IEEE P802.11
Wireless LANs

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| IEEE 802.11bf – Teleconference Minutes March 2021  |
| Date: 2021-03-15 |
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Abstract

This document contains minutes for the TG 802.11bf teleconference in March 2021.

Rev 0: Minutes for TG 802.11bf teleconference on 23rd of March.

**Tuesday, March 23, 2021, 10:00-12:00 pm (ET)**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: <https://mentor.ieee.org/802.11/dcn/21/11-21-0502-03-00bf-tgbf-meeting-agenda-2021-03-04.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. Any other business?
8. Adjourn
9. The chair, Tony Xiao Han, calls the meeting to order at 10:00am (about 35 persons are on the call after a few minutes of the meeting). The secretary, Leif Wilhelmsson has announced that he will not be available and Sang Kim has agreed to take the minutes.
10. 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. Solomon Trainin stated that his contribution is related to Motion 16 and asked to place Motion 16 on the table after his presentation. Chair asked the mover for Motion 16 and Sang Kim as a mover said the motion would be discussed after Solomon’s presentation.

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 (slide 17).
2. The Chair presents slide 18, Call for contributions.
3. The Chair presents the teleconference times (slide 19).
4. Presentations:

**Technical motion (Motion 15)**

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

* A sensing session is composed of one or more of the following phases: setup phase, measurement phase, reporting phase, and termination phase.
	+ In the 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.
	+ In the reporting phase, sensing measurement results are reported.
	+ In the termination phase, STAs stop performing measurements and terminate the sensing session.

**Move:** Cheng Chen

**Second:** Rajat Pushkarna

**Result**: Y/N/A: 24/1/5, motion passes

Note: The related document is 20/1851r4.

**11-21/0504r0, “Specification Framework for TGbf”, Claudio da Silva (Intel):**

Claudio went over the early draft of the SFD. It contains the motions approved by March Plenary. Two different PHY sections are placed: Sub-7 GHz PHY and 60 GHz PHY. In sub-7 GHz only PHY service interface subclauses of HT, VHT, and HE are included. Also, the R1 of EHT will be included. In the 60 GHz PHY subclause is not included because PHY changes are allowed in PAR. According to TGbf timeline, we already had 2 meetings and 5 meetings remain until D0.1 (January 2022), and it is thus estimated that closing of the SFD will be July or September this year. Draft will contain the descriptions of functional blocks in the SFD.

**Q:** It is helpful and usual way in other TGs to include the related contribution references along with motion numbers.

**A:** It is maintained in TGbf motion list documents by Chair and editor is more than happy to include it.

**Q:** Are WLAN sensing procedures described in the existing MLME subclauses or in new subclause?

**A:** At this time, new MLME for sensing may be desirable, but this is a suggestion for the time being.

**Q:** Clarification question on editor’s note is raised.

**A:** It is placed to specify related subclauses. It will be changed if input is provided and will be cleared as progress is made.

**Q:** Question is raised whether we will work on 2 documents.

**A:** We will minimize the working on 2 documents (SFD and Draft) because it can be problematic.

**Q:** SFD is not tied to MLME as in 11ac, 11ax, and 11be. Instead it has two parts, PHY and MAC.

**A:** This is similar what we have done in 11ay. If this will cause the problem or does not work, then we can go back.

**Q:** Suggestion is made to have 2 subclauses in MAC: MAC for sub-7 GHz and MAC for 60 GHz (Rui Yang)

**A:** We are not changing the MAC, but MLME as in the contribution by Solomon Trainin.

**Q:** What is the future plan?

**A:** The goal is to keep this document updated and the suggestion is to produce new revisions either before or after IEEE meetings. When an update is made, e-mail notification will be sent out over TGbf reflector.

**11-21/0352r1, “WLAN sensing link level simulation - follow ups”, Rui Du (Huawei):**

Continuation of SP discussions, especially SP2 and SP3:

**Q:** What is the intent of SP2?

**A:** Opinion on ray tracing is being sought. If “yes”, the channel model document will contain it.

**Q:** Is ray tracing both for sub-7 GHz and 60 GHz?

**A:** At this time, at least 60 GHz is being focused.

**Q:** We already have 11n-based channel mode for sub-7 GHz.

**A:** 11n-based channel model is for data communications. For sensing channel model, we will require different channel model. Of course, 11n-based channel model can be modified.

**Straw Poll 2: Do you support that ray tracing could be adopted in WLAN sensing channel model generation?**

**Result:** Y/N/A: 19/5/15

No question is noted for SP 3.

**Straw Poll 3: Do you support that the living room could be one of the scenarios for WLAN sensing?**

**Result:** Y/N/A: 26/3/11

**11-21/0407r3, “Multi-Band WiFi Fusion for WLAN Sensing”, Pu (Perry) Wang (MERL):**

This contribution reports multi-band Wi-Fi fusion between Fine-grained CSI at sub-7 GHz (2.4 GHz and 5 GHz) ans Mid-grained beam measurements (e.g., beam SNRs) at 60 GHz. In Particular, it aims to promote the use of deep learning-based fused WiFi channel measurements/results at different frequency bands for WLAN sensing.

**Q:** Do you assume simultaneous transmission both from sub-7 GHz and 60 GHz?

**A:** Yes, at this time, but time interval between transmissions can be considered.

**Q:** Are you proposing a fusion? (Oscar Au).

**A:** That is the intention.

**Q:** Different applications may require different fusions.

**A:** One may work on generalization, but may then loose performance in some applications.

**Q:** Should fusion be standardized?

**A:** Good to have. Strongly encourage to consider fusion.

**Q:** Which layer is responsible for fusion?

**A:** Not sure, but it can be easily done at sensing processor or receiver.

**Q:** What is the rationale of feature permutation?

**A:** CSI measurement is multi-dimensional while beam SNR is one dimensional. We don’t know which local feature matches to each other. For example, in slide 9, we don’t know whether u1 is matched to L1, L2, or L3.

**Q:** How to maintain the synchronization?

**A:** CSI requires more frame rate. One beam measurement with several CSI measurements.

**Q:** SP 2 requires 60 GHz and sub-7 GHz radios and it is strong requirements. Instead we can have multiple measurements and combine for 60 GHz or sub-7 GHz. In addition, it doesn’t need to standardize fusion measurement.

The Chair announces that we are out of time. We will contine the discussion in the next conference call (April 6)

1. The Chair asks if there is any other business. No response from the group.
2. The meeting is adjourned without objection at 12:02 pm (ET).

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 3/23 | Aboulmagd, Osama | Huawei Technologies Co., Ltd |
| TGbf | 3/23 | Au, Oscar | Origin Wireless |
| TGbf | 3/23 | Aygul, Mehmet | VESTEL; IMU |
| TGbf | 3/23 | Bahn, Christy | IEEE STAFF |
| TGbf | 3/23 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 3/23 | Berger, Christian | NXP Semiconductors |
| TGbf | 3/23 | Chen, Cheng | Intel Corporation |
| TGbf | 3/23 | Choi, Jinsoo | LG ELECTRONICS |
| TGbf | 3/23 | da Silva, Claudio | Intel Corporation |
| TGbf | 3/23 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 3/23 | Fang, Yonggang | Self |
| TGbf | 3/23 | feng, Shuling | MediaTek Inc. |
| TGbf | 3/23 | HAN, Xiao | Huawei Technologies Co., Ltd |
| TGbf | 3/23 | Haskou, Abdullah | InterDigital, Inc. |
| TGbf | 3/23 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 3/23 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 3/23 | Kwon, Young Hoon | NXP Semiconductors |
| TGbf | 3/23 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 3/23 | Lindskog, Erik | SAMSUNG |
| TGbf | 3/23 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 3/23 | Mirfakhraei, Khashayar | IEEE member / Self Employed |
| TGbf | 3/23 | NANDAGOPALAN, SAI SHANKAR | Infineon Technologies |
| TGbf | 3/23 | Ozbakis, Basak | Vestel Electronics Corp. |
| TGbf | 3/23 | PESIN, ANTHONY | InterDigital, Inc. |
| TGbf | 3/23 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 3/23 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 3/23 | Restuccia, Francesco | Northeastern University |
| TGbf | 3/23 | Solaija, Muhammad Sohaib | Istanbul Medipol University; Vestel |
| TGbf | 3/23 | Sosack, Robert | Molex Incorporated |
| TGbf | 3/23 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 3/23 | Sun, Yingxiang | Huawei Technologies Co., Ltd |
| TGbf | 3/23 | Teran, Jesus Gutierrez | IHP GmbH |
| TGbf | 3/23 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 3/23 | Varshney, Prabodh | Nokia |
| TGbf | 3/23 | Wang, Chao Chun | MediaTek Inc. |
| TGbf | 3/23 | Wang, Pu | Mitsubishi Electric Research Labs (MERL) |
| TGbf | 3/23 | Xin, Yan | Huawei Technologies Co., Ltd |
| TGbf | 3/23 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 3/23 | Yee, James | MediaTek Inc. |
| TGbf | 3/23 | Zhang, Meihong | Huawei Technologies Co., Ltd |
| TGbf | 3/23 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |