IEEE P802.11
Wireless LANs

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| Minutes of the September 2019 Coexistences Standing Committee meetings |
| Date: 2019-10-18 |
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Abstract

This document contains the minutes of the September 2019 Coexistences Standing Committee meetings.

Location: 21° 0' 27.6912'' N, 105° 47' 0.7368'' E, JW Marriott Hotel, 8 Đỗ Đức Dục, Mễ Trì, Nam Từ Liêm, Hà Nội 100000, Vietnam

# Wednesday, 2019-09-18

At 2019-09-18T13:31+07:00 Andrew Myles calls the meeting of the Coexistence Standing Committee (SC) to order. A. Myles acts as chair of the SC. Guido R. Hiertz acts as secretary. A. Myles introduces document 11-19/1446r4. R3 of the document is on Mentor server. Any changes to this document will be uploaded as R4 of the submission.

At 2019-09-18T13:33+07:00 the chair presents page 7 of his submission.

Question: Are you considering another workshop?

Chair: I haven’t considered it. But please bring it up.

At 2019-09-18T13:36+07:00 the chair asks for approval of the agenda. Nobody objects. The chair continues presenting from page 10 of his document.

At 2019-09-18T13:39+07:00 the chair asks for approval of the SC’s July meeting minutes contained in document 11-19/1381r0. The SC approves the minutes by unanimous consent.

At 2019-09-18T13:40+07:00 the chair continues presenting from page 16 of his submission.

Comment: What is the scale on the left on page 17?

Chair: It’s the number of service providers or networks.

At 2019-09-18T13:41+07:00 the chair continues from page 19 of his document.

Comment: We cannot cannot approve the minutes of the workshop. Only the workshop members may approve the workshop’s minutes. Also, the workshop had individual and entity-based attendees. Hence, I propose that we move to endorse the minutes.

Comment: The workshop attendees are not meeting here. We have many more attendees here that did not attend the workshop. How could they approve or disapprove the minutes?

Comment: In July 2018, the SC had members disapproving minutes of a meeting they never attended. The situation is the same with this workshop. In this room we have many that did not attend the workshop. How do you decide whom to permit approving or disapproving the minutes?

Chair: I have taken your proposal into consideration.

At 2019-09-18T13:47+07:00 the chair continues from page 22 of 11-19/1446r4. At 2019-09-18T13:52+07:00 the chair presents 11-19/1448r2.

Comment: Do you want to give us some insight about the survey results?

Chair: I will do this later.

Chair: The results are what they are.

At 2019-09-18T13:55+07:00 the chair continues presenting from page 28 of 11-19/1446r4. At 2019-09-18T13:58+07:00 SC members discuss.

Comment: ETSI BRAN receives requests from 3GPP. At the moment there is some level of coordination because of TC BRAN.

Chair: The situation isn’t great but it’s okay.

At 2019-09-18T14:00+07:00 the chair presents 11-19/1398r1.

At 2019-09-18T14:03+07:00 the chair presents 11-19/1404r1. At 2019-09-18T14:05+07:00 attendees discuss.

Comment: It was in one of your earlier conclusion slides that most people prefer ETSI BRAN. However, we also heard the US does not want to be ruled by ETSI. ETSI BRAN has a global impact. Companies do not develop products for certain regions, only.

Chair: FCC has decided to stay out of the discussion. That is their ruling. Some discipline has come out of ETSI BRAN. There is certainly a perceived value of ETSI BRAN. I warn of 6 GHz not following 5 GHz rules.

Comment: In the US, FCC mandates type approval. Thus, every single radio device must be approved by FCC resp. associated test labs. In Europe, manufacturers may perform a self-assessment. Based on this assessment, products may be put on the European market. For self-assements, Harmonized Standards are provided.

At 2019-09-18T14:12+07:00 the chair continues presenting from page 31 of 11-19/1446r4. Attendees discuss about page 39.

Comment: You listed company names. However, some attendees are 802.11 members. They are individuals and they do not represent companies.

Chair: I have characterized each workshop submission as a company document because I believe that all submissions have a company background.

Comment: You mean the sponsor of the person?

Chair: In every case, the speakers identified themselves as being affiliated with a company. You are correct, they could have an opinion different from their sponsors.

At 2019-09-18T14:21+07:00 the chair continues from page 40. At 2019-09-18T14:31+07:00 attendees discuss page 50.

Comment: In the survey, ED without mentioning a common threshold is a wild west situation.

Chair: In all occurrences, “ED only” means that a single, harmonized ED threshold for all technologies is used.

Comment: The fact that the majority of survey respondents do not prefer an ED only solution shows the Wi-Fi bias of this survey.

At 2019-09-18T14:33+07:00 the chair continues from page 51 of his submission.

At 2019-09-18T14:39+07:00 chair presents 11-19/1469r1. At 2019-09-18T14:44+07:00 attendees discuss.

Comment: There is too much text. You need to simplify. We cannot draw conclusions from two presentations only. We must take a deeper look.

Chair: I believe there were two and a half documents at the workshop that are related. It is a summary of a long analysis. It’s many presentations. What’s nice about the two presentations is the conclusion, which should be acceptable to all stakeholders.

At 2019-09-18T14:47+07:00 the chair continues from page 57 of 11-19/1446r4.

Comment: Today’s APs frequently implement multiple virtual APs to operate multiple, separate SSIDs. For example, enterprise deployments very often implement at least a “guest,” a “company,” and a “management” WLAN. For each VAP resp. SSID a separate beacon frame is transmitted. At the basic modulation and coding scheme of 6 Mb/s each beacon transmission takes at least 500 µs. If APs transmit beacon frames using PIFS access, the total amount of beacon transmissions might exceed the 5 % restriction for short control signaling in EN 301 893.

At 2019-09-18T14:55+07:00 the chair continues from page 61 of his document.

Comment: For stability in time, beacon frames may be sent without backoff and just use a PIFS access. The target beacon time will experience less jitter.

Chair: Do these systems work today because they send beacons after a PIFS period?

Comment: I did not accuse anyone of doing so. However, the 802.11 market is huge and some products have been specialized for industrial use etc.

At 2019-09-18T15:05+07:00 the chair comments about page 67.

Chair: Exept for one product, I guarantee that all Cisco APs use a backoff for beacon transmission.

At 2019-09-18T15:08+07:00 attendes discuss about further use of short control signaling in 802.11.

Comment: What is with Wi-Fi direct?

Comment: In a Wi-Fi Direct network, the group owner transmits beacon frames. For legacy compatibility, the group owner appears as AP to devices that aren’t capable of Wi-Fi Direct.

Chair: With LAA there is only one device that transmits beacon-like signals. However, with NR-U there are many devices at a location. Then, there may be many short control signaling transmissions.

Comment: I appreciate all simulations and the efforts that are spent to create them. In this SC, too often attendees just dismiss the hard work of others w/o doing anything by themselves. It’s very easy to put a finger in the air and to claim that something is flawed without providing any evidence what would be wrong.

Comment: Often we are assuming full buffer which is not representative of reality. We are designing for load points that are unstable and unrealistic.

At 2019-09-18T15:15+07:00 the chair arrives at page 70.

At 2019-09-18T15:22+07:00 the chair presents 11-19/1474r1.

At 2019-09-18T15:25+07:00 the chair presents from page 79 of 11-19/1146r4. At 2019-09-18T15:29+07:00 an attendee makes an announcement.

Comment: I uploaded 11-19/1672r0 regarding the discussion of spectral masks.

At 2019-09-18T15:30+07:00 the chair declares the SC to be in recess.

# Thursday, 2019-09-19

At 2019-09-19T13:35+07:00 the chair calls the meeting to order. Andrew Myles acts as chair of the SC. Guido R. Hiertz acts as secretary. The chair begins from page four of 11-19/1446r4. The chair turns to page 101 of his document.

At 2019-09-19T13:36+07:00 SC attendees vote on the following motion:

“The participants in IEEE 802.11 Coex SC who attended the IEEE 802.11 Coexistence Workshop endorse the minutes (11-19-1380-03) of the IEEE 802.11 Coexistence Workshop held in Vienna, Austria in July 2019

Note: please do not vote if you did not attend the Workshop”

Moved: Guido R. Hiertz

Seconded: Alan Berkema

Result: Yes: 12, No: 0, Abstain: 2

At 2019-09-19T13:39+07:00 the chair presents page 102 of his submission. SC attendees vote on the following motion:

“The IEEE 802.11 Coexistence SC recommends to the IEEE 802.11 WG that a liaison (see 11-19-1448-01) be sent from the IEEE 802.11 WG to 3GPP RAN, 3GPP RAN1, ETSI BRAN, WFA, WBA and GSMA notifying of the availability of documents from the IEEE 802.11 Workshop (agenda, minutes, papers) and the results from the post workshop surveys (along with a caveat on their use)”

Moved: Evgeny Khorov

Seconded: Brian Hart

Result: Yes: 9, No: 0, Abstain: 4

At 2019-09-19T13:41+07:00 the chair presents page 105 of his document 11-19/1446r4.

At 2019-09-19T13:42+07:00 the chair presents submission 11-19/1474r1. Attendees discuss the document.

Comment: I don’t think it is going to be helpful to send this LS. The 3GPP community is working on their technology and they do not need recommendations.

Chair: You said the 3GPP community is aware of issues with SCS.

Comment: There was presence by 3GPP companies at our coexistence workshop.

Chair: In the past, we discussed the SCS topic at length.

Comment: The main idea is not talking about the problem but the proposed solution mentioned in the paper by IITP RAS. Their single simulation shows that without reservation signals LAA LTE suffers. With reservation signals, Wi-Fi suffers. The solution in the paper can help to mitigate LAA to LAA collisons.

Comment: We should not get into the business of proposing solutions to them.

Chair: The proposed liaison letter just makes 3GPP aware of the paper.

Comment: I am not in favor of sending the liaison letter to anyone. We should analyze the paper first.

Chair: The LS proposes that 3GPP adopts a similar mechanism as in the paper or that they must reduce the use of reservation signals.

Comment: 3GPP does not define any reservation signal.

Comment: Not everybody was at the workshop and so we should analyze the topic here first.

Comment: The liaison between 3GPP, here, and ETSI was not very efficient. We don’t have a solution. However, the proposal in the paper is something to look at. It seems that some appreciate that ETSI is a mediator. If we send this topic back to 3GPP now, it might not be the best approach. Maybe ETSI should receive this letter. ETSI BRAN are the experts. The LS could be sent to 3GPP after the topic has been presented at ETSI.

Chair: If 3GPP found this attractive, it would be good.

Comment: The 3GPP people are at ETSI, they can take it back. I support the previous speaker

Comment: As IEEE we should not be sending this liaison, we discuss it in ETSI.

At 2019-09-19T13:52+07:00 the SC votes on the following motion.

“The IEEE 802.11 Coexistence SC recommends to the IEEE 802.11 WG that a liaison (see 11-19-1474-01) be sent from the IEEE 802.11 WG to 3GPP RAN1 (copied to ETSI BRAN) in relation to reservation signals and the LBT mechanism”

Moved: Evgeny Khorov

Seconded: Brian Hart

Result: Yes: 2, No: 16, Abstain: 4

At 2019-09-19T13:54+07:00 the chair continues presenting from page 106 of his presentation.

Comment: I am one of the candidates for the ETSI TC BRAN chair. Please approach me if you would like to discuss.

Comment: During the October ETSI BRAN meeting we will have only one session to discuss 6 GHz. The name of the Harmonized Standard is EN 303 687. In that meeting, we are very much guided by the work in ECC. Until TC BRAN’s December meeting, I don’t expect much input or work.

At 2019-09-19T13:58+07:00 the chair presents page 109 of his document.

Comment: ETSI BRAN must introduce a test for the 802.11a preamble. Since the preamble is used in a normative reference it is an essential requirement. Regulatory authorities demand tests for each essential requirement. Under the upcoming version of EN 301 893, all devices operating ED at a level of −62 dBm must respect the 802.11a preamble. This will be tested.

At 2019-09-19T14:00 the chair presents page 112 of his submission.

Comment: ETSI BRAN held an ad hoc meeting at Rohde & Schwarz in Munich. Several tests have been conducted. It was tested if devices would defer to an 802.11a preamble without anything else following. Devices failed these essential tests.

Comment: It seems that devices require more 802.11 signals following an 802.11a preamble to reliably detect the preamble. Otherwise, they just ignore the preamble and do not defer for the duration indicated in the preamble.

Comment: At Rohde & Schwarz, devices were tested for floating thresholds. There were mixed results. With background noise, devices sometimes had an offset to their sensing threshold. Sometimes, the devices maintained the regulatory limit. It’s clear that devices are not operating by the books.

At 2019-09-19T14:08+07:00 the chair presents page 117 of his document.

At 2019-09-19T14:09+07:00 David Boldy presents document 11-19/1672r0.

Comment: Regulatory authorities do not want any relaxation. They are afraid that puncturing will make efficiency worse. Puncturing negatively affects the performance of legacy equipment. Also, relaxed puncturing rules may impact radar detection.

Comment: The channel mask issue is not only related DFS. I don’t think that occupied bandwidth is used much in ETSI. Any fear introducing it brings friction.

At 2019-09-19T14:23+07:00 the chair continues from page 122 of 11-19/1446r4.

Comment: The preamble is not robust enough to just rely on its first 20 µs. More information is needed to reduce the number of false positives resp. negatives. The book from Eldad and Robert already reports about this issue.

At 2019-09-19T14:30+07:00 the chair arrives at page 130 of his submission. At 2019-09-19T14:31+07:00 David Boldy presents 11-19/1681r0.

Comment: Sensing twice means sensing two times for 4 µs within 16 µs?

Comment: Yes.

Comment: What do we do about multi-carrier LBT?

Comment: With 802.11 chanel bonding, a device tests a neighboring channel 25 µs prior to its transmission. Since this period is very short, the device misses the vast majority of preamble transmissions in a neighboring channel. It would only see the preamble if the transmission started at the very moment the devices senses the neighboring channel.

Chair: We need to understand how real-world Wi-Fi products impact coexistence.

Comment: If we see a problem, we should address it in 802.11 but not in this SC.

At 2019-09-19T14:41+07:00 the chair arrives at page 133 of his document. At 2019-09-19T14:42+07:00 the chair declares the meetings of the SC adjourned.