IEEE P802.11
Wireless LANs

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| Minutes of the January 2020 meetings of IEEE 802.11 Standing Committee Coexistence |
| Date: 2020-02-26 |
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Abstract

This document contains the minutes of the January 2020 meetings of IEEE 802.11 Standing Committee Coexistence.

R1: minor editorials and correct vote count at 2020-01-16T14:09-08:00

R2: changed “The truth is that all existing 802.11 devices fail to detect the 20 µs long 802.11a preamble” to “The truth is that many existing 802.11 devices fail to detect the 20 µs long 802.11a preamble”

Meeting location: Meeting room “Theater,” Hotel Irvine, 17900 Jamboree Rd Irvine, California 92614, USA

# Wednesday, 2020-01-15, PM1

At 2020-01-15T13:31-08:00 the chair calls the meeting of the IEEE 802.11 Coexistence Standing Committee (SC) to order. Andrew Myles acts as chair of the SC. Guido R. Hiertz acts as recording secretary. The chair introduces document 11-19/2150r5. At this moment, revision 5 is equivalent to revision 4 of 11-19/2150. The chair promises to upload 11-19/2150r5 after this session. 11-19/2150r5 will contain all modifications that might occur during this session.

At 2020-01-15T13:33-08:00 the chair presents page 4 of his document. At 2020-01-15T13:35-08:00 the chair presents slides 11 and 12 of his document containing the proposed agenda for this week.

Comment: Are you including NR-U deployments?

Chair: No, I don’t have data for this.

At 2020-01-15T13:37-08:00 the SC approves the agenda by unanimous consent. The chair continues from page 14.

At 2020-01-25T13:40-08:00 the SC approves the minutes contained in 11-19/2098r0 by unanimous consent. The chair continues from page 20 of his document 11-19/2150r5.

At 2020-01-25T13:50-08:00 Stuart Kerry asks for the following statement to be recorded in the meeting minutes:

“Please record in the minutes that ETSI BRAN documents are available for 802.11 members through the IEEE 802.11 members area. They are not generally available to the public.”

At 2020-01-25T13:51-08:00 the chair continues from page 29.

At 2020-01-25T13:54-08:00 an attendee comments on page 31.

Question: What was the Nokia use case?

Chair: The typical 3GPP simulation set-up with six APs etc. It may or may not represent the general case.

At 2020-01-25T13:56-08:00 the chair continues from page 32. At 2020-01-25T14:10-08:00 attendees discuss page 39:

Question: Is there a reason why RTS/CTS makes the situation fair?

Chair: You ask a good question. Often the simulations are presented as what they are. Often, I do not understand the underlying mechanisms. In my opinion, it is tricky to draw conclusions from them.

At 2020-01-25T14:11-08:00 the chair continues from page 41. At 2020-01-25T14:18 attendees discuss page 44:

Comment: This whole effort needs to conclude how to get to the market in Europe.

Comment: You can always go through notified bodies.

Comment: No, probably not.

Chair: I believe that at the middle of the year towards the end of the year the spectrum will become available in Europe. We will not have EN 303 687 available till end of the year. Once we have a stable draft, you can approach notified bodies. Currently, people need to use notified bodies already for 802.11ax. This is painful but doable. We have about six months to come to conclusion.

Comment: There is only one ETSI BRAN meeting scheduled prior to the regulation being settled. It’s at the end of March. There have been discussions about an extra BRAN meeting. Approaching notified bodies is the only option to ship something this year.

At 2020-01-25T14:23-08:00 the chair continues from page 45. At 2020-01-25T14:37 attendees discuss page 54:

Comment: The ad hoc was not led by Cablelabs. The ETSI BRAN chair appointed an individual who is affiliated with Cablelabs to lead an ad hoc decision. In this position, the individual did not represent Cablelabs. You are confusing leadership roles, which are held by individuals, with entity based membership.

Chair: You are right. I will correct all of this.

At 2020-01-25T14:38-08:00 the chair continues from page 55.

At 2020-01-25T14:43-08:00 the chair asks if anyone beyond the companies Qualcomm and Broadcom might be interested in testing. The chair explains that Cisco intends to do some testing. There is no response.

The chair continues his presentation from page 56. At 2020-01-25T14:44-08:00 attendees discuss:

Comment: I don’t have anything to report. We are held up by holidays. So far, our tests look in line with what we expected. We will report at that ETSI BRAN GoToMeeting.

Comment: What is the status of ED vs. PD/ED? Is the topic of a common preamble no more relevant?

Chair: At the moment it is agreed that you’ll be able to use ED and PD. But that depends on us having a test. It depends on having a test that any 802.11 device can pass.

Comment: Is the topic of common preamble still relevant if further OFDM symbols following the preamble are needed?

Chair: In a sense that discussion is moot because 3GPP chose not to use our preamble at all. In the future, it would be good if both technologies could detect each other. What we are really talking about is the 802.11a preamble. The truth is that many existing 802.11 devices fail to detect the 20 µs long 802.11a preamble. The new case is to have the 802.11a preamble with a couple of extra symbols. We can tell 3GPP that we can detect each other if we both send the 802.11a preamble plus at least two extra IEEE 802.11a OFDM symbols. It is very embarrassing that we did not understand our own implementations well enough. We can define the preamble to be whatever we persuade the other side. We run into being pragmatic or just discussing theory.

Comment: The topic of common preamble is not relevant anymore.

Chair: It is still relevant. They ideally use our preamble as common preamble. Now, it is preamble prime.

At 2020-01-25T14:52-08:00 the chair continues from page 58. At 2020-01-25T14:54-08:00 an attendee comments on page 59:

Comment: This text should not be accepted in ETSI BRAN. It is based on what is defined in 802.11 today. However, the 802.11 specification is broken and should change. We have proven that it is inefficient that the CW counter is reset after a broadcast transmission. What 3GPP does is a better scheme. They do not reset the CW counter after broadcast transmissions.

Chair: This is well outside of the scope of this group. This could be considered in TGmd potentially. The other problem is that many devices in the field do reset after broadcast transmissions.

Comment: We have a proposal to 802.11be to change the behavior.

Chair: My preference is to continue doing what is defined in ETSI BRAN.

At 2020-01-25T14:56-08:00 the chair introduces page 61.

At 2020-01-25T14:59-08:00 David Boldy presents 11-20/172r0. At 2020-01-25T15:11-08:00 David concludes his presentation.

Chair: Why is this important to 802.11?

Comment: There are many concerns of the issues of coexistence with legacy devices.

Comment: During the design of 802.11ax this should have been considered. This is much worse than what normal puncturing was. I don’t understand why it is set to higher values. It is guaranteed that this will harm legacy devices.

Comment: I also want to support this view. Whatever is on the punctured channel will suffer.

Comment: I am glad that 3GPP products are much better. If 3GPP have been stuck at the 802.11ax values, it would have been very bad.

Comment: My original understanding was that puncturing is used on radar channel because nobody would be operating on this channel anyway.

Comment: This is now picked up by 802.11be. It has gone beyond the original intentions. What will the Coexistence SC do about it?

Chair: In my opinion, the Coexistence SC has no authority to do anything about 802.11be. You should address 802.11be yourself. I cannot help you.

Comment: I submitted comments to previous letter ballots. They were all rejected. TGax refused to accept that this is an issue although it is even mentioned in the Coexistence Assurance document. It’s an 802.11ax issue and it is extended into 802.11be.

Chair: I encourage you to address the issues in the particular groups. I will not consider it in my SC.

At 2020-01-25T15:17-08:00 the chair continues from page 70.

At 2020-01-25T15:20-08:00 the chair declares the SC to be in recess.

# Thursday, 2020-01-16, PM1

At 2020-01-16T13:33-08:00 the chair calls the meeting of the IEEE 802.11 Coexistence Standing Committee (SC) to order. Andrew Myles acts as chair of the SC. Guido R. Hiertz acts as recording secretary. The chair introduces document 11-19/2150r6. Except for a few typos corrected, revision 6 is equivalent to revision 5 of submission 11-19/2150. The chair explains that he will upload document 11-19/2150r6 after this session. 11-19/2150r6 will contain all modifications that might occur during this session.

At 2020-01-16T13:36-08:00 the chair begins presenting from page 73 of 11-19/2150r6.

At 2020-01-16T13:38-08:00 an attendee comments:

Comment: The chair made an e-mail of the closed ETSI TC BRAN reflector available to the public. You have not right to do so. The ETSI BRAN e-mail reflector is not accessible to the public. Furthermore, access to this e-mail reflector is restricted to ETSI members, only.

Chair: I felt it was important to be accurate by quoting exactly what was stated rather than attempting to summarise it. Do you want me to delete this?

Comment: I am just making statement that you violate the confidentiality of another SDO.

At 2020-01-16T13:39-08:00 the chair continues presenting page 75.

At 2020-01-16T13:42-08:00 an attendee makes a comment.

Comment: Your statement on page 77 is misleading. The normal COT duration is less than 6 ms. 10 ms is an exception for APs.

Chair: Yes, you are right.

At 2020-01-16T13:43-08:00 the chair continues from page 78. At 2020-01-16T13:48-08:00 the chair presents 11-20/171r2. This document is equivalent to 11-20/171r1.

At 2020-01-16T13:52-08:00 attendees discuss the document

Comment: Overall the document is well written. We don’t need to do send this proposed letter. The positions are very well known among participants and companies. There is a tight timeline to get this done. I don’t think it helps to send this liaison to BRAN. I will not support its approval.

Chair: Can you explain the harm?

Comment: Sending this LS is overhead. It adds more tension into the system. There is a risk of harm.

At 2020-01-16T13:55-08:00 chair starts reviewing the proposed LS paragraph by paragraph. At 2020-01-16T13:57-08:00 an attendee comments:

Comment: What is “ED-only for applications like spatial reuse”?

Chair: You effectively raise the PD threshold in some circumstances. This means in Europe your ED needs to come down to −72 dBm. We know that the 802.11ax spatial reuse does not work under the normal thresholds.

Comment: In 802.11ax, we do not adjust ED.

Chair: In Europe, you must lower ED to −72 dBm whenever you want to raise the PD threshold to higher than −82 dBm.

At 2020-01-16T13:59-08:00 the chair continues reviewing 11-20/171r2 paragraph by paragraph.

Comment: Who is we in the second sentence in the last paragraph?

Chair: It’s us. The Coexistence SC is “we” in the letter.

Comment: We have not evaluated this at all.

Chair: I disagree.

Comment: We have heard what has been reviewed. We did not do anything ourselves.

Comment: We understand that none of the schemes can result in good coexistence under all use cases.

Chair: Yes. We should look at the average. There are cases when coexistence is poor. You always end up with edge situations that result in extremes.

At 2020-01-16T14:06-08:00 the chair uploads 11-20/171r2 to Mentor server.

At 2020-01-16T14:09-08:00 the following Motion is

moved by Shubhodeep Adhikari and

seconded by James Lepp:

“The IEEE 802.11 Coexistence SC recommends to the IEEE 802.11 WG that 11-20-0171-02, articulating a position on adaptivity for 6 GHz in EN 303 687, be liaised to ETSI BRAN”

Attendees discuss the motion:

Comment: I am speaking against the motion. It is not helping. It may harm progress.

Result: Yes: 5 No: 4 Abstain: 10

At 2020-01-16T14:11-08:00 Shubhodeep Adhikari presents 11-20/195r0.

Comment: Why is the page 3 concept unfair?

Response: LAA LTE does not have the same bonding structure. So, it can block several, non-neighboring channels for Wi-Fi. They might be all primary channels.

Comment: Isn’t that scheme the same as 802.11 bonding?

Response: The LAA bonding is not the same as Wi-Fi because it is unrestricted. They use one primary and can have many other channels as secondary.

Comment: The 802.11 80 MHz plus 80 MHz should also have two primary channels, therefore. This is not the case in 802.11ac and 802.11ax.

Response: In IEEE 802.11, there is one primary channel with 160 MHz transmissions.

Comment: The IEEE 802.11 80 MHz + 80 MHz case is non-contiguous and it still has one primary only.

Response: Let me check.

Comment: Therefore, you have to have a primary in both 80 MHz

Question: So, there are no primaries in each 80 MHz?

Comment: No.

At 2020-01-16T14:24-08:00 Shubhodeep continues from page 4 of his submission.

Comment: I don’t agree with you. There is an existing transmission handshake. For example, there is a DL followed by UL. The DL has already cleared the channel.

Response: If there is a hidden node, it will not know that a device is receiving. If transmissions continue at the UE, it harms the hidden node. Receiver-assisted LBT does help here. E.g., RTS/CTS.

Comment: Now, you are talking about hidden nodes.

Response: Sometimes the problem is hidden nodes at the AP, sometimes at the client node. I think no technology shall send an Acknowledgment without performing LBT. However, the IEEE 802.11 does this.

At 2020-01-16T14:30-08:00 Shubhodeep continues from page 5. 2020-01-16T14:42-08:00 Shubhodeep concludes his presentation.

At 2020-01-16T14:43-08:00 the chair continues presenting his submission 11-19/2150r6 from page 89. At 2020-01-16T14:46-08:00 attendees discuss page 93:

Comment: Let’s look at what this comment did in past years. The main topic was a common preamble and PIFS access. In both cases, we sent a lot of liaison letters. It took a lot of time at 3GPP to review them. And on PIFS we told them, oops, we changed our mind. And on preamble, we told them it is good they did not listen to us using the preamble because we had no clue how we implement our own technology. Not doing our homework here has caused overhead for our friends at other SDOs. Two thirds of the discussions at the workshop were on the two topics. It would be very helpful, to have a specific scope for this group. We should limit the scope so that we are not causing overhead to us and others.

Chair: I believe this SC is operated by formal and informal liaison letters. Our discussions have enabled people to discuss in other groups. There is a lot of value to have an open group for discussion. I suspect you are probably right that 5 GHz is not that important anymore. In the meantime, 802.11ax and 5 GHz should still be on our horizon. Going forward we will do more 802.11be and 6 GHz stuff.

Comment: We have not discussed anything specific to 802.11ax in this group.

Chair: We did. For example, spatial reuse.

Comment: This is general stuff. Not specific to 802.11be or 802.11ax.

Chair: Do you have better words for the scope?

Comment: Do you want to have a decision or motion on this scope?

Chair: It is not urgent. We can run it next time. We could change the scope when 802.11ax is done.

Comment: Given that 6 GHz is new and the regulatory situation is not decided, we should be careful not to cause overhead anymore. We were wrong several times and always needed to revert.

Chair: I agree, it is really bad that we were pushing and then had to back off. But my excuse is that we are working in a difficult environment.

Comment: You have been present at RAN1 two times. You know how much overhead it caused. They don’t have the luxury to cut discussions.

Comment: We need to wait at least until March or May to think about the scope. Let’s not rush here. We should act when we learn about issues regarding to our specs.

Chair: We should inform our groups.

Comment: That should be part of the scope that we inform our groups. It should say explicitly that we inform our groups. What about 60 GHz?

Comment: In general, I think the work of this group is done. The group has given visibility to items important to my company. It does not hurt to keep 5 GHz on the list.

Comment: In 802.11ax, we are harming coexistence by preamble puncturing. We talked about it. That is good. But we need something better. And in the adjacent room they decide something that is horrible to our legacy devices. This shows a severe lack of credibility of this group. It is totally inconsistent if we harm coexistence ourselves and then we complain about others. A self-assessment should be part of the scope.

Chair: I think you are suggesting another role for this SC. In the past we focused on outbound communication. This SC is our vehicle to influence other groups. You are suggesting to have a role that is more inbound. We could provide insight to 802.11ax, 802.11be, or 802.11ay. I believe this is important and in scope of this SC. I would certainly encourage discussions here that would improve coexistence to the other TGs of 802.11.

Comment: When it goes to a vote, all voting is dominated by the big companies. Just bringing submissions and putting them to a vote, doesn’t bring anything. We need our leadership here.

Comment: It is the working group that decides. We should work internally and advise the other groups.

Comment: We lack a position from the WG leadership on this side. We send so many LS and yet other TGs decided to harm our own technology.

Chair: Yes, we can be totally outvoted in 802.11ax. But we can also have a vote here and pass it over to 802.11ax. We have to persuade them that they change something. However, it is quite likely that they ignore it. You can always vote no and continue to comment. In my opinion this has led to good outcome.

Comment: No, that is not the case.

Chair: You need to persuade others. You need to create compelling cases. We also should look inwards. That is a very interesting for the expansion of the scope.

Comment: If we cannot influence other groups within the same WG how can we expect other SDOs to follow our advice?

Chair: We can influence other TGs and we have done a good job of influencing ETSI BRAN and 3GPP. That there is overhead at the other groups is their problem.

Comment: We have to constrain the scope to regulatory topics.

Chair: We don’t want to do this or it needs to go through 802.18.

At 2020-01-16T15:09-08:00 the chair reviews page 96 of his document.

At 2020-01-16T15:10-08:00 the chair declares that the January 2020 meetings of the Coexistence SC are adjourned. Therefore, the next session of the Coexistence SC, scheduled for PM2 today, is withdrawn.