IEEE P802.11
Wireless LANs

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| Minutes of the September 2021 meeting of the IEEE 802.11 Coexistence Standing Committee |
| Date: 2021-09-30 |
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Abstract

This document contains the minutes of the September 2021 meeting of the IEEE 802.11 Coexistence Standing Committee.

At 2021-09-20T22:02+02:00 the chair calls the meeting of IEEE 802.11 Coexistence Standing (SC) Committee to order. Andrew Myles acts as chair of the SC. Guido R. Hiertz acts as recording secretary of the SC. The chair presents 11-21/1286r2. The chair reminds all attendees to record their attendance and to register for this meeting. The chair reminds attendees of the IEEE-SA code of conduct and that every attendee shall act as individuals. Furthermore, the chair reminds attendees of the IEEE copyright policy.

At 2021-09-20T22:06+02:00 the chair arrives at page 12 of 11-21/1286r2. The chair asks for unanimous approval of the proposed agenda as presented on slide 12. Nobody objects. Therefore, the proposed agenda is approved.

At 2021-09-20T22:06+02:00 the chair arrives on slide 17 of his presentation. At 2021-09-20T22:07+02:00 the chair asks for unanimous approval of the following motion

“The IEEE 802 Coex SC approves 11-21-1366-00 as the minutes of its virtual meeting in July 2021”

Nobody objects.

Therefore, the minutes contained in 11-21/1366r0 are approved.

At 2021-09-20T22:09+02:00 the chair arrives on page 21 of his presentation. At 2021-09-20T22:11+02:00 an attendee asks about the content on page 24 of 11-21/1286r2.

Comment: You are talking about networks. How big is each network?

Comment: The term network stands for one operator. All equipment of operator X counts as one network.

Comment: Thus, we don’t know if these numbers relate to the equipment that operator X deployed all over the US or its deployments in some limited area.

Comments: Yes, we don’t know this.

At 2021-09-20T22:12+02:00 the chair continues presenting from page 27. At 2021-09-20T22:35+02:00 attendees discuss page 47

Comment: This slide might convey the impression that the ECC could provide a mandate to ETSI. Such impression would be incorrect. It is the European Commission that tasks ETSI. All EU member states are members of ECC/CEPT. However, not all ECC/CEPT members are members of the EU. ECC DEC(20)01 permits ECC/CEPT member countries to open the 5.945 GHz to 6.425 GHz band on a voluntary basis. ECC DEC(20)01 forms the basis for the European Commission’s decision 2021/1067. EC decision 2021/1067 provides the basis for ETSI BRAN to develop a Harmonized Standard for the 5.945 GHz to 6.425 GHz band and it mandates all EU member states to open 5.945 GHz to 6.425 GHz by December 1st, 2021.

At 2021-09-20T22:36+02:00 chair continues from page 51. At 2021-09-20T22:43+02:00 the chair arrives at page 59 of 11-21/1286r2.

At 2021-09-20T22:44+01:00 Menzo Wentink presents 11-21/1550r0. At 2021-09-20T23:00+001:00 Menzo concludes his presentation. Attendees discuss this presentation.

Comment: You raised a whole bunch of issues of the eDAA mechanism and LBT used in Wi-Fi. What is the solution to all of this?

Comment: It is the use of LBT. If NB would use LBT-type access, the sharing issue goes away and so does the latency problem.

Comment: Have you done any LBT based simulations?

Comment: Yes, I have. NB FH can be made to work with LBT. Of course, power consumption is important for technologies like Bluetooth. In Wi-Fi, a transmission needs to begin within SIFS time once the sensing completes. From a NB FH perspective, it would be sufficient to increase the duration after having performed CCA until the start of transmission.

At 2021-09-20T23:04+02:00 Stuart Thomas presents 11-21/1152r0. At 2021-09-20T23:13+02:00 Stuart concludes his presentation. Attendees discuss this presentation.

Comment: There is a lot of discussion about procedures and rules. But all comes back to the technical fundamental issues of coexistence. According to Menzo there is no good coexistence. You have done studies showing that coexistence is fine. How do we come to a common understanding?

Comment: We need to see what are the goals of each system. Then, we need to work out what may be compromised by each side. We are interested in both sides. The rules are there, the regulation is there. We need to find what is acceptable for everybody. We probably need to put this in writing.

Comment: You mentioned that your goals is to have a maximum latency of less than 10 ms. In particular, you mention voice applications. I am using Wi-Fi and I believe voice applications work well over Wi-Fi.

Comment: We think about very small device that are restricted in size and battery power consumption. Wideband operation does not suit this applications. Such devices will be on your body. Video and voice applications will be working together. There are design constraints in terms of acceptable overhead.

Comment: So, the real requirements are getting low latency for power save?

Comment: No. It’s when more devices are sharing that latency becomes an issue.

Comment: This raises another question. Menzo claims that NB FH fails to coexist with itself.

Comment: No, we believe the simulations are incorrect here.

Comment: One of our concerns are the high latency of Wi-Fi.

Comment: We had a lot of one-to-one discussions. However, the wideband community did not offer anything from their side.

Comment: What would you like to see from the wideband community?

Comment: We are open to discuss how to achieve a solution that satisfies everyone. We need to discuss what may change on the wideband side, too.

Comment: You are referring a few times to the wideband community. Is this a wideband community versus narrowband community dispute? What does the narrowband community represent?

Comment: There are various entities interested in NB. There needs to be some concessions by the wideband community, too. We need to write down what is acceptable. Compared to the option permitted in Europe, the narrowband community offered a lot. The wideband community, however, is standing still.

Comment: You phrase it like a narrowband vs. wideband. Do we need a dialogue between the Bluetooth SIG and Wi-Fi Alliance?

Comment: The key organizations are at ETSI BRAN. It’s all about writing the requirements down and going through the issues one by one.

Comment: Rather than thinking of narrowband versus wideband, we should look at this as a goal of sharing and how to improve the characteristics of wideband to support low latency. Are we moving towards this goal with 802.11be? Or, are we orders of a magnitude apart?

Comment: We need to get these parameters down and understood. Where do we have flexibility? Where isn’t any? List it side by side. That’s the only way we are going make progress. I don’t think we are miles and miles apart. It’s just that both parts need to work on this.

Comment: For example, with OFDMA we have tremendous flexibility at RU and spectrum level. Maybe we can use this to establish what is desired.

Comment: There is room for both.

Comment received via the chat function: “That would need some coordination of NB-FT and WLAN.”

Comment: With 802.11be, we have a tremendous flexibility to get closer to what is needed. Puncturing, and RU assignment etc.

Comment: Preamble puncturing can help. That does need some coordination. The NB FH needs to understand some signaling. And vice versa.

Comment: That would be the ideal scenario. But there are different PHYs and the systems need to operate independently.

Comment: A previous comment was saying that IEEE 802.11be can support all NB cases. However, there are applications that can be supported by NB, only. That is why 802.11be cannot be in in-ear headphones. The point here is that there are applications better suited to narrowband and some are better handled by wideband. There is no technology that can handle all use cases.

Comment: We need to understand the requirements. It sounds like that throughput is not a goal for narrowband. We have the ability to go to a single RU. Now, I am hearing its power consumption.

Comment: Power consumption is something that Stuart mentioned very early on. With 802.11be you can go anywhere from a single to multiple transmission chains. This is not low power anymore.

Comment: Yes that is fair argument. With 802.11n we have a lot of market adoption for IoT applications. Perhaps we need to do more thinking on low power for 802.11be.

Comment: 802.11ax defines 20 MHz-only devices. 6 GHz is interesting for low latency and high bandwidth applications. This is why we put so much effort into getting this spectrum. Do the experts think that both technologies may achieve 10 ms latency when sharing on a single channel?

Comment: Yes, this is possible.

Comment: This is encouraging. Would you say that both working with 10 ms is one measure of coexistence?

Comment: There are different key parameters for each technology. There are always scenarios where it is difficult to achieve everything equally.

Comment: NB FH sharing in the same spectrum as Wi-Fi … In different spectrum, that’s no problem. In the same spectrum, LBT with a random backoff could achieve it. Frequency hopping has this inherent TDMA aspect. Is difficult to combine with random access. ETSI BRAN also defines frame-based operation which is very suited for TDMA type applications. A solution would be more into this direction.

Comment: Fair coexistence means that both systems achieve the latency they need.

Comment: It is interesting that we fall back to discuss fairness. This is in the eye of the beholder. We had that with LAA with Wi-Fi. Both stakeholders have important reasons for their use cases. The two systems are quite different. That is leading to all kinds of complications. The difference is the source of issues.

At 2021-09-20T23:42+02:00 the chair continues presenting his contribution 11-21/1286r2 from page 60. At 2021-09-20T23:50+02:00 declares the meeting to be adjourned.