IEEE P802.11  
Wireless LANs

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| IEEE 802.11bf – Teleconference Minutes November 2022 – January 2023 | | | | |
| Date: 2022-12-23 | | | | |
| Author(s): | | | | |
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| Sang Kim | LGE |  |  |  |

Abstract

This document contains minutes for the TG 802.11bf teleconferences in November 2022 – January 2023.

Rev 0: Minutes for TG 802.11bf teleconference on the 22nd of November 2022.

Rev 1: Minutes for TG 802.11bf teleconference on the 28th of November 2022 added.

Rev 2: Minutes for TG 802.11bf teleconference on the 29th of November 2022 added + Typo corrected.

Rev 3: Minutes for TG 802.11bf teleconference on the 1st of December 2022 added.

Rev 4: Minutes for TG 802.11bf teleconference on the 5th of December 2022 added.

Rev 5: Minutes for TG 802.11bf teleconference on the 6th of December 2022 added.

Rev 6: Minutes for TG 802.11bf teleconference on the 8th of December 2022 added.

Rev 7: Lists of attendance for 22nd, 28th, 29th, of November and 1st, 5th, 6th, and 8th of December added.

Rev 8: Minutes for TG 802.11bf teleconference on the 12th of December 2022 added.

Rev 9: Minutes for TG 802.11bf teleconference on the 13th of December 2022 added.

Rev 10: Lists of attendance for 12th and 13th of December added.

Rev 11: Minutes for TG 802.11bf teleconference on the 19th of December 2022 added.

Rev 12: Minutes for TG 802.11bf teleconference on the 20th of December 2022 added.

Rev 13: Lists of attendance for 19th and 20th of December added.

Rev 14: Minutes for TG 802.11bf teleconference on the 22nd of December 2022 added.

### Tuesday, November 22, 2022, 9:00 am-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/22/11-22-2043-02-00bf-tgbf-meeting-agenda-2022-11-part-2.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. D0.1 CR Status
7. Presentation of submissions
8. Any other business
9. Adjourn
10. The chair, Tony Han, calls the meeting to order at 9:01 am ET (31 persons are on the call after one hour 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 question on the agenda. No response from the group.

The chair asks if there is any objection to approve the agenda. No response from the group. As a result, the agenda is approved.

1. The chair presents the TGbf timeline (slide 19).
2. The chair presents slide 20, Call for contributions.
3. The chair presents the teleconference times (slide 21).
4. The chair presents D0.1 CR Status (slide 22). Claudio comments that a new version of the SFD has been updated and that D0.5 is expected to be published next week.
5. Presentations:

**11-22/1897r1, “****CC40 CR for Topic Instance - Part 2”, Mengshi Hu (Huawei):** This submission contains the proposed comment resolutions for the following 9 CIDs in the Topic “Instance” shown in 22/0820 IEEE 802.11bf CC40 comments.

CIDs 243, 478, 557, 626, 627, 795, 796, 867, 909

CIDs 557, 627, 867, 243, 478, and 797: Presented earlier.

CID 626: Q: I don’t believe this text is needed.

A: I am OK to delete it.

As a result of the comment, the text is removed.

CID 795: Some discussion related to that normative text is needed.

As a result, Mengshi explains he intends to leave the details to the next comment collection.

CID 909: No discussion.

**Straw Poll:** Do you support the proposed resolutions in revision 2 of the document to the following CIDs and incorporate the text changes into the latest TGbf draft: 243, 478, 557, 626, 627, 795, 796, 867, 909?

**Result:** Unanimously supported.

**11-22/1772r4, “CC40 CR for MLME – Part 2”, Narengerile (Huawei):** This document proposes comment resolutions for the following CIDs:

* 55, 56, 57, 58, 59, 105, 113, 251, 252, 253, 457 (Group 1)
* 112, 114, 115, 116, 328, 390, 678, 823, 833 (Group 2)

Revision 2 of this contribution has been presented before and Narengerile goes through the updates made compared to revision 2.

**Straw Poll:** Do you support the proposed modifications to the following CIDs in document 11-22/1772r4 and incorporate the changes into the latest TGbf draft:

55, 56, 57, 58, 59, 105, 113, 251, 252, 253, 457, 112, 114, 115, 116, 328, 390, 678, 823, 833

**Result:** Unanimously supported.

**11-22/1913r1, “CC40 CR for CID 834, 896”, Narengerile (Huawei):**

This document proposes comment resolutions for CID 834, 896.

CID 834: Mengshi comments that he has a CID that is related and would like to hear the groups opinion. The feedback is that he may reject the corresponding CID.

CID 896: No discussion.

**Straw Poll:** Do you agree to include the resolutions for CID 834, 896 in the latest 11bf Draft?

**Result:** Unanimously supported.

**11-22/1952r0, “CR for CC40 Instance TTT, CID 256”, Junghoon Suh (Huawei):**

This submission proposes resolutions for the follwing CC40 CID: 256. The proposed changes are based on IEEE 802.11bf D0.1 [1].

CID 256: Q: Actually, I believe this field has been removed.

A: I believe it is still there. If you want it removed, you can just propose this in the next round.

Q: I support removing it now.

As a result, Junghoon decides to update the proposed resolution. Claudio asks Junghoon to give him the instruction that the field should be removed.

**Straw Poll:** Do you agree to include the resolution in revision 1 if this document for the CID 256 in the latest TGbf Draft?

**Result:** Unanimously supported.

**11-22/1953r0, “Proposed Resolution to SBP CIDs”, Claudio da Silva (Meta Platforms):**

This document includes proposed resolutions to SBP comments received in CC40.

CIDs 527, 572, 505, 506: No discussion.

CID 179: No discussion.

CID 292: Some clarifying discussion.

CID 419: No discussion.

**Straw Poll:** Do you support the proposed resolutions in this document?

**Result:** Unanimously supported.

**11-22/1958r1, “Resolution for CID 53”, Pei Zhou (OPPO):** This submission proposes resolution to CID 53. The text used as reference is 802.11bf D0.4.

CID 53: Some clarifying discussion and based on this discussion the proposed resolution is slightly updated.

**Straw Poll:** Do you support the proposed resolutions in revision 2 of this document?

**Result:** Unanimously supported.

**11-22/1956r1, “Resolutions for SBP Comments in CC40 - Part 3”, Cheng Chen (Intel):**

This submission proposes resolutions to comments submitted in CC40. The CIDs are referring to D0.1. The text used as reference is D0.4.

CIDs covered in this document include: 300 479 303 319 502 574

CIDs 300 and 479: Clarifying discussion.

CIDs 303 and 319: No discussion.

CID 502: Some clarifying discussion.

CID 574: No discussion.

**Straw Poll:** Do you support the proposed resolutions in this document?

**Result:** Unanimously supported.

1. The chair asks if there is any other business. Some discussion related to when motions will be run.
2. The meeting is adjourned without objection at 11.01am.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 11/22 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 11/22 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbf | 11/22 | da Silva, Claudio | Meta Platforms; PWC, LLC |
| TGbf | 11/22 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 11/22 | Du, Rui | Huawei Technologies Co., Ltd |
| TGbf | 11/22 | feng, Shuling | MediaTek Inc. |
| TGbf | 11/22 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 11/22 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 11/22 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 11/22 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 11/22 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 11/22 | Sahoo, Anirudha | National Institute of Standards and Technology |
| TGbf | 11/22 | Sand, Stephan | German Aerospace Center (DLR) |
| TGbf | 11/22 | Schweizer, Benedikt | Apple Inc. |
| TGbf | 11/22 | Sosack, Robert | Molex Incorporated |
| TGbf | 11/22 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 11/22 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 11/22 | Val, Inaki | Maxlinear |
| TGbf | 11/22 | Wei, Dong | NXP Semiconductors |
| TGbf | 11/22 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 11/22 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 11/22 | Zhang, Jiayi | Ofinno |
| TGbf | 11/22 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Monday, November 28, 2022, 9:00 am-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/22/11-22-2043-04-00bf-tgbf-meeting-agenda-2022-11-part-2.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. D0.1 CR Status
7. Presentation of submissions
8. Any other business
9. Adjourn
10. The chair, Tony Han, calls the meeting to order at 9:01 am ET (39 persons are on the call after one hour 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 question on the agenda. Ning wants to defer his presentation.

The chair asks if there is any objection to approve the agenda. No response from the group. As a result, the agenda is approved.

1. The chair presents the TGbf timeline (slide 20).
2. The chair presents slide 21, Call for contributions.
3. The chair presents the teleconference times (slide 22).
4. The chair presents D0.1 CR Status (slide 23). Claudio comments that a new version of the SFD has been updated and that D0.5 is expected to be published next week.
5. Presentations:

**11-22/1958r3, “Resolution for CID 53”, Pei Zhou (OPPO):** This submission proposes resolution to CID 53. The text used as reference is 802.11bf D0.4.

The SP in revision 2 was run in the last teleconference and unanimously supported. The document has been slightly updated and Pei therefore would like to re-run the SP for the new revision.

**Straw Poll:** Do you support the proposed resolutions in revision 3 of this document?

**Result:** Unanimously supported.

**11-22/2058r0, “Resolution of DMG CID 351, 356 DMG Burst”, Solomon Trainin (Qualcomm):** Resolution of the DMG CIDs 367 and 452

CIDs 367 and 452: Some clarifying discussion.

**Straw Poll:** Do you support the proposed resolutions in this document?

**Result:** Unanimously supported.

**11-22/1932r0, “**CC40 CR for CSI related CIDs**”, Rajat Pushkarna (Panasonic):**

This submission proposes resolutions of comments received from TGbf comment collection 40 (TGbf Draft 0.1).

* CIDs: 19 and 296. (2 CIDs)

CIDs 19 and 296: No discussion.

**Straw Poll:** Do you agree to the resolutions provided in the document 11-22/1932r0 for the following CIDs: 19 and 296 for inclusion in the latest 11bf draft?

**Result:** Unanimously supported.

**11-22/1845r0, “CC40 cid428 resolution”, Assaf Kasher (Qualcomm):** This document proposes resolution to CID 428 of CC40 of TGbf.

CID 428: Some clarifying discussion with respect to if one can select what Golay sequence to use.

**Straw Poll:** Do you support the proposed resolution in this document?

**Result:** Unanimously supported.

**11-22/1957r1, “Resolutions for Instance Comments in CC40 - Part 5”, Cheng Chen (Intel):** This submission proposes resolutions to several comments submitted in CC40 under Instance topic. The CIDs are referring to D0.1. The text used as reference is D0.4.

CIDs: 593 594

CID 593: No discussion.

CID 594: Some clarifying discussion.

**Straw Poll:** Do you support the proposed resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: 593 594?

**Result:** Unanimously supported.

**11-22/1954r1, “Resolutions for SBP Comments in CC40 - Part 2 – SBP termination”, Cheng Chen (Intel):** This submission proposes resolutions to comments submitted in CC40. The CIDs are referring to D0.1. The text used as reference is D0.4.

CIDs covered in this document include:

48 83 278 280 531 640

CIDs 48,83,278,280,531, and 640:

Q: Are all optional?

A: Yes.

Q: I believe the parts that talk about behavior should be in Section 11. We can discuss more in the ad-hoc.

A: I agree.

Some additional clarifying discussion.

**11-22/1783r0, “CRs for CC40 11bf D0.1 SBP Miscellaneous CIDs”, Rojan Chitrakar (Panasonic):** This submission proposes resolutions of comments received from TGbf comment collection 40 (TGbf Draft 0.1).

* CIDs: 12, 302, 320 (3 CIDs)

Rojan explains that he currently does not have any firm proposals for the CIDs, but wants to present some ideas to obtain feedback from the group.

Q: When you talk about encapsulation, you intend to use available things like TDLS?

A: It is not exactly reuse, but an extension.

Q: What is it that needs to be extended?

A: The format is the same, it is just that it must be extended with an additional type.

Q: I believe we need to have an ad-hoc to discuss this, there are many things we need to discuss much more.

**11-22/2000r0, “CC40 CR for 4 CIDs”, Dongguk Lim (LGE):** This submission proposes the resolutions for following 4 CIDs:

* 155, 272, 346, and 755

CIDs 155, 272, and 755: No discussion.

CID 346: No discussion.

**Straw Poll:** Do you support the proposed resolutions in this document?

**Result:** Unanimously supported.

**11-22/1962r0, “Comment Resolution for CIDs 169 and 803”, Chris Beg (Cognitive Systems):** This document proposes resolutions to the following CC40 CIDs: 169 and 803. All CID resolutions are relative to 802.11bf D0.4.

CID 169: No discussion.

CID 803: No discussion.

**Straw Poll:** Do you support the proposed resolutions in this document?

**Result:** Unanimously supported.

**11-22/2047r0, “Comment Resolution for Instance CID”, Anirud Sahoo (NIST):** This document resolves comment with CID 130

CID 130: No discussion.

**Straw Poll:** Do you support the proposed resolution in this document?

**Result:** Unanimously supported.

1. The chair asks if there is any other business. There is a question from the group is there will be any time for the presentations in Group 3. The chair explains that if there is nothing else, we can consider this. However, it may be preferred to instead to use the time for an ad-hoc meeting to make progress.
2. The meeting is adjourned without objection at 11:01am.

**List of Attendees:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Breakout | Timestamp | | Name | Affiliation |
| TGbf | 11/28 | Beg, Chris | | Cognitive Systems Corp. |
| TGbf | 11/28 | CHENG, yajun | | Xiaomi Communications Co., Ltd. |
| TGbf | 11/28 | Chitrakar, Rojan | | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 11/28 | Dong, Xiandong | | Xiaomi Inc. |
| TGbf | 11/28 | Eitan, Alecsander | | Qualcomm Technologies, Inc. |
| TGbf | 11/28 | feng, Shuling | | MediaTek Inc. |
| TGbf | 11/28 | Gao, Ning | | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 11/28 | Kamel, Mahmoud | | InterDigital, Inc. |
| TGbf | 11/28 | Kim, Sang Gook | | LG ELECTRONICS |
| TGbf | 11/28 | Lim, Dong Guk | | LG ELECTRONICS |
| TGbf | 11/28 | Luo, Chaoming | | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 11/28 | narengerile, narengerile | | Huawei Technologies Co., Ltd |
| TGbf | 11/28 | Ozbakis, Basak | | Vestel Electronics Corp. |
| TGbf | 11/28 | Pushkarna, Rajat | | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 11/28 | Raissinia, Alireza | | Qualcomm Incorporated |
| TGbf | 11/28 | Sahoo, Anirudha | | National Institute of Standards and Technology |
| TGbf | 11/28 | Sand, Stephan | | German Aerospace Center (DLR) |
| TGbf | 11/28 | Schweizer, Benedikt | | Apple Inc. |
| TGbf | 11/28 | SUH, JUNG HOON | | Huawei Technologies Co., Ltd |
| TGbf | 11/28 | Trainin, Solomon | | Qualcomm Incorporated |
| TGbf | 11/28 | Val, Inaki | | Maxlinear |
| TGbf | 11/28 | Wang, Chao Chun | | MediaTek Inc. |
| TGbf | 11/28 | Wei, Dong | | NXP Semiconductors |
| TGbf | 11/28 | Wilhelmsson, Leif | | Ericsson AB |
| TGbf | 11/28 | Yano, Kazuto | | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 11/28 | Zhou, Pei | | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

### Tuesday, November 29, 2022, 9:00 am-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/22/11-22-2043-05-00bf-tgbf-meeting-agenda-2022-11-part-2.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. D0.1 CR Status
7. Presentation of submissions
8. Any other business
9. Adjourn
10. The chair, Tony Han, calls the meeting to order at 10:01 am ET (39 persons are on the call after one hour 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 19) and asks if there are any question on the agenda.

The chair asks if there is any objection to approve the agenda. No response from the group. As a result, the agenda is approved.

1. The chair presents the TGbf timeline (slide 21).
2. The chair presents slide 22, Call for contributions.
3. The chair presents the teleconference times (slide 23). The chair stated that a few links for teleconference are missing and he sent a request to add to WG Vice Chair.
4. The chair presents D0.1 CR Status (slide 24).
5. Presentations:

**11-22/1915r2, “Proposed Draft Text: Coordinated Monostatic DMG Sensing Instance”, Ning Gao (OPPO):** This submission proposes the draft text for the Coordinated Monostatic DMG sensing instance.

Q: How is the duration of the 1st instance set?

A: It is delivered in the Sensing Response frame.

C: There are inconsistency in the name of the fields, e.g., Num of TX Beams in one place and Num TX Beams.

A: It will be fixed.

Q: What if the report is fragmented into multiple frames? Is this considered?

A: One Report frame is assumed.

C: The Editor mentioned that fragmentation is only considered in sub 7 GHz. However, it is corrected that fragmentation is also considered in 60 GHz.

C: Multiple frames can be aggregated into an A-MPDU. It was pointed that there is no way to aggregate management frames.

A: The PDT will be modified accordingly.

Q: Question was raised on the description in TDD BF Information field, “This field is reserved in the last DMG Sensing instance”. Is the duration of the 1st frame in the 2nd burst specified in the last frame of the 1st burst?

A: More discussion is needed.

More offline discussion will follow and it will be informed to the Chair when it is ready for presentation.

**11-22/1963r1, “CR for NDP TTT”, Junghoon Suh (Huawei):** This submission proposes resolutions for the following 5 CC40 CIDs: 310 - 314. The proposed changes are based on IEEE 802.11bf D0.1 [1].

CIDs 310, 311, 312, 313 and 314: Based on the comment in Bangkok meeting, the resolution is changed from rejected to revised. No question was raised.

**Straw Poll:** Do you agree with the resolutions in 22/1963r1?

**Result:** Unanimously supported.

**11-22/2055r1, “CR for NDPA in Clause 9”, Junghoon Suh (Huawei):**

This submission proposes resolutions for the following 3 CC40 CIDs: 293, 485 and 503. The proposed changes are based on IEEE 802.11bf D0.1 [1].

No question was raised.

**Straw Poll:** Do you agree with the resolutions in 22/2055r1?

**Result:** Unanimously supported.

**11-22/2068r0, “CR document for R2R TB Sensing”, Rajat Pushkarna (Panasonic):** This submission proposes resolutions of comments received from TGbf comment collection 40 (TGbf Draft 0.1): CIDs: 380, 466, 467, 497 and 787 (5 CIDs)

C: It was stated that Dongwei is working on these and has been resolved in 1917r1.

C: The Editor pointed out that 1917r1 is a general description and is not straw-polled yet.

C: Dongwei stated that 1917r1 is a proposed PDT and still has a few elements missing. He requested that this contribution is on hold until 1917 with some revision is ready.

C: Another suggestion was raised to reassign all 5 CIDs to Dongwei.

All 5 CIDs are reassigned to Dongwei.

**11-22/2051r1, “Resolutions for Instance Comments in CC40 - Part 6”, Cheng Chen (Intel):** This submission proposes resolutions to several comments submitted in CC40 under Instance topic. The CIDs are referring to D0.1. The text used as reference is D0.4: CIDs – 349, 436, 500, 565 and 537.

Q: Is “minimum possible length of one LTF symbol” needed?

A: It is removed.

C: 4x HE-LTF is optionally supported in 11ax, but for HE Ranging NDP, the only supported LTF/GI mode is 2x HE-LTF with 1.6us GI.

A: In Ranging NDP, this is correct.

C: For the resolution of CID 537, delete Ranging, Sensing in front of NDPA.

A: Agreed.

**Straw Poll:** Do you support the proposed resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: 349 436 500 565 537?

**Result:** Unanimously supported.

1. The chair asked if any ad-hoc meeting is scheduled this Wednesday. Cheng replied that his ad-hoc discussion will be on Wednesday next week. Since not many contributions are in the queue, ad-hoc topic can be brought to regular meeting time slot at this time.
2. The chair asks if there is any other business.
3. The meeting is adjourned without objection at 11:07am.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 11/29 | Au, Oscar | Origin Wireless |
| TGbf | 11/29 | Aygul, Mehmet | VESTEL; IMU |
| TGbf | 11/29 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 11/29 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbf | 11/29 | Choi, Jinsoo | LG ELECTRONICS |
| TGbf | 11/29 | Dash, Debashis | Apple Inc. |
| TGbf | 11/29 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 11/29 | feng, Shuling | MediaTek Inc. |
| TGbf | 11/29 | Kasher, Assaf | Qualcomm Incorporated |
| TGbf | 11/29 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 11/29 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 11/29 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 11/29 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 11/29 | Ozbakis, Basak | Vestel Electronics Corp. |
| TGbf | 11/29 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 11/29 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 11/29 | Sand, Stephan | German Aerospace Center (DLR) |
| TGbf | 11/29 | Val, Inaki | Maxlinear |
| TGbf | 11/29 | Wei, Dong | NXP Semiconductors |
| TGbf | 11/29 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 11/29 | Zhang, Jiayi | Ofinno |
| TGbf | 11/29 | Zhou, Lei | H3C Technologies Co., Limited |
| TGbf | 11/29 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

### Thursday, December 1, 2022, 10:00 pm-12:00 am (ET)

**Meeting Agenda:**

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

<https://mentor.ieee.org/802.11/dcn/22/11-22-2043-07-00bf-tgbf-meeting-agenda-2022-11-part-2.pptx>

1. Call the meeting to order
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8. Any other business
9. Adjourn
10. The chair, Tony Han, calls the meeting to order at 9:00 am ET (26 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 20) and asks if there are any question on the agenda. No response from the group.

The chair asks if there is any objection to approve the agenda. No response from the group. As a result, the agenda is approved.

1. The chair presents the TGbf timeline (slide 22).
2. The chair presents slide 23, Call for contributions.
3. The chair presents the teleconference times (slide 24). The chair reminds about that motions Monday next week and announces that probably motions will also be run the last week before Christmas.
4. The chair presents D0.1 CR Status (slide 25). Claudio announces that he now has implemented all the text resulting from the motions in the Bangkok meeting. Due to that motions will be run on Monday, Claudio decided to wait to release a new draft until these are run so that also the corresponding text can be included in the next draft.
5. Presentation of submissions:

**11-22/1918r1, “CC 40 CR for Instance CIDs – Part 2”, Narengeril (Huawei):**

This contribution presents CR for CIDs 95, 496, 756, 791 and 541, which are related to the order of TF sounding and NDPA sounding.

CID 496, 541, 95, 756:

Q: I don’t see a reason to make the order of the two negotiable.

Q: I also believe we should fix the order. I also have another comment related to if the sensing if done with two responders. In this case the order should be the same for both responders, so what happens if the two responders would indicate they would prefer to do it in different orders?

A: OK. I see your point.

Q: I believe it has to be clarified that sensing may be in one direction only.

Narengerile explains that as this is the first time she presents the contribution, she does not intend to run the SP at this time.

**11-22/1917r2, “****Proposed Draft Text for Sensing-Responder-to-Sensing-Responder Sounding”, Dong Wei (NXP):** This document contains proposed draft text on sensing-responder-to-sensing-responder (SR2SR) sounding that aims to resolve the following comments received in CC40: 156, 380, 467, 495, and 787.

Revision 1 of this contribution was presented during the f2f meeting and Dong goes through the updates made compared to revision 1.

CIDs 156, 380, 467,495, and 787: No discussion.

**Straw Poll:** Do you agree to the resolutions provided in the document 11-22/1917r3for the following CIDs:156, 380, 467, 495, and 787 for inclusion in the latest 11bf draft?

**Result:** Unanimously supported.

**11-22/1914r2, “CC 40 CR for Instance CIDs – Part 1”, Narengeril (Huawei):**

This document proposes comment resolutions for CID 153, 154, 127 and 789.

CIDs 153 and 154: Q: I propose to delete first column in Table 11-xx as it is a bit confusing with the corresponding text.

Some more clarifying discussion with respect to what different phases may occur and how to represent them in the table.

CID 789: Based on feedback from the group, the proposed resolution text is slightly updated.

CID 127: No discussion.

**11-22/2077r1, “CC40 CR for CIDs 100, 102 and 734”, Mengshi Hu (Huawei):** This submission contains the proposed comment resolutions for the remaining 3 deferred CIDs in the Topics “Frames” and “Instance” shown in 22/0820 IEEE 802.11bf CC40 comments.

CIDs 100, 102 and 734.

CIDs 100 and 102: No discussion.

CID 734: No discussion.

**Straw Poll:** Do you support the proposed resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: 100, 102 and 734?

**Result:** Unanimously supported.

**11-22/2086r0, “Resolutions for CID 49 and 50 — follow up”, Pei Zhou (OPPO):** This submission proposes resolutions to CID 49 and CID 50. The text used as reference is 802.11bf D0.4.

CID 49: No discussion.

CID 50: Some clarifying discussion.

**Straw Poll:** Move to approve resolutions to CID 49 and CID 50 as specified in doc.: 11-22/2086r0 and incorporate the text changes into the latest TGbf draft.

**Result:** Unanimously supported.

1. The chair asks if there is any other business.
2. The meeting is adjourned without objection at 00:01am.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 12/1 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 12/1 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbf | 12/1 | Choi, Jinsoo | LG ELECTRONICS |
| TGbf | 12/1 | Dash, Debashis | Apple Inc. |
| TGbf | 12/1 | da Silva, Claudio | Meta Platforms; PWC, LLC |
| TGbf | 12/1 | Eitan, Alecsander | Qualcomm Technologies, Inc. |
| TGbf | 12/1 | feng, Shuling | MediaTek Inc. |
| TGbf | 12/1 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 12/1 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 12/1 | Kasher, Assaf | Qualcomm Incorporated |
| TGbf | 12/1 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 12/1 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 12/1 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 12/1 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 12/1 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 12/1 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 12/1 | Wei, Dong | NXP Semiconductors |
| TGbf | 12/1 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 12/1 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

### Monday, December 5, 2022, 9:00 am-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/22/11-22-2087-01-00bf-tgbf-meeting-agenda-2022-12.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. D0.1 CR Status
7. Presentation of submissions
8. Motion (195-205)
9. RSVP Requested
10. Any other business
11. Adjourn
12. The chair, Tony Han, calls the meeting to order at 9:00 am ET (24 persons are on the call at the end of the meeting).
13. 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 question on the agenda. No response from the group.

The chair asks if there is any objection to approve the agenda. No response from the group. As a result, the agenda is approved.

1. The chair presents the TGbf timeline (slide 19).
2. The chair presents slide 20, Call for contributions.
3. The chair presents the teleconference times (slide 21).
4. The chair presents D0.1 CR Status (slide 22).
5. The chair reminds about RSVP requested by Jon.
6. Motions:

**Motion 195:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CID: 538, 96, 494,539, 785, 888, 158, 289, 757, 347, 758, 497, 542, 579, 889, 122, 157, 759, 883, 882, 540, and 908
* as specified in 22/1330r2 CC40 CR for clause 11.21.18.6

**Move:** Dongguk Lim

**Second:** Sang Kim

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1330r2
* SP Result: Unanimous consent

**Motion 196:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs 603, 326, 845
* as specified in 22/1896r0

**Move:** Zinan Lin

**Second:** Ray Yang

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1896r0
* SP Result: Unanimous consent

**Motion 197:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CID 108,
* as specified in 11-22-1862r0

**Move:** Claudio da Silva

**Second:** Yan Xin

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1862r0
* SP Result: Unanimous consent

**Motion 198:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs 748 and 749
* as specified in 22/1916r2

**Move:** Mengshi Hu

**Second:** Yan Xin

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1916r2
* SP Result: Unanimous consent

**Motion 199:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs 55, 56, 57, 58, 59, 105, 113, 251, 252, 253, 457, 112, 114, 115, 116, 328, 390, 678, 823, 833
* as specified in 22/1772r4

**Move:** Naren

**Second:** Rui Du

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1772r4
* SP Result: Unanimous consent

**Motion 200:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CID 834, 896
* as specified in 22/1913r1

**Move:** Naren

**Second:** Rui Du

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1913r1
* SP Result: Unanimous consent

**Motion 201:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* + CID 256
  + as specified in 22/1952r1

**Move:** Junghoon Suh

**Second:** Yan Xin

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1952r1
* SP Result: Unanimous consent

**Motion 202:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs 527, 572, 505, 506, 179, 292, 419
* as specified in 22/1953r0

**Move:** Claudio da Silva

**Second:** Dongguk Lim

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1953r0
* SP Result: Unanimous consent

**Motion 203:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* + CID 53
  + as specified in 22/1958r3

**Move:** Pei Zhou

**Second:** Chaoming Luo

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1958r3
* SP Result: Unanimous consent

**Motion 204:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs 243, 478, 557, 626, 627, 795, 796, 867, 909
* as specified in 22/1897r2

**Move:** Mengshi Hu

**Second:** Rui Du

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1897r2
* SP Result: Unanimous consent

**Motion 205:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs: 300 479 303 319 502 574
* as specified in 22/1956r1

**Move:** Cheng Chen

**Second:** Anirud Sahoo

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1956r1
* SP Result: Unanimous consent

1. Presentation of submissions:

Claudio gives an update of the draft, which currently is D0.5. Claudio encourages the group to spend some time to check for errors and let him know as soon as possible.

Claudio goes through the different TBDs to make sure that they all are addressed.

**11-22/1954r1, “Resolutions for SBP Comments in CC40 - Part 2 – SBP termination”, Cheng Chen (Intel):** This submission proposes resolutions to comments submitted in CC40. The CIDs are referring to D0.1. The text used as reference is D0.4.

CIDs covered in this document include:

48 83 278 280 531 640

This presentation was originally targeted for the corresponding ad-hoc group, but is since there is time it is presented during an ordinary conference call.

Cheng explains that there will be continued discussion in the ad-hoc call on Wednesday.

For the remaining time of the conference call, the NDP announcement frame is discussed.

1. The chair asks if there is any other business.
2. The meeting is adjourned without objection at 11:03am.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 12/5 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 12/5 | Dash, Debashis | Apple Inc. |
| TGbf | 12/5 | da Silva, Claudio | Meta Platforms; PWC, LLC |
| TGbf | 12/5 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 12/5 | feng, Shuling | MediaTek Inc. |
| TGbf | 12/5 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 12/5 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 12/5 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 12/5 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 12/5 | Schweizer, Benedikt | Apple Inc. |
| TGbf | 12/5 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 12/5 | Wei, Dong | NXP Semiconductors |
| TGbf | 12/5 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 12/5 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

### Tuesday, December 6, 2022, 9:00 am-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/22/11-22-2087-02-00bf-tgbf-meeting-agenda-2022-12.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. D0.1 CR Status
7. Presentation of submissions
8. RSVP Requested
9. Any other business
10. Adjourn
11. The chair, Tony Han, calls the meeting to order at 9:00 am ET (41 persons are on the call after 30 min 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 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 question on the agenda. Rajat requests to defer contribution 2067 to the next call.

The chair asks if there is any objection to approve the agenda. No response from the group. As a result, the agenda is approved.

1. The chair presents the TGbf timeline (slide 20).
2. The chair presents slide 21, Call for contributions.
3. The chair presents the teleconference times (slide 22).
4. The chair presents D0.1 CR Status (slide 23).
5. The chair reminds about RSVP requested by Jon.

**Straw Poll:** For our 2 days ad-hoc meeting on during January 13-14, 2023, in the Baltimore Hilton, Baltimore, Maryland for the purpose of TGbf comment resolution and consideration of document submissions, please choose:

* + Attend in person
  + Attend online
  + Abstain

**Result:** Y/N/A: 7/16/6

Some discussion related to why the number of people who declare they intend to attend in person has decreased. One suggested reason being that some people may believe the ad-hoc may not be needed.

1. Presentation of submissions:

Claudio explains that D0.5 has been released and a corresponding email has been sent out by Tony.

**11-22/919r13, “CC 40 SPs and motions”, Claudio da Silva (Meta Platforms):**

This document contains SPs ("ready for motion") and motions made towards the resolution of CC40 comments.

Claudio goes through the status for the different group when it comes to comment resolutions.

**11-22/1915r5, “Proposed Draft Text: Coordinated Monostatic DMG Sensing Instance”, Ning Gao (OPPO):** This submission proposes the draft text for the Coordinated Monostatic DMG sensing instance.

Ning has presented this contribution before and goes though the updates done in this revision.

Q: Should the formula 11-xy treat the case I = 1 separately?

A: I believe this is already covered.

Some clarifying discussion with respect to Figure 9-110a.

**Straw Poll:** Do you support the PDT presented in this document?

**Result:** Unanimously supported.

**11-22/2065r0, “Timestamp Discussion”, Chris Beg (Cognitive Systems):**

The purpose of this presentation is to collect member feedback for PDT development related to timestamp. Specifically:

* Need for measurement timestamp
* Timestamping at Receiver vs Transmitter
* Timestamp Generation

Q: I agree that at timestamp is necessary, but I believe I need to better understand what the requirements come from.

A: Basically, the requirements are derived from the different use cases and applications.

Q: What is the source of 100ppm? I believe we usually assume 20 ppm per station.

A: I believe it comes from the TSF section in the REVme specification.

Q: I believe the timestamp should be done by the receiver.

1. The chair asks if there is any other business.
2. The meeting is adjourned without objection at 11:02am.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 12/6 | Au, Oscar | Origin Wireless |
| TGbf | 12/6 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 12/6 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbf | 12/6 | Dash, Debashis | Apple Inc. |
| TGbf | 12/6 | da Silva, Claudio | Meta Platforms; PWC, LLC |
| TGbf | 12/6 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 12/6 | feng, Shuling | MediaTek Inc. |
| TGbf | 12/6 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 12/6 | Hsu, Ostrovsky | Xiaomi Communications Co., Ltd. |
| TGbf | 12/6 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 12/6 | Kasher, Assaf | Qualcomm Incorporated |
| TGbf | 12/6 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 12/6 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 12/6 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 12/6 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 12/6 | Schweizer, Benedikt | Apple Inc. |
| TGbf | 12/6 | Sun, Bo | Sanechips |
| TGbf | 12/6 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 12/6 | Wei, Dong | NXP Semiconductors |
| TGbf | 12/6 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 12/6 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 12/6 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

### Thursday, December 8, 2022, 10:00 pm-12:00 am (ET)

**Meeting Agenda:**

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

<https://mentor.ieee.org/802.11/dcn/22/11-22-2087-04-00bf-tgbf-meeting-agenda-2022-11-part-2.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. D0.1 CR Status
7. Presentation of submissions
8. Any other business
9. Adjourn
10. The chair, Tony Han, calls the meeting to order at 10:00 pm ET (30 persons are on the call after one hour 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 19) and asks if there are any question on the agenda. No response from the group. Rajat explains that he can only attend for the first part of the meeting and either he has to present first or the presentation has to be defered to Monday.

The chair asks if there is any objection to approve the agenda. No response from the group. As a result, the agenda is approved.

1. The chair presents the TGbf timeline (slide 21).
2. The chair presents slide 22, Call for contributions.
3. The chair presents the teleconference times (slide 23). The chair explains he will not be available during the first hour of the next conference call. Assaf says he will be available.
4. The chair presents D0.1 CR Status (slide 23).
5. Presentation of submissions:

**11-22/2079r2, “Resolution of DMG CID369”, Solomon Trainin (Qualcomm):** Resolution of the DMG CIDs 369. D0.5 is used for the reference

CID 369: Q: Do you also intend to prepare a figure for the DMG SBP?

A: No, I believe it is not needed. If we later see a need for it, it can be added.

**Straw Poll:** Do you support the proposed resolution presented in r3 this document?

**Result:** Unanimously supported.

**11-22/1954r3, “Resolutions for SBP Comments in CC40 - Part 2 – SBP termination”, Cheng Chen (Intel):** This submission proposes resolutions to comments submitted in CC40. The CIDs are referring to D0.1. The text used as reference is D0.5.

CIDs covered in this document include:

48 83 278 280 531 640

This contribution has been presented before and Cheng goes through the changes made to the previous revision.

CIDs 48, 83, 278, 280, 531, and 640: Some clarifying discussion.

**Straw Poll**: Do you support the proposed resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: 48 83 278 280 531 640?

**Result:** Unanimously supported.

**11-22/1918r3, “CC40 CR for Instance CIDs – Part 2”, Narengerile (Huawei):** This contribution presents CR for CIDs 95, 496, 756, 791 and 541, which are related to the order of TF sounding and NDPA sounding.

Based on the feedback obtained from the group, Narengerile has updated the contribution. Narengerile goes through the changes made to the previous version.

Some clarifying discussion related to Figure 11-75f. As a result, the figure will be updated.

**Straw Poll:** Do you support the proposed resolutions for the following CIDs in document 11-22/1918r3 and incorporate the changes into the latest TGbf draft: 95, 756, 496, 541, 791

**Result:** Unanimously supported.

**11-22/1914r4, “CC40 CR for Instance CIDs – Part 1”, Narengerile (Huawei):** This document proposes comment resolutions for CID 153, 154, 127 and 789.

CIDs 153 and 154: No discussion.

CID 789: No discussion.

CID 127: No discussion.

**Straw Poll:** Do you support the proposed resolutions for the following CIDs in document 11-22/1914r4 and incorporate the changes into the latest TGbf draft: 153, 154, 789, 127

**Result:** Unanimously supported.

**11-22/2111r0, “Resolutions for 5 CIDs in CC40”, Cheng Chen (Intel):** This submission proposes resolutions to several comments submitted in CC40 under Instance topic. The CIDs are referring to D0.1. The text used as reference is D0.5.

CIDs: 620 178 323 325 456

CID 620: No discussion.

CIDs 178 and 456: No discussion.

CID 323: Some clarifying discussion related to the note. Both concerning where the note should be placed and the wording.

CID 325: No discussion.

**Straw Poll:** Do you support the proposed resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: 620 178 323 325 456?

**Result:** Unanimously supported.

1. The chair asks if there is any other business. No response from the group.
2. The meeting is adjourned without objection at 11:52pm.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 12/8 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 12/8 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbf | 12/8 | Dash, Debashis | Apple Inc. |
| TGbf | 12/8 | da Silva, Claudio | Meta Platforms; PWC, LLC |
| TGbf | 12/8 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 12/8 | Eitan, Alecsander | Qualcomm Technologies, Inc. |
| TGbf | 12/8 | feng, Shuling | MediaTek Inc. |
| TGbf | 12/8 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 12/8 | Hsu, Ostrovsky | Xiaomi Communications Co., Ltd. |
| TGbf | 12/8 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 12/8 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 12/8 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 12/8 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 12/8 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 12/8 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 12/8 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 12/8 | Wei, Dong | NXP Semiconductors |
| TGbf | 12/8 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 12/8 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 12/8 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

### Monday, December 12, 2022, 9:00 am-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/22/11-22-2087-05-00bf-tgbf-meeting-agenda-2022-12.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. D0.1 CR Status
7. Presentation of submissions
8. RSVP Requested
9. Any other business
10. Adjourn
11. The vice chair, Assaf Kasher, calls the meeting to order at 9:01 am ET (33 persons are on the call after 10 min of the meeting).
12. The vice 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 vice chair makes a Call for Potentially Essential Patents. No potentially essential patents reported, and no questions asked.

The vice 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 vice chair goes through the agenda (slide 18) and asks if there are any question on the agenda.

Solomon asks if his presentation 22/2142 can be added to the agenda. Since there are not so many presentations in the current agenda, this is accepted.

The vice chair asks if there is any objection to approve the updated agenda. No response from the group. As a result, the agenda is approved.

1. The vice chair presents the TGbf timeline (slide 22).
2. The vice chair presents slide 23, Call for contributions.
3. The vice chair presents the teleconference times (slide 24).
4. The vice chair presents D0.1 CR Status (slide 25).
5. The vice chair reminds about RSVP requested by Jon.
6. Presentation of submissions:

**11-22/2115r0, “CW Encoding TBD”, Claudio da Silva (Meta Platforms):** This document includes resolution to a TBD found in P802.11bf D0.5.

The term channel width is changed to bandwidth.

Q: The idea is to change from 4 bits to 3 bits?

A: Yes, but also the name is changed.

**Straw Poll:** Do you agree to the changes proposed in this document?

**Result:** Unanimously supported.

**11-22/2142r0, “Resolution if DMG sensing procedure TBDs”, Solomon Trainin (Qualcomm):**

Q: If there are more than one responder and one responder terminates the sensing, does the other responders need to know?

A: No, I don’t think so.

A typo is identified and corrected.

Solomon explains that he prefers to defer the SP.

**11-22/2067r1, “CC40 CR document resolving CIDs for Sensing Measurmenet Setup”, Rajat Pushkarna (Panasonic):** This submission proposes resolutions of comments received from TGbf comment collection 40 (TGbf Draft 0.1).

* CIDs: 245, 246, 247, 248, 249, 250, 270 and 271 (8 CIDs)

CIDs 245, 246, 247, 248, 249, 250, 270 and 271:

Q: I believe you need to have a reason when you reject a comment.

As a result, a motivation is added to all CIDs where applicable.

**Straw Poll:** Do you agree to the proposed resolution in revision 2 of this document?

**Result:** Unanimously supported.

**11-22/2085r0, “CRs for CC40 11bf D0.1 SBP CIDs”, Rajat Pushkarna (Panasonic):** This submission proposes resolutions of comments received from TGbf comment collection 40 (TGbf Draft 0.1).

* CIDs: 12 (1 CID)

**Straw Poll:** Do you agree to incorporate the changes provided in IEEE 11-22/2085r0 for the following CIDs to the next revision of 802.11bf draft: 12?

**Result:** Unanimously supported.

**11-22/1576r0, “Updates on channel model and evaluation methodology documents to support a simulation framework for TGbf”, Steve Blandino (NIST):**

Proposed updates to the channel model document 11-21/0782r5 are discussed in this presentation.

**Straw Poll:** Do you support modifying the official channel model document IEEE 802.11 (21/0782r3) as IEEE 802.11 (21/0782r5) by adding the section 4.3 – Living Room Channel Model – Mono/Bistatic/Multi-static, section 7.3 Channel Data for Bi-Static-Directional Sub-Scenario and section 7.4 Channel Data for Isotropic Sub-Scenario?

**Result:** Unanimously supported.

**11-21/0876r5, “TGbf Evaluation Methodology and Simulation Scenarios”, Steve Blandino (NIST):**

Steve goes through the updates made to document 21/0876.

**11-22/1217r1, “Implementation of 60 GHz WLAN-SENS Physical Layer Model”, Steve Blandino (NIST):** Description of the source code implementing 60 GHz WLAN SENS Physical Layer Model.

**11-22/1576r0, “Updates on channel model and evaluation methodology documents to support a simulation framework for TGbf”, Steve Blandino (NIST):**

**Straw Poll:** Do you support modifying the official evaluation methodology document IEEE 802.11 (21/0876r3) as IEEE 802.11 (21/0876r5) by adding the option to evaluate scenarios using phased antenna arrays and by adding Section 2.4 Scenario 3: Bistatic indoor living room

**Result:** Unanimously supported.

**11-22/1653r0, “Polarization switching for WLAN sensing”, Rui Du (Huawei):**

* Polarization switching has been adopted in 11 ay for LOS assessment.
* In this contribution, the idea of sensing with different polarization information is discussed and some experimental measurements are shown.

Q: If I remember correctly, we never sent out this information in 11ay because the polarization changes when the receiver moves. Basically, I don’t think it is useful in practice.

Q: How do you plan to use this information?

A: Depends on the application. What we have seen in the literature is that it may e.g. be used to get twice the amount of input variables to a machine learning algorithm.

Q: It is not really important what the polarization is, just that one can gets more data.

Rui explains that he does not intend to run the SP as it is the first time the contribution is presented.

Assaf encourages people to review D0.5 to try to reduce the number of comments on D1.0.

1. The vice chair asks if there is any other business. No response from the group.
2. The meeting is adjourned without objection at 10:57am.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 12/12 | Au, Oscar | Origin Wireless |
| TGbf | 12/12 | Aygul, Mehmet | VESTEL; IMU |
| TGbf | 12/12 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 12/12 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbf | 12/12 | Dash, Debashis | Apple Inc. |
| TGbf | 12/12 | da Silva, Claudio | Meta Platforms; PWC, LLC |
| TGbf | 12/12 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 12/12 | feng, Shuling | MediaTek Inc. |
| TGbf | 12/12 | Hsu, Ostrovsky | Xiaomi Communications Co., Ltd. |
| TGbf | 12/12 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 12/12 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 12/12 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 12/12 | Liu, Der-Zheng | Realtek Semiconductor Corp. |
| TGbf | 12/12 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 12/12 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 12/12 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 12/12 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 12/12 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 12/12 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 12/12 | Val, Inaki | MaxLinear, Inc. |
| TGbf | 12/12 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 12/12 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

### Tuesday, December 13, 2022, 9:00 am-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/22/11-22-2087-06-00bf-tgbf-meeting-agenda-2022-12.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. D0.1 CR Status
7. Presentation of submissions
8. RSVP Requested
9. Any other business
10. Adjourn
11. The chair, Tony Han, calls the meeting to order at 9:01 am ET (32 persons are on the call after 20 min 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 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 question on the agenda.

Naren asks that her contribution in Table 3 is deferred. Ali explains that he has a contribution, 11-22/2146r0, that he would like to present.

The chair asks if there is any objection to approve the updated agenda. No response from the group. As a result, the agenda is approved.

1. The chair presents the TGbf timeline (slide 23).
2. The chair presents slide 24, Call for contributions.
3. The chair presents the teleconference times (slide 25).
4. The chair presents D0.1 CR Status (slide 26), which has been updated.
5. The chair reminds about RSVP requested by Jon.

The chair gives an update of the 1st workshop on Wi-Fi Sensing which will take place on the 16th of December.

1. Presentation of submissions:

**11-22/2142r1, “Resolution if DMG sensing procedure TBDs”, Solomon Trainin (Qualcomm):** Solomon presented r0 of this contribution yesterday and has updated it to r1.

**Straw Poll:** Do you agree to the proposed resolution in this document?

**Result:** Unanimously supported.

**11-22/2146r0, “Updated PDT Sensing NDPA Frame Format”, Ali Raissinia (Qualcomm):**

This document is the updated version of the NDPA frame format based on D0.5.

A lot of clarifying discussions and as a result the text is slightly modified in some places.

Ali explains he will upload revision 1 of the modifications.

**Straw Poll:** Do you agree to the proposed text in r1 of this document?

**Result:** Unanimously supported.

**11-22/2101r1, “mmWave Phase Feedback”, Kevin Tsunghan Tsai (Mediatek):** This contribution relates to vital sign det. includes breathing rate and heart rate detection and can be used in many health applications.

Q: I believe we should add the phase in the image report.

A: I believe this can be considered.

Q: It seems a lot of things need to be very accurate for this to make sense, in particular with respect to timing. Is it feasible?

A: I believe so, I can check for references.

Q: It was not clear to me exactly how to add this information.

A: The original idea was to add it to the target report, but as just suggested in can be in the image report as well.

Q: I agree with the use case, but I believe one should not send application data. One should send measurement data.

A: We want to send back the phase and I believe that is to be considered as measurement data.

Q: We had a somewhat related contribution early on when the TG was started.

**11-22/2149r0, “Comment Resolutions on Sensing Measurement Report ”, Steve Shellhammer (Qualcomm):** The document provides comment resolutions for CIDs: 8, 9, 120, 209, 294, 297, 298, 306, 471, 472, 489, 510, 511, 512, 513, 523, 650, 655, 668, 836, 838, 903, 904.

CID 8: No discussion.

CID 9: No discussion.

CID 120: No discussion.

CID 209: No discussion.

CID 294: No discussion.

CID 297: No discussion.

CID 298: No discussion.

CID 306: No discussion.

CID 471: No discussion.

CID 472: No discussion.

CID 489: No discussion.

CID 510: Some clarifying discussion.

Run 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 11:02am.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 12/13 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 12/13 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbf | 12/13 | Choi, Jinsoo | LG ELECTRONICS |
| TGbf | 12/13 | Dash, Debashis | Apple Inc. |
| TGbf | 12/13 | da Silva, Claudio | Meta Platforms; PWC, LLC |
| TGbf | 12/13 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 12/13 | Eitan, Alecsander | Qualcomm Technologies, Inc. |
| TGbf | 12/13 | feng, Shuling | MediaTek Inc. |
| TGbf | 12/13 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 12/13 | Hsu, Ostrovsky | Xiaomi Communications Co., Ltd. |
| TGbf | 12/13 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 12/13 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 12/13 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 12/13 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 12/13 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 12/13 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 12/13 | Sahoo, Anirudha | National Institute of Standards and Technology |
| TGbf | 12/13 | Schweizer, Benedikt | Apple Inc. |
| TGbf | 12/13 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 12/13 | Val, Inaki | MaxLinear, Inc. |
| TGbf | 12/13 | Wei, Dong | NXP Semiconductors |
| TGbf | 12/13 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 12/13 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

### Monday, December 19, 2022, 9:00 am-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/22/11-22-2087-08-00bf-tgbf-meeting-agenda-2022-12.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. D0.1 CR Status
7. Presentation of submissions
8. RSVP Requested
9. Motions (206-221)
10. Any other business
11. Adjourn
12. The chair, Tony Han, calls the meeting to order at 9:03 am ET (34 persons are on the call after 20 min of the meeting).
13. 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 22) and asks if there are any question on the agenda. No response from the group.

The chair asks if there is any objection to approve the updated agenda. No response from the group. As a result, the agenda is approved.

1. The chair presents the TGbf timeline (slide 24).
2. The chair presents slide 25, Call for contributions.
3. The chair presents the teleconference times (slide 26).
4. The chair presents D0.1 CR Status (slides 27 and 28).
5. The chair gives an updated regarding the ad-hoc meeting. The chair also informs about the Wi-Fi WS and explains that hopefully the video from the WS will be uploaded later this week
6. Presentation of submissions:

**11-22/2149r1, “Comment Resolutions on Sensing Measurement Report ”, Steve Shellhammer (Qualcomm):** The document provides comment resolutions for CIDs: 8, 9, 120, 209, 294, 297, 298, 306, 471, 472, 489, 510, 511, 512, 513, 523, 650, 655, 668, 836, 838, 903, 904.

Steve started to present in the last conference call, but we ran out of time. This is a continuation of the presentation.

CID 511: No discussion.

CID 512: No discussion.

CID 513: No discussion.

CID 523: No discussion.

CID 650: No discussion.

CID 655: No discussion.

CID 668: No discussion.

CID 836: No discussion.

CID 838: No discussion.

CID 903: No discussion.

CID 904: No discussion.

**Straw Poll:** Do you agree to the proposed resolutions presented in this document?

**Result:** Unanimously supported.

**11-22/2116r2, “PDT for Rx\_OP\_Gain\_Type and Rx\_OP\_Gain\_Index in CSI Report”, Shuling (Julia) Feng (Mediatek):** This document provides proposed draft text for IEEE 802.11bf related to RX\_OP\_Gain\_Type and Rx\_OP\_Gain\_Index

Some minor typos are found and corrected.

Q: On page 4, it sounds like there is some kind of order. It is not entirely clear to me we have discussed in this kind of detail. Maybe this paragraph can be made slightly more clear.

A: OK. If you have a suggestion, please let us know.

Q: Some text seems to be normative, and then it should not be in this section. Also, I thought things were supposed to be implementation specific.

Based on these comments some clarifying is made.

Q: I have some concern making 8 bits per antenna mandatory. I expect many applications may not use them and then this is just overhead.

A: I understand your concern.

The chair asks Julia about the next plans. Julia explains she will update the contribution based on the received feedback and talk more offline.

1. Motions:

**Motion 206:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CID 19 and 296
* as specified in 22/1932r0

**Move:** Claudio da Silva

**Second:** Assaf Kasher

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1932r0
* SP Result: Unanimous consent

**Motion 207:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs 367 and 452
* as specified in 11-22-2058-00-00bf CC40 Resolution of DMG CID 367 452 DMG burst

**Move:** Solomon Trainin

**Second:** Assaf Kasher

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/2058r0
* SP Result: Unanimous consent

**Motion 208:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* + CID 428
  + as specified in 11-22-1845r0

**Move:** Assaf Kasher

**Second:** Solomon Trainin

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1845r0
* SP Result: Unanimous consent

**Motion 209:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CID 593 and 594
* as specified in 22/1957r1

**Move:** Claudio da Silva

**Second:** Ali Raissinia

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1957r1
* SP Result: Unanimous consent

**Motion 210:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CID 155, 272, 346, and 755
* as specified in 22/2000r0

**Move:** Dongguk Lim

**Second:** Sang Kim

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/2000r0
* SP Result: Unanimous consent

**Motion 211:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs 169 and 803
* as specified in 22/1962r0

**Move:** Chris Beg

**Second:** Anirud Sahoo

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1962r0
* SP Result: Unanimous consent

**Motion 212:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CID 130
* as specified in 22/2047r0

**Move:** Anirudha Sahoo

**Second:** Chris Beg

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/2047r0
* SP Result: Unanimous consent

**Motion 213:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs 310, 311, 312, 313 and 314
* as specified in 22/1963r1

**Move:** Junghoon Suh

**Second:** Anirud Sahoo

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1963r1
* SP Result: Unanimous consent

**Motion 214:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs 293, 485, and 503
* as specified in 22/2055r1

**Move:** Junghoon Suh

**Second:** Anirud Sahoo

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/2055r1
* SP Result: Unanimous consent

**Motion 215:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs 349 436 500 565 537
* as specified in 22/2051r2

**Move:** Claudio da Silva

**Second:** Assaf Kasher

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/2051r2
* SP Result: Unanimous consent

**Motion 216:** Move to approve “Rejected” resolutions to the CIDs:

* CID: 302, 320, 301, 304, 321
* With the following rejection reason: “The commenter has withdrawn the comment”.

**Move:** Claudio da Silva

**Second:** Anirud Sahoo

**Result:** Motion passed by unanimous consent

**Motion 217:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs: 156, 380, 467, 495, and 787
* as specified in 22/1917r3

**Move:** Dong Wei

**Second:** Sang Kim

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1917r3
* SP Result: Unanimous consent

**Motion 218:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CID 49 and 50
* as specified in 22/2086r0

**Move:** Pei Zhou

**Second:** Ning Gao

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/2086r0
* SP Result: Unanimous consent

**Motion 219:** Move to approve resolutions to the following CIDs listed in the following document and incorporate the text changes into the latest TGbf draft:

* CIDs 100, 102 and 734
* as specified in 22/2077r1

**Move:** Rui Du

**Second:** Naren

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/2077r1
* SP Result: Unanimous consent

**Motion 220:** Move to approve “Rejected” resolutions to the CIDs:

* CID: 20
* With the following rejection reason: “The commenter has withdrawn the comment”.

**Move:** Claudio da Silva

**Second:** Assaf Kasher

**Result:** Motion passed by unanimous consent

**Motion 221:** Move to include the text proposed in the following document into the IEEE 802.11bf draft amendment:

* 11-22-1915-05-00bf-proposed-draft-text-for-the-coordinated-monostatic-dmg-sensing-instance

**Move:** Ning Gao

**Second:** Chaoming Luo

**Result:** Motion passed by unanimous consent

**Note：**

* Related document 22/1915r5
* SP Result: Unanimous consent

1. The chair asks if there is any other business. Claudio asks to get some time to give an update in the next conference call.
2. The meeting is adjourned without objection at 10:59am.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 12/19 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 12/19 | Dash, Debashis | Apple Inc. |
| TGbf | 12/19 | da Silva, Claudio | Meta Platforms; PWC, LLC |
| TGbf | 12/19 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 12/19 | Eitan, Alecsander | Qualcomm Technologies, Inc. |
| TGbf | 12/19 | feng, Shuling | MediaTek Inc. |
| TGbf | 12/19 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 12/19 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 12/19 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 12/19 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 12/19 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 12/19 | McCann, Stephen | Huawei Technologies Co., Ltd |
| TGbf | 12/19 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 12/19 | Ozbakis, Basak | Vestel Electronics Corp. |
| TGbf | 12/19 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 12/19 | Sahoo, Anirudha | National Institute of Standards and Technology |
| TGbf | 12/19 | Schweizer, Benedikt | Apple Inc. |
| TGbf | 12/19 | Shellhammer, Stephen | Qualcomm Incorporated |
| TGbf | 12/19 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 12/19 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 12/19 | Wei, Dong | NXP Semiconductors |
| TGbf | 12/19 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 12/19 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

### Tuesday, December 20, 2022, 9:00 am-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/22/11-22-2087-09-00bf-tgbf-meeting-agenda-2022-12.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. D0.1 CR Status
7. Presentation of submissions
8. RSVP Requested
9. Any other business
10. Adjourn
11. The chair, Tony Han, calls the meeting to order at 9:00 am ET (28 persons are on the call after 10 min 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 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 23) and asks if there are any question on the agenda. No response from the group.

The chair asks if there is any objection to approve the updated agenda. No response from the group. As a result, the agenda is approved.

1. The chair presents the TGbf timeline (slide 25).
2. The chair presents slide 26, Call for contributions.
3. The chair presents the teleconference times (slide 27). The chair explains that the next time for motions will be in early January.
4. The chair presents D0.1 CR Status (slides 28 and 29). Claudio gives a status update. 800 out of 912 comments have been resolved.
5. The chair gives an updated regarding the ad-hoc meeting.
6. Presentation of submissions:

**11-22/2073r0, “CC40-misc-DMG-CIDs”, Assaf Kasher (Qualcomm):** This document proposes resolution to several DMG related CIDs.

All changes are based on D0.5

CID 443: Claudio explains that is would be nice to have the examples in place to D1.0, even if not formally required.

CID 34: No discussion.

CID 91: No discussion.

CID 445: Claudio points out that one of the figures is outdated, and that he will send the latest figure so that the changes can be made with respect to the latest figure instead.

CID 447: No discussion.

CID 355: Claudio asks Assaf to verify that the figure is the latest one.

CID 368: No discussion.

Assaf also describes the work that has been done related to a TBD.

**11-22/2187r0, “PDT Update on Ng Values”, Steve Shellhammer (Qualcomm):**

This document provides proposed draft text for IEEE 802.11bf D0.6.

Q: I believe we have used another definition of N\_TX and N\_RX, so this is not consistent with what we have used in other places.

A: I see what you mean. I will look into this.

Q: Is Table 9-A the same as in EHT?

A: Yes, except that EHT does not support Ng = 8, so this is added.

Some clarifying discussion with respect to Table 9-127i.

It is agreed that some more offline discussions may be needed.

1. The chair asks if there is any other business. Claudio asks to get some time to give an update in the next conference call.
2. The meeting is adjourned without objection at 11:03am.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 12/20 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 12/20 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbf | 12/20 | da Silva, Claudio | Meta Platforms; PWC, LLC |
| TGbf | 12/20 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 12/20 | feng, Shuling | MediaTek Inc. |
| TGbf | 12/20 | Kasher, Assaf | Qualcomm Incorporated |
| TGbf | 12/20 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 12/20 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 12/20 | Liu, Der-Zheng | Realtek Semiconductor Corp. |
| TGbf | 12/20 | McCann, Stephen | Huawei Technologies Co., Ltd |
| TGbf | 12/20 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbf | 12/20 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 12/20 | Sand, Stephan | German Aerospace Center (DLR) |
| TGbf | 12/20 | Schweizer, Benedikt | Apple Inc. |
| TGbf | 12/20 | Shellhammer, Stephen | Qualcomm Incorporated |
| TGbf | 12/20 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 12/20 | Sun, Bo | Sanechips |
| TGbf | 12/20 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 12/20 | Val, Inaki | MaxLinear, Inc. |
| TGbf | 12/20 | Wei, Dong | NXP Semiconductors |
| TGbf | 12/20 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 12/20 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 12/20 | Zhang, Jiayi | Ofinno |
| TGbf | 12/20 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

### Thursday, December 22, 2022, 10:00 pm-12:00 am (ET)

**Meeting Agenda:**

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

<https://mentor.ieee.org/802.11/dcn/22/11-22-2087-12-00bf-tgbf-meeting-agenda-2022-11-part-2.pptx>

1. Call the meeting to order
2. Patent policy and logistics
3. TGbf Timeline
4. Call for contribution
5. Teleconference Times
6. D0.1 CR Status
7. Presentation of submissions
8. Any other business
9. Adjourn
10. The chair, Tony Han, calls the meeting to order at 10:01 pm ET (23 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 24) and asks if there are any question on the agenda. Dongguk informs that the author of contribution 2197 is not on the call today.

The chair asks if there is any objection to approve the agenda. No response from the group. As a result, the agenda is approved.

1. The chair presents the TGbf timeline (slide 26).
2. The chair presents slide 27, Call for contributions.
3. The chair presents the teleconference times (slide 28). It is agreed to cancel three of the conference calls before the January f2f. As a result, we will only have two more conference calls before the f2f.
4. The chair presents D0.1 CR Status (slide 29) as well as slide 30.

The chair also mention that the video and the white paper for the sensing conference will hopefully be uploaded next week.

1. Presentation of submissions:

**11-22/0919r13, “CC40 SPs and motions”, Claudio da Silva (Meta Platforms):** Claudio gives an update of the specification status. D0.5 contains the motions up until now. However, we have made a lot of additional progress since the latest motions. Claudio has therefore also implemented some additional progress in D0.51 in order to allow people who are working will have an updated version of the draft, even if these are only marked as ready for motion. D0.51 will not be posted in the members area but can be obtained by sending an email to Claudio.

**11-22/2195r1, “CC40 CR for CID 487”, Dongguk Lim (LGE):** This submission proposes the resolutions for following 1CIDs:

* 487, 585, 654

The resolution is based on the 11bf D0.5.

CIDs 487, 585, and 654: Some clarifying discussion with respect to coloring bits.

Q: I believe Ng must go in the capability element. Only Ng = 16 is optional.

Also, some clarifying discussion related to Nb and whether supporting sensing measurement report is mandatory or not.

As a consequence, the proposed resolution is slightly updated.

In addition, it is agreed that some more off-line discussions are needed.

**11-22/2065r1, “Timestamp Discussion”, Chris Beg (Cognitive Systems):** The contribution has been updated and Chris presents the updated version.

Q: I wonder if it should be mandatory. It seems making it optional would be better. The application could negotiate during set-up.

A: I am open to this.

Q: Is the timestamp good enough to measure the Doppler frequency?

A: Yes.

Q: Is it clear that the receiver generates the timestamp?

A: Yes, it is clear in the SP.

Q: What is the purpose of the SP? Just a survey or to convert it into a motion?

A: If there is support, I would like to generate a PDT.

Q: If it is intended as a survey, maybe it is better to split the SP into a number of questions. Otherwise, people may vote No, even if they agree with most of the text in the SP.

**Straw Poll 1:** Do you agree to the following design approach:

* Timestamp is always present in Sensing Report
* Timestamp is generated by Sensing Receiver
  + Timestamp corresponds to start of the SI2SR or SR2SI NDP preamble
* Timestamp is generated from local clock of STA:
  + Same resolution, and accuracy/drift requirements as TSF
    - 1us resolution (+/- 100ppm accuracy)
  + Same width as DMG reported timestamp (4 bytes)
  + Associated STAs may synchronize their timestamp relative to the AP’s clock by using the TSF mechanisms
  + Non-Associated STAs may synchronize their timestamp relative to the AP’s clock by using the Partial TSF in the Trigger/NDPA

**Result:** Y/N/A: 7/2/8

**Straw Poll 2:** Do you agree to the following design approach:

* Timestamp is always present in Sensing Report

**Result:** Y/N/A: 7/4/6

Chris explains he will collect more feedback offline.

**11-22/2073r1, “CC40-misc-DMG-CIDs”, Assaf Kasher (Qualcomm):** Revision 0 of this document was presented in the latest conference call and Assaf has updated the document based on the obtained feedback from the group.

**Straw Poll:** Do you agree to the proposed text in r1 of this document?

**Result:** Unanimously supported.

**11-22/2205r0, “Resolution of TBDs in clause 9.4.2”, Alecsander Eitan (Qualcomm):**

This document proposes resolution for some TBDs in Draft 0.5.

Based on IEEE P802.11bf/D0.5, December 2022.

TBD in Section 9.4.2.322: No discussion.

TBD in Section 9.4.2.322: No discussion.

TBD in Section 9.4.2.329.1: Some clarifying discussion.

TBD in Section 9.4.2.329.3: No discussion.

TBD in Section 9.4.2.330: Assaf makes a comment that this may not be consistent with what he presented. As a result, it is agreed that Assaf and Alecsander will discuss more offline and then Alecsander will present the result of this in the next meeting.

1. The chair asks if there is any other business. No response from the group.
2. The meeting is adjourned without objection at 00:02am.