEEE 802.11 Coexistence Standing Committee.

Meeting location: Estrel Berlin, Sonnenallee 225, 12057 Berlin, Germany

1. At 2023-07-12T16:00+02:00 the chair calls the meeting of the IEEE 802.11 Coexistence Standing Committee (SC) to order. Marc Emmelmann acts as chair of the IEEE 802.11 SC. Guido R. Hiertz acts as recording secretary.
   1. The chair presents 11-23/973r1. The chair also presents 11-23/971r2 that contains the proposed agenda of the SC.
   2. The chair presents the following motion:
      1. “Move to approve Coex SC agenda as contained in 11-23/0971r2.”
         1. Moved: Rich Kennedy
         2. Seconded: Matthias Wendt
      2. The motion is approved by unanimous consent.
   3. As part of the approval of the consent agenda, the following motions are approved.
      1. Approval of minutes: “Approve the Coex SC minutes as contained in 11-23/0894r1.”
2. At 2023-07-12T16:05+02:00 the chair presents 11-23/448r1 and reminds all attendees to comply with all applicable laws, to comply with the IEEE code of ethics and conducts, to act as an independent individual, etc.
3. At 2023-07-12T16:09+02:00 Guido R. Hiertz presents 11-23/1230r1. He ends his presentation at 2023-07-12T16:17+02:00.
4. At 2023-07-12T16:18+02:00 Rich Kennedy presents 11-23/1033r0. Rich ends his presentation at 2023-07-12T16:26+02:00.
5. At 2023-07-12T16:27+02:00 Menzo Wentink presents 11-23/1279r0. Menzo concludes his presentation at 2023-07-12T16:50+02:00. Attendees debate the presentation.
   1. Comment: I believe there is a minor mistake on page 22. Wouldn’t it be two plus eight plus two?
   2. Comment: I added LBT here, that’s why there are extra slots.
   3. Comment: Your assumption is that the report is 2 ms? I don’t think so. A slot is 1 ms, TX duration is even less.
   4. Comment: Is this an extension of the presentation that you gave last time?
   5. Comment: It’s partly similar with different traffic. Last time, I gave a report about NB vs. Wi-Fi. The new stuff is with NB FH to NB FH coexistence etc.
   6. Comment: What’s the most problematic scenario?
   7. Comment: I would not say one is more relevant than another. It was important to gain insides. LBT is worth considering for NB FH. The plot on page eight should show that we have an issue with eDAA.
   8. Comment: I want to understand page eight. The throughput is one quarter without NB. The impact from NB FH on Wi-Fi has three aspects. Wi-Fi senses during the backoff the primary 20 MHz channel. I assume that a single NB transmission causes deferral. Second, over the last 25 µs it will check on the remaing 160 MHz. Third, there could be transmissions by NB FH devices that interfere in a 4 MHz portion of the 160 MHz Wi-Fi channel. Depending on MCS and SINR, the Wi-Fi packet could destroy the 4 MHz NB FH transmission.
   9. Comment: I am assuming that collisions wipe out the MPDU in that duration. Most of the reduced throughput is because MPDUs are wiped away.
   10. Comment: What is the major effect: Collision or deferral?
   11. Comment: If I run the simulation under the assumption that any interference anywhere in the packet causes the full packet being lost, this gives worst results. So, using A-MPDUs helps. The second aspect relates to the channel busy conditions. Two things can happen. Either no transmission at all or just transmissions in the non-interfered parts. So, either wait for whole 160 MHz to become idle again or reduce the transmission bandwidth. Sometimes it’s better to start in whatever is idle. But then the detection by NB FH takes longer.
   12. Comment: Which is the main aspect reducing the throughput? Backing off or retransmissions?
   13. Comment: I did not split out the loss due to busy or packet interference.
   14. Comment: Access delay is I assume due to CCA triggering?
   15. Comment: There is also intereference in the preamble or RTS, CTS.
   16. Comment: I define access delay as BlockAck to BlockAck
   17. Comment: The NB frequeny hopping occurs over 500 MHz and the Wi-Fi operates in 160 MHz. There are many hops outside of this 160 MHz channel so that the CCA busy times are a major source of issue.
   18. Comment: If it is interference that causes the issue, does rate adaptation help?
   19. Comment: These simulations use fixed MCSs. With genie MCS it does help a lot.
   20. Comment: I believe the interferer is very close to the receiver whereas the Wi-Fi transmitter is farther away from the Wi-Fi sender.
   21. Comment: It’s always two sides of a coin. Wi-Fi for sure has an effect on NB FH. I believe Wi-Fi interferes with NB FH. Wi-Fi destroys NB FH packets.
   22. Comment: No, there is no impact on NB FH transmissions because Wi-Fi transmissions are wideband.
   23. Comment: If NB FH does LBT, what are the effects on NB FH delays? Percentiles are interesting.
   24. Comment: The delays are all in one picture. Wi-Fi and NB are showed together.
   25. Comment: I believe that what NB would want to do is to exclude the 160 MHz of Wi-Fi. Use the rest of the band.
   26. Comment: On page 25, what does the y-axis indicate? It states that this is the number of successful ranging rounds. Could you provide further explainations, please?
   27. Comment: Yes, that’s when all ranging packets have been received.
   28. Comment: What do you mean by TX time per round?
   29. Comment: I calculate this fraction as the total measurement rounds by the number of successful rounds.
   30. Comment: How does LBT exactly work for you on page 26?
   31. Comment: If the wireless medium is busy, the transmission is suppressed. No transmission occurs in the following 1 ms.
   32. Comment: Why is this better?
   33. Comment: The NB FH device will suppress its transmissions. Thus, it does not destroy the NB UWB. Both sides do LBT.
6. At 2023-07-12T17:17+02:00 chair presents slides 17 to 21 of 11-23/973r1.
7. At 2023-07-12T17:20+02:00 adjourns the meeting of the SC.