IEEE P802.11
Wireless LANs

|  |
| --- |
| Minutes of the November 2023 meeting of the IEEE 802.11 Coexistence Standing Committee |
| Date: 2023-11-24 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Guido R. Hiertz | Ericsson GmbH | Ericsson Allee 152134 HerzogenrathGermany |  | hiertz@ieee.org |

Abstract

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

Meeting location: Hilton Hawaiian Village Waikiki Beach Resort, Honolulu, Hawai’i, USA

1. At 2023-11-15T10:32-10:00 the chair calls the meeting of the IEEE 802.11 Coexistence Standing Committee (SC) order. Marc Emmelmann acts as chair of the SC. Guido R. Hiertz acts as recording secretary.
	1. At 2023-11-15T10:33-10:00 chair reviews document 11-23/1728r1.
	2. At 2023-11-15T10:35-10:00 presents the following motion on page 6 of 11-23/1730r1:
		1. “Move to approve Coex SC agenda as contained in 11-23/1729r1”
			1. Moved: Rich Kennedy
			2. Seconded: Al Petrick
		2. The motion is approved by unanimous consent.
	3. As part of the approval of the consent agenda, the following motion is approved:
		1. “Approve the Coex SC minutes as contained in 11-23/1549r0.”
2. At 2023-11-15T10:36-10:00 the chair presents from page 4 of 11-23/448r1. The chair reminds all participants of their obligations when participating in this meeting. The chair reviews the antitrust reminder and the copyright policy. The chair reminds all participants of their obligation to register for this meeting.
3. At 2023-11-15T10:39-10:00 chair reviews from page 11 of 11-23/1730r1.
4. At 2023-11-15T10:40-10:00 Guido R. Hiertz presents 11-23/2033r0. At 2023-11-15T10:54-10:00, Guido ends his presentation.
	1. Comment: What is this NSO thing, what majority needed?
	2. Comment: In Europe, each country has a National Standards Organisations (NSO). The NSO represents the country in ballots related to Harmonised Standards (HSs) etc.
	3. Comment: A ballot passes if at least 71 % vote in favor.
	4. Comment: What is the EDT compromise?
	5. Comment: The EDT level is described by a transmit-power dependent rule. The absolute value are slightly different but the EN 301 893 rule is similar in nature to what is used in EN 303 687.
	6. At 2023-11-15T10:57-10:00 the discussion ends.
5. At 2023-11-15T10:58-10:00 Rich Kennedy presents 11-23/1738r2. At 2023-11-15T11:05-10:00 Rich concludes his presentation.
	1. Comment: How do we envisage this working in practice? There is some complexity to this coexistence.
	2. Comment: We don’t expect Wi-Fi to make changes. Wi-Fi is ahead of Bluetooth.
	3. Comment: We had a recommended practice in IEEE 802.15.2. We had collocated and non-collocated coexistence. I believe IEEE 802.15.2 is pretty successful. I am hoping for something similar.
	4. Comment: The Bluetooth SIG will develop how to work with what’s already there.
	5. Comment: Do you believe ETSI TC BRAN to finish requirements before BT finishes?
	6. Comment: We are working with ETSI.
	7. Comment: So there is no precedence of either.
	8. The discussion ends 2023-11-15T11:09-10:00.
6. At 2023-11-15T10:10-10:00, Carlos Aldana begins presenting 11-23/1259r1. He concludes his presentation at 2023-11-15T11:42-10:00. Attendees discuss the presentation.
	1. Comment: What is the duty cycle for Wi-Fi for the measurements?
	2. Comment: We maximize the throughput. This is a full-buffer simulation.
	3. Comment: So BT will always interfere because Wi-Fi is always on. Did you consider adaptive hopping?
	4. Comment: No, we will do in the future.
	5. Comment: If you consider different Wi-Fi duty cycles, and you consider AFH, would your conclusions change?
	6. Comment: In the simulation we had duty cycles of 55 %.
	7. Comment: I believe that it the impact of mandating a certain LBT scheme on a specific technology should be considered, too.
	8. Comment: What are the issues if a technology is forced to use LBT?. Consider music streaming over Bluetooth. When LBT is introduced, this could affect latency. Do you have plans to add evaluations to this aspect?
	9. Comment: Yes
	10. Comment: Mandating something like this is outside our scope. What can we do here? How can we mitigate. It would be great to tell Bluetooth you have to fix yourself. But what do we, here?
	11. Comment: Possibly, we should make changes to our PHY. There is already hardware out in the field.
	12. Comment: Is there nothing in the MAC that could help?
	13. Comment: Your new aspect is talking about latency requirements and the impact on latency. So far, we only looked at the Wi-Fi side. Where can we compromise and make life best for everyone. How do you see the way forward? More requirements for other technologies?
	14. Comment: Wi-Fi already has requirements on itself. It tries to be a good neighbor to itself. We need to have something to be good neighbors to each other.
	15. Comment: It is like a déjà vu . We looked at packet inspection (Wi-Fi and BT). In 2.4 GHz, it was easier. Colocated coexistence is easier because you can do packet inspection. There are companies that already ship or want to ship both technologies. If there is an incentive to do device-internal coexistence, people will follow this.
	16. Comment: There is no preference for any one technology. If we are going to do something that disadvantages another technology, it’s going to get us a hard time.
7. At 2023-11-15T11:55-10:00, Menzo Wentink presents 11-23/2081r0. He concludes his presentation at 2023-11-15T12:05-10:00
	1. Comment: What kind of impact does the addition of LBT have on latency of Bluetooth transmissions? What happens to that latency?
	2. Comment: I don’t have such results in these simulations. Bluetooth would have time for retries with this low Wi-Fi duty cycle. I believe BT would be fine. I see people proposing different solutions with randomness before transmission or changing channels when LBT found a channel to be occupied.
8. At 2023-11-15T12:08-10:00 the chair asks for general discussion.
	1. There were many presentations that feature LBT. We learned that LBT is optional in IEEE 802.15.4ab. If LBT was the golden nugget, then the IEEE 802.15 Working Group would have made it mandatory. I am sure there are disadvantages. I am looking forward for contributions to understand implications of LBT on BT. Shall we have a joint session with IEEE 802.154ab at next meeting?
	2. Comment: Schedule a call at 10 am ET.
	3. Comment: I propose that we have more than one session at our next meeting.
9. At 2023-11-15T12:12-10:00 Sebastian Max presents 11-23/1999r0. He concludes his presentation at 2023-11-15T12:20-10:00.
	1. There are no questions or comments.
10. Attendees discuss what to do next. How to collaborate with other groups.
	1. Comment: IEEE 802.15.4ab will have its draft ready in January. That’s a good opportunity for them to present their coexistence assessment document.
	2. Comment: Is there any interest in summarizing the key findings of the group?
	3. Comment: Isn’t BT the fundamental issue?
	4. Comment: IEEE 802.15.4 has use cases with very low traffic. It’s traffic is not latency or throughput constrained.
	5. Comment: It also has UWB ranging. The narrowband channels helps the wideband channel. What happens with UWB ranging if Wi-Fi is going on? Wi-Fi screws them up.
11. At 2023-11-15T12:27-10:00 the chair declares the meeting adjourned.