IEEE P802.11
Wireless LANs

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| IEEE 802.11bf – Teleconference Minutes May - July 2022  |
| Date: 2022-07-13 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Leif Wilhelmsson | Ericsson AB | Mobilvägen 1, 22632 Lund, Sweden | +46-706-216956 | leif.r.wilhelmsson@ericsson.com |
| Assaf Kasher | Qualcomm |  |  |  |
| Sang Kim | LGE |  |  |  |

Abstract

This document contains minutes for the TG 802.11bf teleconferences in May - July 2022.

Rev 0: Minutes for TG 802.11bf teleconference on the19th of May 2022.

Rev 1: Minutes for TG 802.11bf teleconference on the 24th of May 2022 are added.

Rev 2: Minutes for TG 802.11bf teleconference on the 31st of May 2022 are added.

Rev 3: Lists of attendees for teleconferences on 24th and 31st of May 2022 are added.

Rev 4: Minutes for TG 802.11bf teleconference on the 9th of June 2022 are added.

Rev 5: Minutes for TG 802.11bf teleconference on the 14th of June 2022 are added.

Rev 6: Lists of attendees for teleconferences on 9th and 14th of June 2022 are added.

Rev 7: Minutes for TG 802.11bf teleconference on the 20th of June 2022 are added.

Rev 8: Minutes for TG 802.11bf teleconference on the 21st and 23rd of June 2022 are added. In addition, some typos are corrected.

Rev 9: Minutes for TG 802.11bf teleconference on the 30th of June are added.

Rev 10: Minutes for TG 802.11bf teleconference on the 5th of July are added.

Rev 11: List of attendees for teleconference on the 5th of July is added.

Rev 12: Minutes for TG 802.11bf teleconference on the 7th of July are added.

Rev 13: Typo corrected.

Rev 14: List of attendees for teleconference on the 7th of July added.

**Thursday, May 19, 2022, 11:00 pm-01:00 am (ET)**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document:

<https://mentor.ieee.org/802.11/dcn/22/11-22-0797-01-00bf-tgbf-meeting-agenda-2022-05-teleconference.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 Han, calls the meeting to order at 11:00 pm ET (about 20 persons are on the call after a few minutes of the meeting).
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 meetings” (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 13), 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 any questions or comments on the agenda.

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

1. The Chair presents the TGbf timeline (slides 17). Tony reminds the group that 20th of May is the last day for providing comments on D0.1.
2. The Chair presents slide 18, Call for contributions.
3. The Chair presents the teleconference times (slides 19 and 20).
4. Presentations:

**11-22/0781r2, “Changes in EDMG Multistatic PPDU”, Assaf Kasher (Qualcomm):** The syncfield has been updated and Assaf goes through the proposed new structure.

Q: I believe we should keep the Data field. The design has been developed under a long time and I believe it involves quite some work to change it.

Q: I don’t think there is much of a difference in practice, so I prefer to keep the old structure.

**Straw Poll:** From the PPDU structures presented in slide 3 of 11-22-781r2:

* Option 1: I prefer the modified old structure
* Option 2: I prefer the new structure
* Option 3: I don’t care

**Result:** Y/N/A: 7/15/7

**11-22/0798r1, “PDT: Updates on sensing Measurement setup termination frame”, Pei Zhou (OPPO):** The contribution is concerned with the setup termination frame.

The text is slightly updated based on feedback from the group, and a revision 2 of the document is generated for the SP.

**Straw Poll:** Do you support including the text proposed in the following document into the IEEE 802.11bf draft amendment?

* 22/0798r2 Updates on sensing measurement setup termination frame

**Result:** Y/N/A: 17/5/5

**11-22/0799r0, “PPDU formats for DMG sensing”, Rui Du (“Huawei”):** The use of different PPDU formats for different types of DMG sensing is discussed.

**Straw Poll 1:** Do you support to add the following to the 11bf SFD.

* For all the DMG sensing types, both control mode and SC mode PPDU should be considered.

**Straw Poll 2:** Do you support to add the following to the 11bf SFD.

* PPDU with TRN should be adopted in DMG coordinated monostatic sensing, and TRN parameters could be negotiated in the coordinated monostatic sensing.

Based on the discussions, it is decided to defer both SPs.

**11-22/0800r0, “DMG passive sensing in DTI”, Narengerile (Huawei):** The presentation discusses different aspects for DMG passive sensing.

Run out of time.

The chair informs that he will allocate time in the next for finalizing the presentation.

1. The chair asks if there is AoB. No response from the group.
2. The meeting is adjourned without objection at 01:00am ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 5/19 | Au, Oscar | Origin Wireless |
| TGbf | 5/19 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 5/19 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 5/19 | Eitan, Alecsander | Qualcomm Incorporated |
| TGbf | 5/19 | feng, Shuling | MediaTek Inc. |
| TGbf | 5/19 | Hsu, Ostrovsky | Xiaomi Inc. |
| TGbf | 5/19 | Kasher, Assaf | Qualcomm Incorporated |
| TGbf | 5/19 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 5/19 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 5/19 | Lin, Zinan | InterDigital, Inc. |
| TGbf | 5/19 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 5/19 | Motozuka, Hiroyuki | Panasonic Holdings Corporation |
| TGbf | 5/19 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 5/19 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 5/19 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 5/19 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 5/19 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 5/19 | Zhang,Jiayi |

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**Tuesday, May 24, 2022, 10:00 am-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/22/11-22-0797-03-00bf-tgbf-meeting-agenda-2022-05-teleconference.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 Han, calls the meeting to order at 10:00 am ET (about 50 persons are on the call after 10 minutes of the meeting).
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 meetings” (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 13), 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 17) and asks if there are any questions or comments on the agenda.

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

1. The Chair presents the TGbf timeline (slides 18).
2. The Chair presents slide 19, Call for contributions.
3. The Chair presents the teleconference times (slides 20 and 21).
4. Presentations:

**11-22/0820r0, “IEEE 802.11bf CC40 comments”, Claudio da Silva (Meta):** Claudio goes through the excel sheet where he has categorized the received comments. In total slightly more than 900 comments were submitted.

**11-22/0800r1, “DMG passive sensing in DTI”, Narengerile (Huawei):** The presentation discusses different aspects for DMG passive sensing. This is a revised version of what was presented in the last session where we run out of time during the presentation.

The SPs are not run since this was the first time it was presented and Narengerile wants to give the group some time to digest the presentation.

The Chair asks about next steps. Narengerile explains that she will collect more information off-line and based on that take decision about what to do next.

**11-22/0803r0, “DMG/EDMG Link Level Simulation Platform”, Steve Blandino (NIST):** A platform for performing link level simulations is presented.

We are out of time and there is no time for Q&A

1. The chair asks if there is AoB. The chair announces that if there are no additional requests for presentations, he intends to cancel the meeting on Thursday. No response from the group.
2. The meeting is adjourned without objection at 12:00pm ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 5/24 | Aboulmagd, Osama | Huawei Technologies Co., Ltd |
| TGbf | 5/24 | Au, Oscar | Origin Wireless |
| TGbf | 5/24 | Aygul, Mehmet | VESTEL; IMU |
| TGbf | 5/24 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 5/24 | Dash, Debashis | Apple Inc. |
| TGbf | 5/24 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 5/24 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 5/24 | feng, Shuling | MediaTek Inc. |
| TGbf | 5/24 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 5/24 | HAN, Xiao | Huawei Technologies Co., Ltd |
| TGbf | 5/24 | Hsu, Ostrovsky | Xiaomi Inc. |
| TGbf | 5/24 | Jang, Insun | LG ELECTRONICS |
| TGbf | 5/24 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 5/24 | Kasher, Assaf | Qualcomm Incorporated |
| TGbf | 5/24 | katla, satyanarayana | InterDigital, Inc. |
| TGbf | 5/24 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 5/24 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 5/24 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbf | 5/24 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 5/24 | Ozbakis, Basak | Vestel Electronics Corp. |
| TGbf | 5/24 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 5/24 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 5/24 | Ryu, Kiseon | Ofinno |
| TGbf | 5/24 | Shellhammer, Stephen | Qualcomm Incorporated |
| TGbf | 5/24 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 5/24 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 5/24 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 5/24 | Unterhuber, Paul | German Aerospace Center (DLR) |
| TGbf | 5/24 | Varshney, Neeraj | National Institute of Standards and Technology |
| TGbf | 5/24 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 5/24 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 5/24 | Zhang, Jiayi | Ofinno |
| TGbf | 5/24 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Tuesday, May 31, 2022, 10:00 am-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/22/11-22-0797-04-00bf-tgbf-meeting-agenda-2022-05-teleconference.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 Han, calls the meeting to order at 10:00 am ET (about 50 persons are on the call after 10 minutes of the meeting).
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 meetings” (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 13), 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 18) and asks if there are any questions or comments on the agenda.

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

1. The Chair presents the TGbf timeline (slides 19).
2. The Chair presents slide 20, Call for contributions.
3. The Chair presents the teleconference times (slides 21 and 22).
4. Presentations:

**11-22/0820r0, “IEEE 802.11bf CC40 comments”, Claudio da Silva (Meta):** Claudio gives an update of the status of the comment collection. Claudio encourages people to check the document presented by Robert some weeks ago to get familiar with how to resolve comments.

**11-22/0803r0, “DMG/EDMG Link Level Simulation Platform”, Steve Blandino (NIST):** This contribution was presented in the latest call, but there was not time for Q&A.

The chair asks about future plans. Steve replies that the idea is to continue to work off-line.

**11-22/0464r6, “PDT EDMG Multi-Static PPDU structure”, Assaf Kasher (Qualcomm):** Assaf goes through the updates that have been done compared to revision 5.

Q: I am opposed to define a new PPDU given that what we have works.

A: There was a SP, and I am basically just trying to follow what the majority supported, even it at that point in time was not a 75% support.

Q: I don’t really agree that the presented document includes all changes that are needed.

Q: Thanks for the update. I would support this version, I believe there are benefits with the new PPDU format.

**Straw Poll:** Do you support including the text proposed in the following document into the IEEE 802.11bf draft amendment?

* 22/0464r6 PDT EDMG Multi-Static PPDU structure

**Result:** Y/N/A: 15/7/16

**11-22/0799r1, “PPDU formats for DMG sensing”, Rui Du (Huawei):** The contribution has already been presented, but the SPs have not been run.

**Straw Poll 1:** Do you support to add the following to the 11bf SFD.

* Both Control mode PPDU and SC mode PPDU could be adopted in DMG bistatic sensing, coordinated bistatic sensing, passive sensing, monostatic sensing, coordinated monostatic sensing.

**Result:** The SP is Unanimously supported.

**Straw Poll 2:** Do you support to add the following to the 11bf SFD.

* TRN based sensing should be adopted as one of the operating modes in DMG monostatic sensing and coordinated monostatic sensing.
* TRN related parameters could be negotiated in the coordinated monostatic sensing when TRN based sensing is used.
* TRN based sensing is an optional operating mode for DMG monostatic sensing and coordinated monostatic sensing.

**Result:** The SP is Unanimously supported.

**11-22/0647r2, ”Information Exchange of WLAN Sensing Link”, Rui Du (Huawei):** The contribution has already been presented, but the SP has not been run.

Straw Poll 1: is deferred.

After some discussion, also SP 2 is deferred.

1. The chair asks if there is AoB. The chair announces that if there are no additional requests for presentations, he intends to cancel the meeting on Monday. No response from the group.
2. The meeting is adjourned without objection at 11:48am ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 5/31 | Au, Oscar | Origin Wireless |
| TGbf | 5/31 | Aygul, Mehmet | VESTEL; IMU |
| TGbf | 5/31 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 5/31 | Bredewoud, Albert | Broadcom Corporation |
| TGbf | 5/31 | Choi, Jinsoo | LG ELECTRONICS |
| TGbf | 5/31 | Dash, Debashis | Apple Inc. |
| TGbf | 5/31 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 5/31 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 5/31 | feng, Shuling | MediaTek Inc. |
| TGbf | 5/31 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 5/31 | Halasz, David | Morse Micro |
| TGbf | 5/31 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 5/31 | katla, satyanarayana | InterDigital, Inc. |
| TGbf | 5/31 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 5/31 | Krebs, Alexander | Apple, Inc. |
| TGbf | 5/31 | Lee, Hong Won | LG ELECTRONICS |
| TGbf | 5/31 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 5/31 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 5/31 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbf | 5/31 | NANDAGOPALAN, SAI SHANKAR | Synaptics |
| TGbf | 5/31 | Ozbakis, Basak | Vestel Electronics Corp. |
| TGbf | 5/31 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 5/31 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 5/31 | Ryu, Kiseon | Ofinno |
| TGbf | 5/31 | Shellhammer, Stephen | Qualcomm Incorporated |
| TGbf | 5/31 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 5/31 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 5/31 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 5/31 | Turkmen, Halise | Istanbul Medipol University; Vestel |
| TGbf | 5/31 | Wei, Dong | NXP Semiconductors |
| TGbf | 5/31 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 5/31 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 5/31 | Zhang, Jiayi | Ofinno |
| TGbf | 5/31 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Thursday, June 9th, 2022, 11:00 pm-01:00 am (ET)**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document:

<https://mentor.ieee.org/802.11/dcn/22/11-22-0851-03-00bf-tgbf-meeting-agenda-2022-06-teleconference.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 Han, calls the meeting to order at 11:00 pm ET (about 29 persons are on the call after a few minutes of the meeting).
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 meetings” (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 13), 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 any questions or comments on the agenda.

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

1. Claudio da Silva spoke about comment resolution status saying that all comments are assigned and that one does not need to wait for all comments to be resolved. Claudio also requests all comment resolvers to review the following presentation: Comment resolution tutorial: https://mentor.ieee.org/802.11/dcn/13/11-13-0230-05-0000-comment-resolution-tutorial.ppt
2. Teleconference Time – slide 19.
3. Strawpoll on attending July Plenary in Person:
Results: (Y/N/A): 13/15/2
4. Presentations:

**11-22/0852r1, “Comment Resolution for CIDS”, Rajat Pushkara (Panasonic):**
CID 111: Revise
CID 370: Revise
CID 412: Revise
Q: Should we use target to denote the thing we are sensing or should we use objects (less military)?
A: We should consider.
Q: There are many comments on the text in clause 4.
Q: Do you have more CIDS assigned to you on this subclause?
A: These are the technical comments on this subclause, there are also editorial comments on this.

**11-22/0883r0, “SBP reporting procedure”, Chaoming Lou (OPPO):**CID 614 Is it correct that this related to CID 614?
Q: Do you have estimation of the time: (for checking limitation of TxOP) for unassociated STA there is a limit of using basic MCS.
A: No, I have not done that yet.
Q: Can delayed report and immediate report be aggregated?
A: Yes.
Q: How will that be identified?
A: It can be part of each report
Q: The main issue is whether the SBP reports are sent within the same TxOP. They can be immediate or delayed. That is an AP capability.
A: This is correct
Q: SBP initiator may set NAV to something else, and not be able to receive the SBP
R: The SBP may triggered by the TF.
R: The SBP initiator must be triggered by the AP and respond to the trigger frame. Otherwise this does not work.
Q: Should we the MAC address by part of the report?
R: AID should be used.

**11-22/0761r1, “Time requirements of Immediate feedback”, Mengshi Hu (Huawei):**
Q: What condition should be used to determine whether immediate or delayed reporting should be used
R: should be based on the measurement setup.
Q: Is it sometimes immediate and sometimes delayed - is it dynamic? Should the AP pad the trigger frame to make it long enough.
A: Could be either way, can be per measurement setup or dynamic, the group should decide
Q: The padding of the trigger is only an example of how to give time for the feedback.
A: This can be in other method
Q: The TF is a control frame – it should not be padded.
A: The padding is part of 11ax and 11be.
Q: The length of padding is limited by the TxOP limit which is also limiting by the length of the report. This limits the size of the padding.
A: Don’t understand the issue – take that offline.

**11-22/0647r4, “Time requirements of Immediate feedback”, Mengshi Hu (Huawei):**

**Strawpoll 2:** Do you support to add the following to the 11bf SFD?

* The following optional features are defined.
* Both RF gain and digital gain of each Rx antenna should be reported in the sensing measurement report frame.
* RF gain and digital gain should be reported in separate fields.
* The sensing measurement report frame provides an indication about the AGC change.
* Note:
* RF gain is defined as the gain in analog domain mainly contains the gain of AGC and other components.
* Digital gain is defined as the gain in digital domain.
* If the device is not able to provide the RF and/or digital gain, it may indicate the if the AGC changes.

**Result:** Y/N/A: 7/6/11 (no answer 6)

1. Chair Announce that Monday’s June 13th call is cancelled.
2. The meeting is adjourned without objection at 1:03AM ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 6/9 | Au, Oscar | Origin Wireless |
| TGbf | 6/9 | Choi, Jinsoo | LG ELECTRONICS |
| TGbf | 6/9 | Dash, Debashis | Apple Inc. |
| TGbf | 6/9 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 6/9 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 6/9 | feng, Shuling | MediaTek Inc. |
| TGbf | 6/9 | Huq, Kazi Mohammed Saidul | Ofinno |
| TGbf | 6/9 | Jang, Insun | LG ELECTRONICS |
| TGbf | 6/9 | Krebs, Alexander | Apple, Inc. |
| TGbf | 6/9 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 6/9 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 6/9 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 6/9 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 6/9 | Shellhammer, Stephen | Qualcomm Incorporated |
| TGbf | 6/9 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 6/9 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 6/9 | Wei, Dong | NXP Semiconductors |
| TGbf | 6/9 | Xin, Yan | Huawei Technologies Co., Ltd |
| TGbf | 6/9 | Xu, Fangxin | Longsailing Semiconductor |
| TGbf | 6/9 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 6/9 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Tuesday, June 14, 2022, 10:00 am-12:00 pm (ET)**

**Meeting Agenda:**

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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 meetings” (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 13), 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 17) and asks if there are any questions or comments on the agenda. The chair explains that the timeline is unchanged.

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

1. The Chair presents the TGbf timeline (slides 18).
2. The Chair presents slide 19, Call for contributions.
3. The Chair presents the teleconference times (slides 20 and 21).
4. Presentations:

Claudio explains that for the comments that he has assigned to himself, he has divided these in two categories. The first category is the comments that are considered to require limited efforts, whereas the second category is the comments that are expected to require more work and more discussions. The comments in the first category are found in document 877, whereas the documents in the second category are to be found in document 889.

**11-22/0877r1, “Resolutions for Editorial Comments in CC 40 – Part 1”, Claudio da Silva (Meta):**

Simple comments are addressed in the excel sheet directly. Claudio explains that he will send the excel sheet to people who have made comments and then at a later stage ask for the document to be marked as ready for motion. If commenters have issues with the proposed resolutions, there are requested to let Claudio know.

**11-22/0889r0, “Resolutions for Editorial Comments in CC 40 – Part 1”, Claudio da Silva (Meta): Check r1**

This document contains non-trivial comments that need more work. In particular, Claudio wants to hear what the group thinks about some of the received comments. Claudio will work off-line with Solomon with respect to placement of some figures.

CIDs 644 and 645 are assigned to Assaf.

CID 894 is discussed. Support for the proposed solution “Reject” also based on the Style Guide.

CID 23 is discussed.

**11-21/1934r7, “Discussion on Session Setup”, Chaoming Luo (OPPO):** Chaoming goes through the updates that have been made to this contribution.

After some quite lengthy discussions, the SPs are deferred.

**11-22/0891r0, “Comment resolution for PN,SN, and AC”, Chaoming Luo (OPPO):** This submission resolves comments of CID 601 and 744.

CID 601: Requested to postpone this to next week.

CID 744: Discussed.

1. Chair announces that he considers cancel the Thursday call. No objection from the group.
2. The meeting is adjourned without objection at 12.02 pm.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 6/14 | Aygul, Mehmet | VESTEL; IMU |
| TGbf | 6/14 | Chng, Shi Baw | BAWMAN LLC |
| TGbf | 6/14 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 6/14 | Eitan, Alecsander | Qualcomm Incorporated |
| TGbf | 6/14 | feng, Shuling | MediaTek Inc. |
| TGbf | 6/14 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 6/14 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 6/14 | Krebs, Alexander | Apple, Inc. |
| TGbf | 6/14 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 6/14 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 6/14 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbf | 6/14 | Mukkapati, Lakshmi Narayana | Wi-Fi Alliance |
| TGbf | 6/14 | NANDAGOPALAN, SAI SHANKAR | Synaptics |
| TGbf | 6/14 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 6/14 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 6/14 | Ryu, Kiseon | Ofinno |
| TGbf | 6/14 | Shellhammer, Stephen | Qualcomm Incorporated |
| TGbf | 6/14 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 6/14 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 6/14 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 6/14 | Wang, Hao | Tencent |
| TGbf | 6/14 | Wei, Dong | NXP Semiconductors |
| TGbf | 6/14 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 6/14 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 6/14 | Zhang, Jiayi | Ofinno |
| TGbf | 6/14 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Monday, June 20, 2022, 10:00 am-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/22/11-22-0851-07-00bf-tgbf-meeting-agenda-2022-06-teleconference.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. Motions (100-102)
7. Presentation of submissions
8. Any other business
9. Adjourn
10. The Chair, Tony Han, calls the meeting to order at 10:00 am ET (about 50 persons are on the call after 10 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 meetings” (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 13), 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 18) and asks if there are any questions or comments on the agenda. Chaoming explains that he would like to defer his presentation until tomorrow.

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 TGbf timeline (slides 19).
2. The Chair presents slide 20, Call for contributions.
3. The Chair presents the teleconference times (slides 21 and 22).
4. Presentations:

**11-22/0852r2, “Comment Resolution for CID related to 4.3.21.25”, Rajat Pushkarna (Panasonic):**

Revision 1 of this contribution has already been presented. This revision is an updated version after feedback from Claudio.

CID 111: Already discussed.

CID 370: Already discussed.

CID 412: No discussion.

**Straw Poll:** Do you agree to the resolutions provided in the document 11-22/0852r2for the following CIDs:111, 370 and 412 for inclusion in the latest 11bf draft?

**Result:** Unanimously supported

**Document 11-22/0852r2 is ready for motion.**

**11-22/0877r2, “Resolutions for Editorial Comments in CC40 – Part 1”, Claudio da Silva (Meta):** Claudio reminds people to consider the proposed resolutions and contact him if anyone wants to adjust the proposed resolutions.

**11-22/0907r0, “Resolutions for Editorial Comments in CC40 – Part 3”, Claudio da Silva (Meta):**

Claudio explains that instead of going through the comment in the call, he will send an email to the commenter and ask them to verify that they are OK with the proposed resolutions. This is the same approach as taken for document 877.

**11-22/0901r0, “CC40-Resolution of CIDs in clause 9.4.2 part 1”, Alecsander Eitan (Qualcomm):** This document proposes resolution for CID 106, 67, 68, 84, 396, 86, 87, 73

CID 396: No discussion.

CID 86: No discussion.

CID 84: No discussion.

CID 87: No discussion.

CID 73: No discussion.

CID 106: No discussion.

CID 67: No discussion.

CID 68: No discussion.

No SP is run as Alecsander wants to give the group some time to consider the proposed resolutions. The SP will be run at a later time.

1. Motions:

**Motion 100:** Move to include the text proposed in the following document into the IEEE 802.11bf draft amendment:

* 11-22-0798-02-00bf-pdt-updates-on-measurement-setup-termination-frame

**Move:** Pei Zhou

**Second:** Chaoming Luo

**Result:** Motion passes with unanimous consent

**Note：**

* \* Amended result accounts for removal of X votes of non-voting members.
* Related document 22/0798r2
* SP Result: 17Y/ 5N/ 5A

**Motion 101:** Move to add the following to the TGbf SFD:

* Both Control mode PPDU and SC mode PPDU could be adopted in DMG bistatic sensing, coordinated bistatic sensing, passive sensing, monostatic sensing, coordinated monostatic sensing.

**Move:** Rui Du

**Second:** Yang Xin

**Preliminary Result:** Y/N/A: 16/5/16. Motion passes

**Note：**

* \* Amended result accounts for removal of X votes of non-voting members.
* Related document 22/0799r1
* SP Result: Unanimous consent

**Motion 102:** Move to add the following to the TGbf SFD:

* TRN based sensing should be adopted as one of the operating modes in DMG monostatic sensing and coordinated monostatic sensing.
* TRN based sensing is an optional operating mode for DMG monostatic sensing and coordinated monostatic sensing.

**Move:** Rui Du

**Second:** Yang Xin

**Preliminary Result:** Y/N/A: 15/2/18. Motion passes

**Note：**

* \* Amended result accounts for removal of X votes of non-voting members.
* Related document 22/0799r1
* SP Result: Unanimous consent

Presentations, cont’d:

**11-22/0761r3, “Time Requirement of Immediate Feedback”, Mengshi Hu (Huawei):**

Presented at an earlier time, but the presentation has been slightly updated.

Mengshi just goes through the conclusion and the slides showing the updates.

Q: I don’t see the value to introduce overhead in order to get immediate feedback, compared to having delayed feedback.

A: Basically, immediate feedback is already in the specification so I think it is clear that is assumed to be valuable in some situations.

**Straw Poll:** Do you agree that a STA may tell the AP its time requirement on immediate feedback for TB measurement instances?

* This is an optional feature.

**Result:** Y/N/A: 13/10/10

**11-22/0647r7, “Information Exchange of WLAN Sensing Link”, Rui Du (Huawei):**

The SP has been updated

**Strawpoll 2:** Do you support to add the following to the 11bf SFD?

* The following optional features are defined.
* Both RF gain and digital gain of each Rx antenna should be reported in the sensing measurement report frame.
* RF gain and digital gain should be reported in separate fields.
* The sensing measurement report frame may provide an indication about the AGC change.
* Note:
* RF gain is defined as the gain in analog domain mainly contains the gain of AGC and other components.
* Digital gain is defined as the gain in digital domain.
* If the device is not able to provide the RF and/or digital gain, it may indicate the if the AGC change exceeds certain threshold (the threshold is implementation specific).

**Result:** Y/N/A:

Run out of time.

1. Chair asks if there is AoB. No response from the group.
2. The meeting is adjourned without objection at 12.01 pm.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 6/20 | Au, Oscar | Origin Wireless |
| TGbf | 6/20 | Aygul, Mehmet | VESTEL; IMU |
| TGbf | 6/20 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 6/20 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 6/20 | Du, Rui | Huawei Technologies Co., Ltd |
| TGbf | 6/20 | feng, Shuling | MediaTek Inc. |
| TGbf | 6/20 | Kadampot, Ishaque Ashar | Qualcomm Technologies, Inc. |
| TGbf | 6/20 | Kain, Carl | USDOT; Noblis |
| TGbf | 6/20 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 6/20 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 6/20 | Krebs, Alexander | Apple, Inc. |
| TGbf | 6/20 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 6/20 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 6/20 | McCann, Stephen | Huawei Technologies Co., Ltd |
| TGbf | 6/20 | NANDAGOPALAN, SAI SHANKAR | Synaptics |
| TGbf | 6/20 | Omar, Hassan | Huawei Technologies Co., Ltd |
| TGbf | 6/20 | Ozbakis, Basak | Vestel Electronics Corp. |
| TGbf | 6/20 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 6/20 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 6/20 | Shellhammer, Stephen | Qualcomm Incorporated |
| TGbf | 6/20 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 6/20 | Wei, Dong | NXP Semiconductors |
| TGbf | 6/20 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 6/20 | Xin, Yan | Huawei Technologies Co., Ltd |
| TGbf | 6/20 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 6/20 | Zhang, Jiayi | Ofinno |

**Tuesday, June 21, 2022, 10:00 am-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/22/11-22-0851-08-00bf-tgbf-meeting-agenda-2022-06-teleconference.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 Han, calls the meeting to order at 10:00 am ET (about 40 persons are on the call after 30 minutes of the meeting).
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 meetings” (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 13), 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 19) and asks if there are any questions or comments on the agenda. Assaf points out that his contribution is missing in the agenda.

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

1. The Chair presents the TGbf timeline (slides 20) - unchanged.
2. The Chair presents slide 21, Call for contributions - unchanged.
3. The Chair presents the teleconference times (slides 22 and 23) – unchanged.
4. Presentations:

**11-22/0647r7, “Information Exchange of WLAN Sensing Link”, Rui Du (Huawei):**

SP 2 was presented yesterday, but we ran out of time.

Q: What is the point in separating RF gain and digital gain? It takes more overhead and maybe some implementers do not want to reveal this kind of detail of their implementation.

A: Basically, the non-linear behavior comes from the RF gain change, whereas the digital gain change can easily be compensated. So, this knowledge is needed to get more accurate results.

After some feedback from the group, the SP is deferred.

**11-22/0891r1, “Comment resolution for PN, SN, and AC”, Chaoming Luo (OPPO):**

CID 642 has been added in revision 1.

After some discussion, the SP is deferred.

**11-22/0877r2, “Resolutions for Editorial Comments in CC40 – Part 1”, Claudio da Silva (Meta):**

Claudio asks if there are any comments or if this can be marked as ready for motion.

Q: Are all comments editorial?

A: Yes.

**Straw Poll:** Can document 11-22/0877r2 be considered ready for motion?

**Result:** Unanimously supported

**11-22/0889r1, “Resolutions for Editorial Comments in CC40 – Part 2”, Claudio da Silva (Meta):**

CIDs 664,852,853,854,856,850,841

Claudio gives a high-level description about what the comments are about and the proposed resolutions.

Q: I find the word configuration a bit fuzzy. I think you need to exemplify it a bit.

A: I don’t think this is different than the word parameter.

Claudio will continue the discussion off-line.

CIDs 229 and 851: No discussion.

CID 894: Presented last week. No further discussion.

CID 23: No discussion.

**11-22/0918r1, “CC40 DMG sensing req CIDs”, Assaf Kasher (Qualcomm):** This document proposes resolution to CC40 CIDs on DMG sensing req, response and poll.

**CID 330:** Comments from one of the group members that things are not clear.

Run out of time.

1. The chair asks if there is AoB. No response from the group.
2. The meeting is adjourned without objection at 12.01 pm.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 6/21 | Aboulmagd, Osama | Huawei Technologies Co., Ltd |
| TGbf | 6/21 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 6/21 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 6/21 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 6/21 | Eitan, Alecsander | Qualcomm Incorporated |
| TGbf | 6/21 | feng, Shuling | MediaTek Inc. |
| TGbf | 6/21 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 6/21 | Hsu, Ostrovsky | Xiaomi Inc. |
| TGbf | 6/21 | Huq, Kazi Mohammed Saidul | Ofinno |
| TGbf | 6/21 | Jang, Insun | LG ELECTRONICS |
| TGbf | 6/21 | Kadampot, Ishaque Ashar | Qualcomm Technologies, Inc. |
| TGbf | 6/21 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 6/21 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 6/21 | Krebs, Alexander | Apple, Inc. |
| TGbf | 6/21 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 6/21 | Liu, Der-Zheng | Realtek Semiconductor Corp. |
| TGbf | 6/21 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 6/21 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbf | 6/21 | Mukkapati, Lakshmi Narayana | Wi-Fi Alliance |
| TGbf | 6/21 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 6/21 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 6/21 | Sahoo, Anirudha | National Institute of Standards and Technology |
| TGbf | 6/21 | Shellhammer, Stephen | Qualcomm Incorporated |
| TGbf | 6/21 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 6/21 | Sun, Bo | ZTE Corporation |
| TGbf | 6/21 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 6/21 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 6/21 | Wei, Dong | NXP Semiconductors |
| TGbf | 6/21 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 6/21 | Xin, Yan | Huawei Technologies Co., Ltd |
| TGbf | 6/21 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 6/21 | Zhang, Jiayi | Ofinno |
| TGbf | 6/21 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Thursday, June 23, 2022, 11:00 pm-01:00 am (ET)**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document:

<https://mentor.ieee.org/802.11/dcn/22/11-22-0851-10-00bf-tgbf-meeting-agenda-2022-06-teleconference.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 Han, calls the meeting to order at 11:00 pm ET (about 31 persons are on the call after 10 minutes of the meeting).
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 meetings” (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 13), 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 20) and asks if there are any questions or comments on the agenda.

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 TGbf timeline (slides 21).
2. The Chair presents slide 22, Call for contributions.
3. The Chair presents the teleconference times (slides 23 and 24). Chair stated that the first call after July plenary that will be on July 18th will be cancelled.
4. Presentations:

**11-22/0918r1, “CC40 DMG sensing req CIDs”, Assaf Kasher (Qualcomm):**

Revision 0 of this contribution is on the server, but revision 1 is presented. The difference is minor.

CIDs 330, 656, 414, 225, 657, and 679: No comment noted.

CID 652: Question is whether the same request is sent to individual stations. The answer is yes.

CID 649, 109:

Q: Why is “Bi-static Sensing” not in the table?

A: BRP frame is for bi-static sensing and is a management frame.

Q: Why not using BRP frame to set up multi-static sensing?

A: BRP frame is a management frame and slow. Better to use control frame.

Q: In the sentence, what does “empty” mean?

A: It means “Not Present”.

C: It is useful because we can use for all coordinated cases. Fields in different cases can be interpreted differently. We need to do more.

A: Yes. More offline discussion will be followed.

Presenter will make changes and ask presentation time before SP is run.

**11-22/0931r0, “Resolutions for Editorial Comments in CC40 - Part 4”, Claudio da Silva (Meta Platforms, Inc):**

This submission proposes resolutions to editorial comments submitted in CC40: CIDs, 133, 199, 255, 392, 393, 488, 522, 587, 680, 681, 709, 710, 753, 837, 843, 844, 874, 881, and 902. The text used as reference is D0.1.

3 sets of comments will be revisited again:

CID 199: Will work offline to clarify the use of “when” and “if”.

CID 680, 681: Minor typo will be fixed.

CID 753, 881: Proposed changes seem not cover the 3rd case in which the responder’s role will be both the transmitter and the receiver. Offline discussion will be followed.

1. Chair asks if there is AoB. No response from the group. Chair asks if any concern on cancelling the call next Monday (06/27/2022). No concern is raised and the call is cancelled.
2. The meeting is adjourned without objection at 12:41 am ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 6/23 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 6/23 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 6/23 | Choi, Jinsoo | LG ELECTRONICS |
| TGbf | 6/23 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 6/23 | feng, Shuling | MediaTek Inc. |
| TGbf | 6/23 | Huang, Lei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 6/23 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 6/23 | Lee, Hong Won | LG ELECTRONICS |
| TGbf | 6/23 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 6/23 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 6/23 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 6/23 | Sahoo, Anirudha | National Institute of Standards and Technology |
| TGbf | 6/23 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 6/23 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 6/23 | Turkmen, Halise | Istanbul Medipol University; Vestel |
| TGbf | 6/23 | Wei, Dong | NXP Semiconductors |
| TGbf | 6/23 | YANG, RUI | InterDigital, Inc. |
| TGbf | 6/23 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 6/23 | Zhang, Jiayi | Ofinno |
| TGbf | 6/23 | zhu, lihua | Ruijie Networks Co., Ltd. |

**Thursday, June 30, 2022, 11:00 pm-01:00 am (ET)**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document:

<https://mentor.ieee.org/802.11/dcn/22/11-22-0851-12-00bf-tgbf-meeting-agenda-2022-06-teleconference.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 Han, calls the meeting to order at 11:00 pm ET (about 30 persons are on the call after 10 minutes of the meeting).
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 meetings” (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 13), 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 21) and asks if there are any 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 TGbf timeline (slides 22).
2. The Chair presents slide 23, Call for contributions.
3. The Chair presents the teleconference times (slides 24 and 25). Chair states that he intends to cancel the call on Monday the 4th of July.
4. Presentations:

**11-22/0907r1, “Resolutions for Editorial Comments in CC40 - Part 3”, Claudio da Silva (Meta Platforms, Inc):** This document contains draft resolutions of editorial comments received in CC40. CIDs: 25,74,183,201.227,235,440,441,683,685,686,687,693,703,707,723,727,728,842.

Claudio only received one comment on r0 and has discussed that off-line. Claudio would like to mark this document as ready for motion. This is supported without objection by the group.

**11-22/0889r3, “Resolutions for Editorial Comments in CC40 - Part 2”, Claudio da Silva (Meta Platforms, Inc):** This submission proposes resolutions to editorial comments submitted in CC40. The text used as reference is D0.1.

CIDs: 023, 229, 429, 665, 841, 848, 852, 853, 854, 856, 858, 859, 894.

Claudio would like to mark this document as ready for motion. This is supported without objection by the group.

Claudio explains that he has gone through this document and in particular the use of the term of “attribute”, which has received some comments.

**11-22/0904r1, “Follow up on NDP Transmission in TF Sounding Phase”, Mahmoud Kamel (Interdigital):**

The focus of this presentation is on methods 2a and 2b, which are compared.

It is proposed that better techniques are needed in order to support more sensors in an efficient way.

Q: I believe 32 responders in the same TXOP is very unlikely. Realistically, you will just use multiple TXOPs. I believe 8 responders is good enough and that is what we can support with 8 antennas at the AP.

A: Basically, having a large number of sensors will improve the accuracy. I also believe this is a very different application than communications. Also, it is not really about the number 32, but how to make sensing more effective.

**Straw Poll:** Do you agree that considering the efficiency in terms of responders per the TXOP duration in one criterion to select the R2I multiplexing method.

**Result:** Y/N/A: 7/14/7

**11-22/0883r1, “SBP Reporting Procedure”, Chaoming Luo (OPPO):**

The r0 of the contribution has been presented, and the main purpose is to run the SP. Chaoming also goes through the updates that have been made in this revision.

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

* SBP initiator shall indicate the **required measurement periodicity** andmay indicate its **periodic measurement availability window** in SBP request. The detailed signaling is TBD.
* If SBP responder accepts the SBP request, it shall **adhere** **to** the periodicity requested by the SBP initiator and indicate the **starting time of the scheduled first measurement instance** of the measurement setup in SBP response. The detailed signaling is TBD.
* The SBP reporting shall be addedto the measurement instances corresponding to the measurement setup initiated by the SBP procedure.
	+ SBP responder may transmit **multiple** SBP report frames sequentially as shown in slide 5.
	+ SBP responder may transmit **one or more A-MPDUs,** each carrying multiple SBP report frames as shown in slide 6.
* A STA shall use the **approach of PN** for measurement report frame and SBP report frame.

**Result:** Supported without objection.

1. Chair asks if there is AoB. The chair explains that the meeting on Monday the 4th has been cancelled.
2. The meeting is adjourned without objection at 12:42 am ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 6/30 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 6/30 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 6/30 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 6/30 | Eitan, Alecsander | Qualcomm Incorporated |
| TGbf | 6/30 | feng, Shuling | MediaTek Inc. |
| TGbf | 6/30 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 6/30 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 6/30 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 6/30 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 6/30 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 6/30 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 6/30 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 6/30 | Wei, Dong | NXP Semiconductors |
| TGbf | 6/30 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 6/30 | Xin, Yan | Huawei Technologies Co., Ltd |
| TGbf | 6/30 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 6/30 | Zhang, Jiayi | Ofinno |

**Tuesday, July 5, 2022, 10:00 am-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/22/11-22-0953-02-00bf-tgbf-meeting-agenda-2022-07-teleconference.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. Guidance for Mix mode July Plenary
8. Any other business
9. Adjourn
10. The Chair, Tony Han, calls the meeting to order at 10:00 am ET (about 50 persons are on the call after 10 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 meetings” (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 13), 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 any questions or comments on the agenda.

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

1. The Chair presents the TGbf timeline (slides 18).
2. The Chair presents slide 19, Call for contributions.
3. The Chair presents the teleconference times (slides 20 and 21).

Tony presents slide 22, which contains the guidance for mix mode July Plenary.

Q: Option 1 works well for at least one other group.

1. Presentations:

**11-22/0934r0, “Comment Resolution for CIDs 2, 228, 729 and 781”, Anirud Sahoo (NIST):**

This document resolves comment with CID 2, 228,729 and 781. This is the initial draft of the document.

Q: You should explicitly state revise ,reject, or accept for the resolutions.

Q: I believe the abbreviation UID is already used, so probably it would be better to use a different one not to overload it.

11-22/0931r1, “Resolutions for Editorial Comments in CC40 - Part 4”, Claudio da Silva (Meta): This submission proposes resolutions to editorial comments submitted in CC40. The text used as reference is D0.1.

CIDs: 133, 199, 255, 392, 393, 488, 522, 587, 680, 681, 709, 710, 753, 837, 843, 844, 874, 881, 902

Claudio goes through the CIDs where he has received feedback on the proposed contributions, in particular CID 199.

CIDs 753 and 881 are removed to create r2. Tony would then like to make r2 ready for motion. There is no objection from the group to do this.

11-22/0947r2, “CC40 DMG Information Elements CIDs”, Assaf Kasher (Qualcomm): This document proposes resolution to some CC40 information elements CIDs. CIDs are 331, 332, 643, 420, 653, 839, 648, 333, 240, 258, 395, 651, 424, 425, 259, 421, 422, 423, 840, 426, 514, 427

CID 331: No discussion.

CID 332: No discussion.

CID 643: No discussion.

CID 420: Some discussion whether the proposed solution is really clear. Assaf believes it is and the proposed resolution has been accepted. No objection to the proposed resolution.

CID 653: No discussion.

CID 839: No discussion.

CID 648: Short discussion. No objection to the proposed resolution.

CID 333: No discussion.

CID 240: Deferred.

CID 258: No discussion.

CID 395: Short discussion about the resolution. Assaf will clarify.

CID 651: No discussion.

CID 424: No discussion.

CID 425: No discussion.

CID 259: No discussion.

CID 421: No discussion.

CID 422: No discussion.

CID 423: No discussion.

CID 840: No discussion.

CID 426: No discussion.

CID 514: No discussion.

CID 427: No discussion.

Assaf will generate a revision taking the comments into account.

**11-22/0918r1, “CC40 DMG sensing req CIDs”, Assaf Kasher (Qualcomm):** This document proposes resolution to CC40 CIDs on DMG sensing req, response and poll. The resolved CIDs are: 330, 656, ~~434~~ 414, 225, 657, 679, 652, 649, 109 (It was found that 434 was a typo and it should be 414. The body of the document is correct.)

Assaf gives an overview of the comments and explains he wants to set the document ready for motion.

Q: It states that the change is on P29, l25. But this position is a figure, so it is not clear what the change actually is about.

A: Agree, there seems to be a typo. I will remove this and upload a new version.

Tony asks if there is any objection to set revision 2 ready for motion. There is no objection from the group.

1. Guidance for Mix mode July Plenary. This was presented earlier by Tony.
2. Chair asks if there is AoB. The chair explains that he may cancel the meeting on Thursday.
3. The meeting is adjourned without objection at 11:59 am ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 7/5 | Aboulmagd, Osama | Huawei Technologies Co., Ltd |
| TGbf | 7/5 | Aygul, Mehmet | VESTEL; IMU |
| TGbf | 7/5 | Baykas, Tuncer | Ofinno |
| TGbf | 7/5 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 7/5 | Chng, Shi Baw | BAWMAN LLC |
| TGbf | 7/5 | Dash, Debashis | Apple Inc. |
| TGbf | 7/5 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 7/5 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 7/5 | Du, Rui | Huawei Technologies Co., Ltd |
| TGbf | 7/5 | feng, Shuling | MediaTek Inc. |
| TGbf | 7/5 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 7/5 | Huq, Kazi Mohammed Saidul | Ofinno |
| TGbf | 7/5 | Jang, Insun | LG ELECTRONICS |
| TGbf | 7/5 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 7/5 | Kasher, Assaf | Qualcomm Incorporated |
| TGbf | 7/5 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 7/5 | Lanante, Leonardo | Ofinno |
| TGbf | 7/5 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 7/5 | Liu, Der-Zheng | Realtek Semiconductor Corp. |
| TGbf | 7/5 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 7/5 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbf | 7/5 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 7/5 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 7/5 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 7/5 | Sahoo, Anirudha | National Institute of Standards and Technology |
| TGbf | 7/5 | Shellhammer, Stephen | Qualcomm Incorporated |
| TGbf | 7/5 | Sosack, Robert | Molex Incorporated |
| TGbf | 7/5 | Srivatsa, Veena | Synaptics |
| TGbf | 7/5 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 7/5 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 7/5 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 7/5 | Wei, Dong | NXP Semiconductors |
| TGbf | 7/5 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 7/5 | Xin, Yan | Huawei Technologies Co., Ltd |
| TGbf | 7/5 | Xu, Fangxin | Longsailing Semiconductor |
| TGbf | 7/5 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 7/5 | Zhang, Jiayi | Ofinno |

**Thursday, July 7, 2022, 11:00 pm-01:00 am (ET)**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document:

<https://mentor.ieee.org/802.11/dcn/22/11-22-0953-03-00bf-tgbf-meeting-agenda-2022-07-teleconference.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. Guidance for Mix mode July Plenary
8. Any other business
9. Adjourn
10. The Chair, Tony Han, calls the meeting to order at 11:00 pm ET (about 15 persons are on the call after 10 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 meetings” (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 13), 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 17) and asks if there are any questions or comments on the agenda. Claudio asks the Chair if he can go through the status of the comment resolutions. Solomon explains he also has two contribution that are ready to be presented. The agenda is updated with these two presentations.

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 TGbf timeline (slides 18).
2. The Chair presents slide 19, Call for contributions.
3. The Chair presents the teleconference times (slides 20 and 21).
4. Presentations:

11-22/0829r1, “11bf D0.1 CR for CID 1, 589, 647”, Ning Gao (OPPO):This submission proposes resolutions for the following 3 CIDs for 11bf D0.1 Comment Collection: CIDs:1, 589, 647

CID 1: No discussion.

CID 589: Q: I think there is an issue in that not all fields may be needed and still the frame is mandatory.

A: Maybe we can add some additional description for the case when certain fields are not used.

CID 647: No discussion.

Ning will update the resolution for CID 589 and come back with an updated proposal.

**11-22/0820r7, “IEEE 802.11bf CC40 comments”, Claudio da Silva (Meta):**

People are encouraged to check the proposed resolutions and let Claudio know if there are any issues.

**11-22/0919r1, “IEEE 802.11bf CC40 comments”,Claudio da Silva (Meta):**

People are encouraged to check the proposed resolutions and let Claudio know if there are any issues.

**11-22/0985r1, “CC40 SPs and motions”, Claudio da Silva (Meta):** This submission proposes resolutions to editorial comments submitted in CC40. The text used as reference is D0.1.

CIDs: 103, 104, 669, 54, 667, 222, 394, 402, 140, 804, 604, 805, 391, 224, 607, 36, 37, 38

CID 103: No discussion

CID 104: No discussion

CID 669: There is a question related to revision number of REVme. Claudio explains that it is correct, and that the number will change as it depends on the revision of REVme. No discussion.

CID 54: Q: Do we have 11az 5.0 as baseline.

A: No, but once 11az is ready it will be part of REVme and it will effectively be included in the baseline.

CID 667: No discussion.

CID 222: Q: I wonder if another term than Measurement Setup ID is used elsewhere?

A: I will check.

Q: I think there another term than Sensing Instance ID is used elsewhere.

A: I believe that is for sub 7 GHz. This is for DMG.

CID 394: Some discussion, but no change of the proposed resolution.

CID 402: Q: I believe this is technical, rather than editorial. Maybe it should be handled there instead?

A: I am OK to move it. However, because the commenter is OK with the resolution, I would like to keep it here.

CID 140: No discussion.

CID 804: No discussion.

CID 604: No discussion.

CID 805: No discussion.

CID 391: No discussion.

CID 224: No discussion.

CID 607: Q: I believe this is not editorial, but technical. I am fine with the resolution.

Q: I wonder if you would be OK to defer this?

A: I am OK to defer it.

CID 36: No discussion.

CID 37: No discussion.

CID 38: No discussion.

Claudio asks the group to check the document and contact him if there are any concerns with the proposed resolutions.

**11-22/0943r0, “cc40-comments DMG comments resolution part one”, Solomom Trainin (Qualcomm):** Resolution of CIDs 45, 107, 397, 339, 329, and 372.

CID 45: No discussion.

CID 107: No discussion.

CID 397: No discussion.

CID 339: No discussion.

CID 329: Run out of time.

1. Guidance for Mix mode July Plenary. This was presented earlier by Tony.
2. Chair asks if there is AoB. No response from tre group.
3. The meeting is adjourned without objection at 01:02 am ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 7/7 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 7/7 | Choi, Jinsoo | LG ELECTRONICS |
| TGbf | 7/7 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 7/7 | Eitan, Alecsander | Qualcomm Incorporated |
| TGbf | 7/7 | feng, Shuling | MediaTek Inc. |
| TGbf | 7/7 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 7/7 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 7/7 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 7/7 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 7/7 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 7/7 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 7/7 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 7/7 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 7/7 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 7/7 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |