IEEE P802.11
Wireless LANs

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| IEEE 802.11bf - March 2021 Plenary Meeting Minutes |
| Date: 2021-03-15 |
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Abstract

Rev 0: This document contains the meeting minutes of IEEE 802.11bf teleconferences held during the March 2021 IEEE 802.11 Plenary meeting.

**Tuesday, March 9, 2021, 9:00-11:00 am (ET)**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: <https://mentor.ieee.org/802.11/dcn/21/11-21-0206-03-00bf-tgbf-meeting-agenda-2021-03-plenary.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. Approve TGbf meeting minutes
7. Technical motion (Motion 14)
8. Presentation of submissions
9. Any other business
10. Recess/Adjourn
11. The chair, Tony Xiao Han, calls the meeting to order at 9:00am (about 150 persons are on the call after a few minutes of the meeting).
12. The chair goes through “Meeting Protocol, Attendance, Voting &Documentation Status” (slide 4), “Participants have a duty to inform the IEEE” (slide 6), and “Ways to inform IEEE” (slide 7).

The chair makes a Call for Potentially Essential Patents. No potentially essential patents reported, and no questions asked.

The chair goes through “Other Guideline for IEEE WG meeting” (slide 8), “Patent-related information” (slide 9), “ IEEE SA Copyright Policy” (slides 10 and 11), “Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct” (slide 12), “Participants in the IEEE-SA “individual process” shall act independently of others, including employers”(slide 12), and “IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints” (slide 14), and “Required notices” (slide 15).

The chair goes through the agenda (slide 16) and asks if there are and questions or comments on the agenda. No response from the group.

The chair asks if there is any objection to approve the agenda with unanimous consent. No objection from the group so the agenda is approved.

1. The Chair presents the TGf timeline.
2. The Chair presents slide 18, Call for contributions.
3. The Chair presents the teleconference times.
4. Approve TGbf meeting minutes

**Motion - Minutes:**  Move to approve TGbf minutes of meetings and teleconferences from January 2021 meeting to today:

January plenary: <https://mentor.ieee.org/802.11/dcn/21/11-21-0120-01-00bf-meeting-minutes-january-2021.docx>

Teleconferences January - March:

<https://mentor.ieee.org/802.11/dcn/21/11-21-0227-01-00bf-802-11bf-teleconference-minutes-february-2021.docx>

**Move:** Leif Wilhelmsson

**Second:** Rui Yang

Motion passed by unanimous consent.

1. Technical motion (Motion 14)

**Motion:** Move to add the following to 11bf SFD:

 A sensing session may be comprised of multiple burst instances.

**Move:** Sang Kim

**Second:** Cheng Chen

**Result**: Y/N/A: 65/2/14

Note: The related document is 11-21/0145r4

1. Presentation of submissions

**11-21/0145r4, “Collaborative WLAN sensing – Follow Ups”, Sang Kim (LGE)**

The contribution has already been presented, and presentation is only concerned with SP4.

**SP 4: Do you support to move the following into 11bf SFD?**

**-**More than one sensing responder may participate in a measurement and reporting phases of a sensing session.

**Result:** Y/N/A: 73/7/20

**11-20/1851r4, “Overview of Wi-Fi sensing protocol”, Cheng Chen (Intel):**

The contribution has already been presented, and presentation is only concerned with SP1.

**SP1: Do you agree with the following?**

* 1. A sensing session is composed of one or more of the following phases: ~~negotiation~~ setup phase, measurement phase, reporting phase, and termination phase.
* In the ~~negotiation~~ setup phase, a sensing session is established, and operational parameters associated with the sensing session are determined and may be exchanged between STAs.
* In the measurement phase, sensing measurements are performed ~~and sensing results are obtained or reported~~.
* In the reporting phase, sensing measurement results are reported.
* In the termination phase, STAs stop performing measurements and terminate the sensing session.

**Result:** Y/N/A: 56/7/19

**11-21/365r1, “Wi-Fi Sensing Parameters”, Halise Türkmen (Vestel):** the contribution is concerned with different PHY parameters that may affect the sensing performance.

After some discussion, e.g. concerning whether this was only for sub 7 GHz, Halise suggestes that the SPs will be updated based on the comments and run at a later time.

**11-21/0357r0, “Discussion of Sensing Measurement Result Types”, Claudio de Silva (Intel):** The main topic of the presentation is whether the CSI matric should be considered as a sensing measurement result type.

**Q:** This has already been used in the 60 GHz? I am a bit worried about the resolution for sub 7 GHz.

**A:** In 60 GHz we feedback an index representin what was the best beamforming matrix. I don’t have any results, so I think we need to study it.

**Q:** Do you think we need any PHY changes or that we can just reuse what is available?

**A:** We would like to avoid changes except for the sensing interface.

**Straw Poll:** Do you agree that CSI matrix feedback should be defined as a sensing measurement result type?

The Chair announces that we are out of time and explains that he will allocate some time in the next session to continue the Q&A.

1. The Chair asks if there is any other business. No response from the group.
2. The meeting is recessed without objection at 11.01 am (ET).

**Friday, March 12, 2021, 9:00-11:00 am (ET)**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: <https://mentor.ieee.org/802.11/dcn/21/11-21-0206-04-00bf-tgbf-meeting-agenda-2021-03-plenary.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. Presentation of submissions
7. Technical motions (Motion 15, 16)
8. Any other business
9. Recess/Adjourn
10. The chair, Tony Xiao Han, calls the meeting to order at 9:00am (about 125 persons are on the call after a few minutes of the meeting).
11. The chair goes through “Meeting Protocol, Attendance, Voting &Documentation Status” (slide 4), “Participants have a duty to inform the IEEE” (slide 6), and “Ways to inform IEEE” (slide 7).

The chair makes a Call for Potentially Essential Patents. No potentially essential patents reported, and no questions asked.

The chair goes through “Other Guideline for IEEE WG meeting” (slide 8), “Patent-related information” (slide 9), “ IEEE SA Copyright Policy” (slides 10 and 11), “Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct” (slide 12), “Participants in the IEEE-SA “individual process” shall act independently of others, including employers”(slide 12), and “IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints” (slide 14), and “Required notices” (slide 15).

The chair goes through the agenda (slide 22) and asks if there are and questions or comments on the agenda. No response from the group.

The chair asks if there is any objection to approve the agenda. No objection from the group so the agenda is approved.

1. The Chair presents the TGf timeline.
2. The Chair presents slide 24, Call for contributions.
3. The Chair presents the teleconference times.
4. Presentation of submissions

**11-21/0357r0, “Discussion of Sensing Measurement Result Types”, Claudio de Silva (Intel):** This is a continuation from the last session, where we ran out of time.

In the discussion of the SP, several persons express concerns that this is much more detailed than what has discussed previously, and that is also includes possible changes to PHY. Several people believe this needs to be discussed in more detail before being able to make a decision.

Clauido emphasizes that this is not a motion, but a SP to get a feeling for what the group believes.

Another concern that is expressed is that this CSI report is supported in 11n, but not in 11ac, 11ax, and 11be. Related to this there is question whether the idea is to add this CSI meauremetn as one alternative, not to define it as the only one.

Claudio confirms that the proposal is to add it as one possibility.

After some discussions, the text of the SP is updated and a note is added. The SP now reads:

**Straw Poll:** Do you agree that CSI matrix should be considered as a sensing measurement result type for sub-7 GHz applications?

Note: CSI matrix as described in slide 9.

**Result:** Y/N/A: 45/4/91

**11-21/0369r0, “Comparison of FTM and sensing procedure”, Cheng Chen (Intel):** The presentation provides an overview of FTM and stresses that many things can be reused for sensing.

**Q:** I believe there are some more similarities that you don’t cover. There are things available in relation to FTM, but maybe a slightly different term is used. For instance, one-to-many is supported iby FTM.

**11-21/0370r0, “Considerations of sensing negotiation”, Cheng Chen (Intel):** Different situations are discussed, and examples are givenwhen negotiation is needed and when it is not needed.

**Q:** Is the sensing response within SIFS?

**A:** Yes.

The Chair announces that we are out of time and explains that he will allocate 15 minutes in the next session for the SP.

1. The Chair asks if there is any other business. Claudio asks if he can get 5 minutes in the next session to talk about the SFD. Tony agrees to this.
2. The meeting is recessed without objection at 11.01 am (ET).

**Monday, March 15, 2021, 9:00-11:00 am (ET)**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: <https://mentor.ieee.org/802.11/dcn/21/11-21-0206-05-00bf-tgbf-meeting-agenda-2021-03-plenary.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. Presentation of submissions
7. Technical motions (Motion 15, 16)
8. Any other business
9. Adjourn
10. The chair, Tony Xiao Han, calls the meeting to order at 9:00am (about 45 persons are on the call after a few minutes of the meeting).
11. The chair goes through “Meeting Protocol, Attendance, Voting & Documentation Status” (slide 4), “Participants have a duty to inform the IEEE” (slide 6), and “Ways to inform IEEE” (slide 7).

The chair makes a Call for Potentially Essential Patents. No potentially essential patents reported, and no questions asked.

The chair goes through “Other Guideline for IEEE WG meeting” (slide 8), “Patent-related information” (slide 9), “ IEEE SA Copyright Policy” (slides 10 and 11), “Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct” (slide 12), “Participants in the IEEE-SA “individual process” shall act independently of others, including employers”(slide 12), and “IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints” (slide 14), and “Required notices” (slide 15).

The chair goes through the agenda (slide 26) and asks if there are and questions or comments on the agenda. No response from the group.

The chair asks if there is any objection to approve the agenda. No objection from the group so the agenda is approved.

1. The Chair presents the TGf timeline.
2. The Chair presents slide 28, Call for contributions.
3. The Chair presents the teleconference times.
4. Presentations

Claudio explains the plans regarding the SFD. The goal is to generate a first draft of the SFD this week including the motions we have run this far.

**Q:** I have a procedureal question. Who has the authority to start the SFD? Maybe we don’t have enough results to start the SFD?

**A:** We usually start with something very thin.

**11-21/0370r0, “Considerations of sensing negotiation”, Cheng Chen (Intel):**

**Straw Poll 1: Do you agree with the following?**

* 11bf shall define an optional negotiation process in the sensing setup phase for ~~the~~ a sensing initiator and sensing responder(s) to exchange and agree on operational parameters associated with ~~the~~ a sensing session.

**Result:** Y/N/A: 20/3/11

**Q:** Have we agreed there will always be a set-up phase? It seems there can be situations where this is not needed

**Q:** Are the parameters optional or does it have to be parameters present?

**A:** I believe there has to be parameters

**11-21/0351r2, “Threshold based sensing measurement”, Yingxiang Sun (Huawei):** This contribution is concerned with means to us a threshold to determine whether a measurement report should be transmitted. By only transmitting measurement results when something has actually happened channel resources as well as power can be saved.

**Q:** I see some merits, but I have some question about implementation. Also, it is not clear to me how to distinguish between something not been sent and something being sent but not being received.

**A:** This is at least in part counteracted by the regular reporting.

**Q:** I see that there could be a cost in terms of memory requirements needed. I believe it could be a capability and that this could be an optional feature.

**A:** Maybe I can do some experiment to evaluate this and then come back.

**Q:** I believe there is an advantage in that less airtime is needed, but I also fear that it may cost in term of memory and computational complexity. Therefore, I also believe it should be optional.

**Q:** On slide 8, when do you plan to submit the report in the timeline? In what order? At the same time?

**A:** I believe several options are possible.

**Q:** If you allocate time slots for feedback, it seems you are still wasting the resources even if no sensing report is sent.

**Q:** Do you suggest to have the actual formulas in the specification? Usually we don’t have these details in the specification.

**Q:** I would suggest to add that this is optional. I will not be able to support this if it is mandatory.

**Q:** It says “could consider”, and then we may decide not to include it. Is that the intention?

**A:** Yes.

**Q:** Do you run this SP just to collect feedback, or to convert it into a motion?

**A:** Just to collect feedback.

**Straw Poll:** **Do you agree that 802.11 TGbf~~11bf~~ could consider the following threshold based feedback in the proposed threshold based sensing measurement (TBSM)?**

* The current measured CSI would be compared with the previous measured CSI. The difference between them, namely, CSI variation, can be quantifiable.
* A threshold could be configured as one of the feedback criterion, which could determine if feedback would be performed.
* By comparing the CSI variation with the threshold, the sensing responders would send the feedback to the sensing initiator if the feedback criteria is met.

**Result:** Y/N/A: 12/4/19

**11-21/0352r1, “WLAN sensing link level simulation - follow ups”, Rui Du (Huawei**): In this contribution, an example of the link level simulation with ray tracing channel at 60GHz in indoor scenario is shown and discussed.

**Q:** What is the purpose of the simulations? For comparing proposals?

**A:** Basically, to evaluate proposals.

**Q:** Do you expect a common simulation platform to be available and to be used by all?

**A:** I believe different contributions can have different simulators, which need to be calibrated.

**Q:** I believe this is quite a complicated task. We have done similar things in the past, but for much simpler set-ups, and it is a lot of work.

**A:** I believe we could use the same channel model. I think that maybe we can share the channel model.

**Straw Poll 1:** Do you support that the link level simulation framework proposed in slide 4 could be used in WLAN sensing simulation?

**Result:** Y/N/A: 13/8/13

The Chair announces that we are out of time.

1. The Chair asks if there is any other business. No response from the group.
2. The meeting is adjourned without objection at 11.00 am (ET).