IEEE P802.11
Wireless LANs

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| IEEE 802.11bf – Teleconference Minutes July-September 2022  |
| Date: 2022-08-08 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
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| Sang Kim | LGE |  |  |  |

Abstract

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

Rev 0: Minutes for TG 802.11bf teleconferences on the19th and 21st of July 2022.

Rev 1: Minutes for TG 802.11bf teleconferences on the 26th and 28th of July 2022 added.

Rev 2: Minutes for TG 802.11bf teleconferences on the 1st and 4th of August 2022 added.

Rev 3: Minutes for TG 802.11bf teleconferences on the 8th, 9th, and 11th of August 2022 added.

Rev 4: Minutes for TG 802.11bf teleconferences on the 15th of August 2022 added.

**Tuesday, July 19, 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/22/11-22-1154-00-00bf-tgbf-meeting-agenda-2022-07-teleconference-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. 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 35 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 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 (slide 17) and introduces a straw poll on time line (slide 18). He opens the floor for question and comment on timeline. The following questions and comments are noted:

C: After 2 months of comment resolution, around 10% of technical comments are resolved. It is unrealistic to assume that we resolve all technical comments by September. Even D2.0 or D0.2 by November may be hard to achieve. We may need more time until January. 11be also started comment resolution and that will impact our progress when it comes to comment resolution. Please provide more inputs.

C: It is reasonable to delay at least one month. We received around 1000 comments, many of them are technical. Some folks are busy due to vacation, 11be comment resolution, etc. It is better to delay.

C: Delay to November seems good, but January is not since January is 6 months’ away from now.

Q: Is there absolute time to change the timeline?

A: Timeline can be changed quickly. One day notice is enough.

C (Chair): No need to hurry. We will see the progress through August and decide.

C: Delay is needed. 2 months’ delay seems reasonable. Editor mentioned D0.x version for another round of comment resolution, but it seems not beneficial.

Q: How many comments are relatively easy and hard?

A: It is not easy to answer because they are mixed.

C: Timeline is less important and more important is when we get done.

Q: We should focus on resolving comments, especially TBD comments. Does the Editor have a plan to generate tables that show who needs to resolve which comments?

A: We already have a document in the server. Since we resolved around 10% of comments, it is better to specify TTT, not person assigned.

C (Chair): Will work with Editor to provide guidance or action. Will contact PoC to check what types of CIDs are easy or controversial and check if help is needed.

C: Relaxing a deadline will incur opposite effect. Assignees may feel they have more time to resolve. PoC needs to contact TTT members to ask when CIDs assigned can be resolved. Based on this information, we can estimate the required time and then change the timeline.

Chair stated that it is not the right time to decide and we will see the progress through August. The editor will prepare 1 or 2 slides to speed up. Offline discussion will follow.

1. The Chair presents slide 19, Call for contributions.
2. The Chair presents the teleconference times (slides 20 and 21). For September meeting, we are still waiting for confirmation on Tuesday PM2 slot. Monday PM1 is requested in case we have not 4 time slots. If Tuesday PM2 is confirmed, then we will have 5 sessions in September meeting.
3. Presentations:

**11-22/1158r1, “Sensing Measurement Report Type for sub-7 GHz WLAN sensing”, Junghoon Suh (Huawei):** This contribution proposes to have the CSI proposed be the only Sensing Measurement Report Type for sub-7GHz in TGbf. Introduction of another report type will require another round of long discussion.

Q: If only one type of report is considered, then we don’t need to signal.

A: Signaling needs further discussion.

C: A few bits are required for future extension.

A: We can consider during the discussion for actual frame format.

C: Currently mandatory format is supported. It is noted that there are a few limitations. For example, the compression for Ng = 8 in 160 MHz is not great. Other format is suitable for other application.

A: We did a lot of discussion on feedback types. This is the best we can now. Other issues can be raised during PDT writing. The presenter does not object to place a more subfield for future extension.

C: Temporary agreement on harmonized feedback type. For SP1, do you want to limit our future addition? What do you have in your mind, 1, 2, or 3?

A: We can discuss further in the next round of TGbf.

C: WLAN sensing has been around a decade in R&D. CSI can be utilized in a wide range of applications. If we limit the report type to CSI only, we enable to support a wide range of applications. Agree that we can always make optimization, but it will take a longer time.

C: If we support only CSI report, then we need to think whether a threshold-based reporting should be in the draft.

A: The threshold-based reporting is based on the CSI feedback. Contents of threshold-based feedback is still CSI.

C: It is better to run SP2 first.

A: SP#1 can be skipped and let’s directly go to SP#2.

Straw Poll 2: Do you agree that the measurement report type in the PDT Formatting of CSI 22/1020 is the only one defined for the sub-7 GHz WLAN sensing, TGbf ?

- Signaling of CSI Feedback type is for further discussion

Result: Y/N/A: 23/3/8

11-22/0980r0, “CC40 CR for CIDs 52, 365 and 449”, Rui Du (Huawei): This submission contains the proposed comment resolutions for the CIDs 52, 365, 449.

CID 365: No discussion.

CID 449 and 52:

C: When several responders transmit at the same time, they will interfere with each other. Thus, a false detection and miss direction estimation will incur. It may not work in many cases.

A: It is assumed that directional antennas with very narrow beams. It should work. Transmission could also be sequential. Further offline discussion will follow.

C: Sensing PPDU and monostatic PPDU are not defined. “The sensing responders will go through the Num TX Beams Per Intance beams to transmit and receive the sensing PPDUs” needs to be changed to normative text.

C: Some minor editorial comments are provided.

The presenter will go through all suggestion, modify the contribution, and then bring back the updated contribution.

1. Chair noted that no more contribution in the queue. If at least 2 requests for presentation are not received by Wednesday, then the call on Thursday will be cancelled.
2. Chair asks if there is AoB.
3. The meeting is adjourned without objection at 11:38 am ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 7/19 | Aboulmagd, Osama | Huawei Technologies Co., Ltd |
| TGbf | 7/19 | Aygul, Mehmet | VESTEL; IMU |
| TGbf | 7/19 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 7/19 | Chng, Shi Baw | BAWMAN LLC |
| TGbf | 7/19 | Du, Rui | Huawei Technologies Co., Ltd |
| TGbf | 7/19 | feng, Shuling | MediaTek Inc. |
| TGbf | 7/19 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 7/19 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 7/19 | McCann, Stephen | Huawei Technologies Co., Ltd |
| TGbf | 7/19 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 7/19 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 7/19 | Sosack, Robert | Molex Incorporated |
| TGbf | 7/19 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 7/19 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 7/19 | Wei, Dong | NXP Semiconductors |
| TGbf | 7/19 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 7/19 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Thursday, July 21, 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/22/11-22-1154-02-00bf-tgbf-meeting-agenda-2022-07-teleconference-part-2.pptx>

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3. TGbf Timeline
4. Call for contribution
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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 27 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). The Chair stated that the SP of timeline will be discussed at the beginning of August. The Editor also stated that for D1.0, we need to address all the comments and TBDs in the draft.
2. The Chair presents slide 20, Call for contributions.
3. The Chair presents the teleconference times (slide 21). The Chair is working with WG vice chair to confirm 5 sessions in September Interim meeting.
4. Presentations:

**11-22/1168r2, “Resolutions for CIDs Related to Measurement Setup ID and Termination: Part 1”, Pei Zhou (OPPO):** This submission proposes resolutions for CIDs 11, 46, 75, 76, 77, 80, 260, 261, 378, 492, 515 and 518. The text used as reference is 802.11bf D0.1.

Q: We need to get rid of TBDs and now is the time. Measurement Setup ID of 8 bits is initially suggested. We can update later if necessary. Please don’t reject CIDs 75, 76, and 77.

C: 8 bits seems reasonable.

C: It appears that it is already 8 bits in DMG. It doesn’t need to be the same, but 8 bits is reasonable. Actual numbers in NDPA and Trigger frames can be negotiated.

C: Rejection is not correct resolution when TBD exists. Not to decide the solution now. Anyway we need solution.

A: It will be updated to a new revision through offline discussion.

CIDs 260, 261, and 378 are the same and will be updated based on the offline discussion.

Q: For CIDs 80 and 492, the same issues are in the number of frames, e.g., SBP Request/Response frames, etc. Agree with the resolution. Please go to find other TBD places and do the same thing.

A: Will go through the text with commenter (Editor).

Q: Measurement Setup ID is not greater than 5 bits. Please do not resolve the comment as “rejected”.

Q: Any suggestion on the number of bits?

A: Just make 5 bits. Let’s do offline work.

Q: Motion 100 is deferred, but it is not clear which contents are already in Motion 100 and which ones are new. In addition, Motion 100 is denoted in the figure. We can still use 1 octet of Measurement Setup ID in other frame(s) and designate the rest of the bits as reserved if 5 bits is needed.

Q: Do we agree 5 bits in other document?

A: 5 bits is temporary and can be changed in the future. We can consider 5 bits as upper bound.

C: Place “upper bound” beside 5 bits.

The Chair stated that another presentation request is needed when the update is available.

**11-22/1170r0, “Resolutions for CIDs Related to Measurement Setup ID and Termination: Part 2”, Pei Zhou (OPPO):** This submission proposes resolutions for CIDs 132, 138, 139, 184, 275 and 634. The text used as reference is 802.11bf D0.1.

No question/comment is noted for CID 184.

For CID 275, the following discussions were noted:

Q: Don’t understand the rejection as a resolution. A sensing responder is unaware that it is involved in SBP procedure, and it can terminate a sensing measurement any time, therefore a sensing responder terminated a MS may trigger SBP procedure termination is possible.

If the sensing responder is the SBP initiator, and it send the sensing setup termination frame with a MSID which is involve in the SBP case, how we handle this situation?

C: In that case, it only terminates its own participation in the SBP procedure. It does not necessarily mean it has to terminate the whole SBP. If it wants to terminate the SBP, it will send an SBP termination rather than a measurement setup termination.

Q: If the number of the sensing responders is not fulfilled the requirement of the SBP request frame, how is the following behavior?

C: Again, let's separate the SBP termination with the sensing measurement setup termination.

Q: The normal TB is involved in the SBP case, how separate?

Q: Why do we have to mix these two together?

C: I don't like to mix the two too, but the reality is the SBP case includes the normal TB.

C: We could reuse the SBP termination text: An SBP procedure may be terminated at any time by either the SBP initiator or the SBP responder by transmittingan SBP Termination frame.

C: Support rejection. It is AP’s decision whether to terminate or not.

C: What the commenter wants is already in the Spec.

The Chair asked continued offline discussion.

For CID 634, “vice versa” will cause a lot of confusion in the future.

For CID 138 and 139,

C: This is overview section and two sentences related to CIDs 138 and 139 do not carry much information. Delete now and bring clarification text through offline discussion.

The Chair asked continued offline discussion.

**11-22/0829r3, “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.

This contribution was presented two weeks ago and nothing is changed for CID 1 and 647, but modification is done for CID 589.

No question/comment is raised.

**Straw poll was taken to approve the resolutions in 11-22/0829r3.**

**Result:** Approved by unanimous consent. Motion will be requested to the Chair.

1. The chair asks if there is AoB. No response from the group. The Chair will cancel next Monday’s call due to the lack of contribution requests. Monday slot will be used for ad hoc discussion on SBP-related issues.
2. The meeting is adjourned without objection at 12:31am ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 7/21 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 7/21 | Chng, Shi Baw | BAWMAN LLC |
| TGbf | 7/21 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 7/21 | Du, Rui | Huawei Technologies Co., Ltd |
| TGbf | 7/21 | feng, Shuling | MediaTek Inc. |
| TGbf | 7/21 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 7/21 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 7/21 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 7/21 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 7/21 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 7/21 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 7/21 | Wei, Dong | NXP Semiconductors |
| TGbf | 7/21 | Xin, Yan | Huawei Technologies Co., Ltd |
| TGbf | 7/21 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 7/21 | Zhang, Jiayi | Ofinno |
| TGbf | 7/21 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Tuesday, July 26, 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/22/11-22-1154-04-00bf-tgbf-meeting-agenda-2022-07-teleconference-part-2.pptx>

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9. The Chair, Tony Han, calls the meeting to order at 10:00 am 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 18) and asks if there are any questions or comments on the agenda. Contribution number 11-22/0882r0 was requested to be deferred and presented in the next call.

The Chair asks if there is any objection to approve the modified agenda. No objection from the group so the agenda is approved. By now two motion requests were received and the Chair stated that he will wait for more requests. Motions will be processed around two weeks later.

1. The Chair presents the TGbf timeline (slides 19). The Chair stated that the guidance is ready by Editor, we can discuss the timeline again.
2. The Chair presents slide 21, Call for contributions.
3. The Chair presents the teleconference times (slide 22). 5 sessions in September interim meeting are now secured. 4 PM2 sessions from Monday to Thursday and 1 additional session on Monday PM1.
4. Presentations:

**11-22/1175r0, “Comment Resolution for SBP CIDs”, Anirudha Sahoo (NIST):** This document resolves comment with CID 110, 177, 239, 317, 770.

CID 110. No question/comment was noted.

CID 177:

C: Resolution cannot be “rejected”, but should be “revised”.

C: We already have two status codes and ideally it is not good to introduce another one. It is better to use one of those already defined if possible.

CID 239: No question/comment was noted.

CID 317:

C: SBP procedure is one of sensing procedures, thus it seems to be placed under WLAN sensing procedure, not in separate sub-clause.

A: WLAN sensing and SBP sensing procedures are somewhat independent. WLAN sensing procedure can be without SBP procedure. DMG sensing has its own sub-clause.

C: We need to clarify sub-clause 11.21.18 is for sub-7 GHz.

A: Similar comment was submitted and is considered in other comment resolution.

Decision: Keep current structure and editorial discussion will come later.

CID 770: No question/comment was noted.

One or two major changes are needed and the plan is to have offline discussion with TTT members and to come back.

**11-22/1176r1, “Comment Resolution for Termination CIDs”, Anirudha Sahoo (NIST):** This document resolves comment with CID 221, 265, 911.

CID 221:

C: Sensing Termination frame is an Action frame that carries 3 fields and one of them is Dialog Token. Unless changed to management frame, we shouldn’t modify it.

A: Almost half of Action frames carries no Dialog Token.

C: In Public Action frame sub-clause 9.6.7, not all of them has Dialog Token.

C: Enough precedencies without Dialog Token are already there.

C: It is fine without Dialog Token.

CID 265:

C: Resolution should be “rejected.

A: Since Dialog Token is removed, the resolution should be “revised”.

CID 911:

C: This is similar to CID 634 that is assigned to other assignee (Pei Zhou) and probably just assign it to him.

C: We have to remove CID that depends on other document. Please send an e-mail to Pei Zhou for him to take over or copy Pei’s resolution when this document is revised.

C: Editor can simply change the assignee of this CID to Pei Zhou in comment assignment sheet.

C: Pei Zhou stated that this CID is already included in 1130.

Plan is to bring another revision with CID 911 removed. It is stated that CID 911 is just removed from the straw poll text and run the straw poll.

The Chair asked if there was any objection to approve the two CIDs, 221 and 265. No objection was raised. The revised document with two CIDs will be uploaded.

**11-22/1020r2, “PDT Formatting of CSI”, Steve Shellhammer (Qualcomm):** This document provides proposed draft text for IEEE 802.11bf D0.2.

C: Description and use of In,g is confusing. 2 bits of In,g seems good to avoid the confusion.

A: Offline discussion is needed.

C: It is preferred not to specify values Nb=10 and Ng=4.

A: It is fine to delete them.

C: In Eq. D, the order of index should be changed from (r, t, k) to (t, r, k).

A: It is good to catch.

C: In Table B, Reserved field with 0 or 4 bits seems odd. Original wording of “padding” is better to use.

A: No objection to use word “padding”. It is changed to padding.

C: When Bandwidth of 4 bits are defined in Table A, we can use 1 bit of In,g.

C: It doesn’t matter 1 or 2 bit. The text should be written clearly.

C: 2 bits make a decoding easier.

C: Use of “when” and “if” is not still clear.

A: The Editor provided the following:

Here is what we discussed in 22/0931r2:- Use “if” if the condition might occur (is not certain to occur).- Use “when” if the condition is certain to occur.- Almost always (in the 802.11 spec) the condition is not certain to occur and so “if” is appropriate. Certain things in 802.11 are pretty certain to occur (such as regular receipt of a beacon), but most things are not. “When” is currently overused in the .11 spec.

C: Why would you need the description of the smallest/largest size of CSI, and the equation of that?

A: Some people asked the description, but either way is fine.

C: In Eq. A, K should be changed to Nsc and it is defined as the number of sub-carriers.

A: This is correct.

C: Just add one column in the table below motion 97 text in the 1st page.

C: Equation for CSI size is useful, but the text is informative and more than necessary. Place “note” and reallocate the 1st paragraph explaining CSI size.

A: Agreed.

C: In page 6, replace CSI to 0.

C: Do we need Eq. A?

A: We don’t know whether it is needed or not. People’s opinion will be asked by e-mail.

Offline discussion will follow.

The Editor stated that guidance to proceed will be discussed on Thursday call. Use figures available in member’s area to address the comments if they are subject to comment resolution. We have two options from now on: D0.1 and D0.2. D0.2 is easier to work because it contains all the resolved comments. Make sure page numbers and line numbers referred to D0.1 or D0.2.

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 11:58am ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 7/26 | Aygul, Mehmet | VESTEL; IMU |
| TGbf | 7/26 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbf | 7/26 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 7/26 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 7/26 | Du, Rui | Huawei Technologies Co., Ltd |
| TGbf | 7/26 | feng, Shuling | MediaTek Inc. |
| TGbf | 7/26 | HAN, Xiao | Huawei Technologies Co., Ltd |
| TGbf | 7/26 | Huang, Lei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 7/26 | Huq, Kazi Mohammed Saidul | Ofinno |
| TGbf | 7/26 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 7/26 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 7/26 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbf | 7/26 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 7/26 | Ozbakis, Basak | Vestel Electronics Corp. |
| TGbf | 7/26 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 7/26 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 7/26 | Ryu, Kiseon | NXP Semiconductors |
| TGbf | 7/26 | Shellhammer, Stephen | Qualcomm Incorporated |
| TGbf | 7/26 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 7/26 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 7/26 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 7/26 | Wang, Chao Chun | MediaTek Inc. |
| TGbf | 7/26 | Wang, Hao | Tencent |
| TGbf | 7/26 | Wei, Dong | NXP Semiconductors |
| TGbf | 7/26 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 7/26 | Zhang, Jiayi | Ofinno |
| TGbf | 7/26 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Thursday, July 28, 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/22/11-22-1154-05-00bf-tgbf-meeting-agenda-2022-07-teleconference-part-2.pptx>

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

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The Chair goes through the agenda (slide 19) 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. It was stated that the same contribution request is listed twice and the agenda is revised. No objection from the group so the agenda is approved.

1. The Chair presents the TGbf timeline (slides 20). The Chair stated that the SP of timeline will be discussed at the beginning of August.
2. The Chair presents slide 22, Call for contributions.
3. The Chair presents the teleconference times (slide 23). The next call will be next Monday (08/01) and 5 sessions in September interim meeting is now secured.
4. Presentations:

**11-22/1214r0, “Comment Resolution (D0.1) Status Update and Recommendations”, Claudio da Silva (Meta Platforms Inc):** This submission reviews current status on comment resolutions and recommends what to do to meet the timeline for November D1.0 publication.

Current Status: By July closing, we have approved 25% of the comments submitted to CC40.

* Progress on technical and general comments has been slower: 93 out of 646 (14.4%)
* Progress of non-DMG sub-clauses has been even slower: 9 out of 522 (1.7%).
* We have very good number of volunteers, but small resolution is achieved for sub-7 GHz technical comments.

Timeline:

* Given 511 sub-7 GHz technical comments and to publish D1.0 in November, it may be useful to set a short-term goal of addressing 300 of such comments by the end of September interim meeting (7 weeks from now).
* Even for January 2023 publication, it would still need ~ 200 of sub-7 GHz technical comments to be resolved by the end of September.

Suggestions:

* PoCs should work with group so that at least 50% of its comments is resolved by the end of September interim meeting.
* Use straw polls as a tool to reach consensus and focus on the draft text, not on the SFD.

Q: Question was raised on the process to adopt a new functionality. How to handle a new contribution with new sequences of procedure, protocol, and so on. It is quite disruptive to add new sequences of procedure and protocol.

A: Agree that is it disruptive. Bring it to a task group and seek an agreement. Straw poll is a useful tool to handle this situation. Another way is to bring it to SFD.

The Chair stated that PoCs and assignees need to estimate the number of CIDs that can be resolved by the end of September interim plenary and send the estimates to the Editor, if possible.

The Chair and Editor will work offline how to handle new functionality and bring another guideline.

The Chair stated that another presentation request is needed when the update is available.

**11-22/882r1, “CR Document Resolving CIDs related to Immediate and Delayed Feedback Support”, Rajat Pushkarna (Panasonic Corp):** This submission proposes resolutions of comments received from TGbf comment collection 40 (TGbf Draft 0.1): CIDs: 376, 552 and 577 (3 CIDs).

CID 376 and 552: Resolution is “rejected” with the following reason:

* Support for Immediate or Delayed feedback is device dependent and should be exchanged as capabilities.

C: The use of Capabilities field in Extended Capabilities element is a concern. Decision on which feedback method is dynamic depending on the applications. It also depends on many factors. One example is timing requirement for immediate feedback.

C: Immediate feedback will depend on many factors such as STA capability, timing requirement, responder, application, and use case too. Agree that at the beginning phase, negotiation is needed. It strongly depends on use cases. In addition, 1 bit of capability may be sufficient or not.

C: Every STA should support delayed feedback as default.

A: Immediate feedback is dependent on application and device.

The Chair asked for continued offline discussion.

**11-22/1934r8, “Discussion on Session Setup”, Chaoming Luo (OPPO):** This contribution discusses more about the detail of session setup procedure and frame formats. It proposes to remove Sensing Session, correspondingly Sensing Session Setup and Sensing Session Termination phases are removed.

C: For SP 1, slide 9 should be slide 10. Motion 15 already passed defined sensing session setup and termination. Is your intention to change the motion?

A: Slide 10 is correct. When writing a PDT, anything can be proposed. If group agrees, then it can be changed. SP 3 is proposed because it is hard to write what are in session setup and termination frames.

C: It is confusing the name of T2 timer.

A: The name of T2 timer is changed from inactivity timer to activity timer.

Straw poll 1 was run.

Result: Approved by unanimous consent.

C: In SP 2, UID is changed to USID.

A: Correct.

C: In 2nd bullet, add “within frame exchange timeout T1” after U-STA.

A: Done.

Straw poll 2 was run.

Result: Approved by unanimous consent.

Straw poll 3 is deferred to have more offline discussion with other assignees working on session setup and termination.

C: In SP 4, change non-AP STA’s to non-AP U-STA’s.

A: Done.

Q: Are sensing capabilities once defined, then will they be delivered in these frames?

A: Correct.

Straw poll 4 was run.

Result: Approved by unanimous consent.

Q: What does it mean AP “invites”?

A: AP does not specify U-STA. Any STA can receive unicast frame.

C: It is confusing that “1 bit” fits into an Information element.

A: 1 bit + 7 reserved bits. It is not decided which element carries this information.

C: Comment was raised on 1 bit invitation in Probe Response.

A: Without this, overhead will occur.

Straw poll 5 was run.

Result: Approved by unanimous consent.

The plan is to prepare the PDT based on straw polls 1, 2, 4, and 5.

**11-22/0976r2, “CC40 CR for Topic Threshold – Part 1”, Mengshi Hu (Huawei Technologies):** This submission contains the proposed comment resolutions for the following 10 CIDs in the Topic “Threshold” shown in 22/0820 IEEE 802.11bf CC40 comments.

Due to technical difficulty and the lack of time, the presentation is postponed to the next conference call.

1. The chair asks if there is AoB. No response from the group. The Chair stated that the next call will be on Monday (08/01).
2. The meeting is adjourned without objection at 12:55am ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 7/28 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbf | 7/28 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 7/28 | Dash, Debashis | Apple Inc. |
| TGbf | 7/28 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 7/28 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 7/28 | Du, Rui | Huawei Technologies Co., Ltd |
| TGbf | 7/28 | feng, Shuling | MediaTek Inc. |
| TGbf | 7/28 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 7/28 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 7/28 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 7/28 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 7/28 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 7/28 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 7/28 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 7/28 | Wei, Dong | NXP Semiconductors |
| TGbf | 7/28 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 7/28 | Zhang, Jiayi | Ofinno |
| TGbf | 7/28 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Monday, August 01, 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/22/11-22-1154-06-00bf-tgbf-meeting-agenda-2022-07-teleconference-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. 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 33 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 modified agenda. It was stated that the same contribution request is listed twice and the agenda is revised. No objection from the group so the agenda is approved.

1. The Chair presents the TGbf timeline (slides 21). The Chair stated that the SP of timeline will be discussed at the beginning of August.
2. The Chair presents slide 23, Call for contributions.
3. The Chair presents the teleconference times (slide 24). The Chair stated that the next teleconference call will be tomorrow (08/02).
4. Presentations:

**11-22/0976r3, “CC40 CR for Topic Threshold – Part 1”, Mengshi Hu (Huawei Technologies):** This submission contains the proposed comment resolutions for the following 10 CIDs in the Topic “Threshold” shown in 22/0820 IEEE 802.11bf CC40 comments: CIDs 18, 97, 128, 200, 282, 499, 558, 562, 628, 910.

CID 128:

C: The description is better placed under the Figure 11-41c.

A: It will be.

C: In Figure 11-41e, for those STAs that are not supporting CSI Variation Reporting, is Measurement Reporting sub-phase placed before or after CSI Variation Reporting sub-phase?

A: It has not discussed with group. The presenter stated that an easy way is after CSI Variation Reporting sub-phase. CID 128 is deferred to allow for further discussion.

C: Use of Sub-variants of Trigger frame is explicit. One sub-variant of seeking CSI threshold-based reporting and the other of seeking measurement reporting.

A: Take offline discussion.

CID 499: No question/comment was raised.

CID 558: No question/comment was raised.

CID 562:

C: Suggestion is to simply propose the names of frames A, B, and C.

A: Will provide the resolution from another CID.

C: It is OK with rejection. However, the efficiency is not clear. If many STAs have CSI variation, then overhead will be increased.

A: It depend on case-by-case. If CSI variations are relatively small, e.g., not many STAs are on the move, then efficiency is clear.

**Straw Poll:** Do you support resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: 18, 200, 628, 97, 282, 499, 558, 562, 910 in 11-22/0976r4 [9 CIDs]?

**Result:** Supported by unanimous consent.

The Chair stated that the presenter can send motion request by e-mail.

**11-22/1168r5, “Resolutions for CIDs Related to Measurement Setup ID and Termination: Part 1”, Pei Zhou (OPPO):** This submission proposes resolutions for CIDs 11, 46, 75, 76, 77, 80, 260, 261, 378, 492, 515 and 518. The text used as reference is 802.11bf D0.2.

**Straw Poll:** Do you support resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: 11, 46, 75, 76, 77, 80, 260, 261, 378, 492, 515 and 518 in 11-22/1168r5 [12 CIDs]?

**Result:** Supported by unanimous consent.

The Chair stated that the presenter can send motion request by e-mail.

**11-22/1170r1, “Resolutions for CIDs Related to Measurement Setup ID and Termination: Part 2”, Pei Zhou (OPPO):** This submission proposes resolutions for CIDs 132, 138, 139, 184, 275 and 634. The text used as reference is 802.11bf D0.2.

CID 132:

Q: Do we need a global change?

A: A note is added to address CID 911. That should be sufficient.

Based on the suggestions, the description in the note is modified:

Note: Sensing measurement setup termination only applies to the measurement setup(s) between the peer STAs of the Sensing Measurement Setup Termination frame exchange and not to the other sensing responders with the same Measurement Setup ID. (#911)

CID 139:

C: The last sentence does not add any meaning and it is OK to remove.

A: This is Overview section. Every procedure should be included. If the last sentence is removed, then it will everything – 1.

C: Agree, but point is on the quality of the Spec. To maintain the high quality of the Spec, it is better to rephrase and add more meaning.

C: Rephrase is suggested.

A: The reason of rejection is not reflected the comment.

The last sentence is modified as:

“A sensing session is active until terminated in a sensing session is termination.(#139)”

C: Sensing session is not defined yet, please defer the resolution of this CID.

A: OK.

The Chair asked any objection for straw poll and one objection was noted.

**Straw Poll:** Do you support resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: 132, 138, 184, and 275 in 11-22/1170r2 [4 CIDs]?

**Results:** 14Y, 3N, 9A.

The Chair stated that the presenter can send motion request by e-mail.

**11-22/1175r1, “Comment Resolution for SBP CIDs”, Anirudha Sahoo (NIST):** This document resolves comment with CID 110, 177, 239, 317, and 770.

CID 770:

C: In the modified text, informative language is appropriate, thus change “shall be considered” to “is considered”.

A: Clause 11 is normative and we have many precedence in using “shall be”.

**Straw Poll:** Do you support resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: CID 110, 177, 239, 317, and 770 in 11-22/1175r1 [5 CIDs]?

**Results:** Supported byunanimous consent.

1. The chair asks if there is AoB. No response from the group. The Chair stated that the next call will be on Thursday (08/04) due to the unviability of the presenters and lack of submission. Thus the call tomorrow is cancelled.
2. The meeting is adjourned without objection at 12:01pm ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 8/1 | Aygul, Mehmet | VESTEL; IMU |
| TGbf | 8/1 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbf | 8/1 | Choi, Jinsoo | LG ELECTRONICS |
| TGbf | 8/1 | Dash, Debashis | Apple Inc. |
| TGbf | 8/1 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 8/1 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 8/1 | Du, Rui | Huawei Technologies Co., Ltd |
| TGbf | 8/1 | Eitan, Alecsander | Qualcomm Technologies, Inc. |
| TGbf | 8/1 | feng, Shuling | MediaTek Inc. |
| TGbf | 8/1 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 8/1 | HAN, Xiao | Huawei Technologies Co., Ltd |
| TGbf | 8/1 | Hsu, Ostrovsky | Xiaomi Inc. |
| TGbf | 8/1 | Huang, Lei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 8/1 | Jang, Insun | LG ELECTRONICS |
| TGbf | 8/1 | Kain, Carl | USDOT; Noblis |
| TGbf | 8/1 | Kamel, Mahmoud | InterDigital, Inc. |
| TGbf | 8/1 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 8/1 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 8/1 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 8/1 | McCann, Stephen | Huawei Technologies Co., Ltd |
| TGbf | 8/1 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 8/1 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 8/1 | Ryu, Kiseon | NXP Semiconductors |
| TGbf | 8/1 | Sahoo, Anirudha | National Institute of Standards and Technology |
| TGbf | 8/1 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 8/1 | Wang, Chao Chun | MediaTek Inc. |
| TGbf | 8/1 | Wei, Dong | NXP Semiconductors |
| TGbf | 8/1 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 8/1 | Zhang, Jiayi | Ofinno |
| TGbf | 8/1 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Thursday, August 4, 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/22/11-22-1249-02-00bf-tgbf-meeting-agenda-2022-08.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 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. He stated that we have a long queue of contribution requests and more comment resolutions will be followed.

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). The Chair stated that the SP of timeline will be discussed during a later time of August.
2. The Chair presents slide 20, Call for contributions.
3. The Chair presents the teleconference times (slide 21). The next call will be next Monday (08/08).
4. Presentations:

The Editor reviewed the comment spreadsheet focusing on sub-7 GHz technical comments. PoCs reported that a total of 318 technical comments can be resolved by September Interim meeting. Since we estimate that ~300 technical comments are required to be resolved to meet November D1.0 publication, it seems feasible to meet November target. The Editor strongly recommended PoCs to contact with assignees for their availability of comment resolutions. In addition, he encouraged group members to bring the comment resolutions when ready, not waiting until September meeting.

Q: The meaning of the numbers in the last column is asked.

A: The number is the comments approved by that time.

**11-22/1203r0, “SBP Procedure Setup”, Claudio da Silva (Meta Platforms Inc):** This contribution aims to seek feedback from the group, and converge, on possible answers/solutions to the questions on SBP Setup. Two straw polls were dicussed for comment.

Q: In SP 1, is the total number of sensing responders exact or minimum numbers?

A: It is open for suggestion and no answer is available at this point of time.

C: 2nd bullet and the last sub-bullet are somewhat contradictory. It is recommended to change “Preferred” to “Suggested”.

Point is whether we can provide MAC list or not. Hopefully we can provide the answer for this comment at a later stage.

C: In general, this contribution is fine, but we need more discussion for detail.

C: In general, this contribution is fine. In the last sub-bullet in SP 1, rejection is fine, but we need a reason for rejection.

A: There will be a number of reasons for rejection, e.g., sensing responder may be at power save state, out of coverage, etc.

C: Since the sentence starts “accept” on SBP request, rejection seems contradictory. SBP initiator knows somehow the STA(s) nearby, but no direct sensing is possible. In such a case, AP can help and that’s is the motivation for this information on MAC list.

The Chair asked to take offline discussion and stated around 10 minutes will be allocated next call.

The Chair stated that PoCs and assignees need to estimate the number of CIDs that can be resolved by the end of September interim plenary and send the estimates to the Editor, if possible.

**11-22/1237r0, “Resolutions for Editorial Comments in CC40 - Part 6”, Claudio da Silva (Meta Platforms Inc):** This submission proposes resolutions to editorial comments submitted in CC40. The text used as reference is D0.2 - CIDs: 230, 28, 31, 403, 206, 721, 3, 4, 27, 720, 446, 722, 442, 29, 404, 406, 30, 32, 718, 719, 208, 724, 725, 726, 207, 405.

CID 4:

C: In proposed modifications, it is better to change “shall begin transmitting” to “shall transmit”.

A: See a point and look into it.

C: Last sentence does not look as normative.

A: Comment is valid. Current description is not properly written. Assaf will address the issue before publishing D1.0.

CID 720 (Rejected):

C: Agree with a commenter. Prefer “perform” to “begin”.

CID 722, 442:

C: Minor editorial. “with” is needed in the last bullet.

Plan: We will have a week to review. Straw poll will be taken next time and request will be sent to Tony.

**11-22/1206r0, “CC40 CR for CIDs 7, 470, and 509”, Rui Du (Huawei):** This submission contains the proposed comment resolutions for the CIDs 7, 470, and 509.

C: In Figure 9-1002av – Sensing Measurement Parameters field format, change “TBD” to “Reserved”.

A: OK.

C: 1st column in the table, “Name” should be changed to “Value”.

A: It is already changed in D0.2.

C: 8 bits of Sensing Measurement Report Type field is too many and 2 or 3 bits seems enough considering future extension. 3 bits of Sensing Measurement Report Type field and 2 bits of “Reserved” field will reduce the signaling overhead.

A: Open for discussion. If 3 bits is assumed, then the Table 9-401s - Sensing Measurement Report Type subfield definition should be changed.

C: Reserved value is changed to 1 – 7.

C: Why don’t we try 3 bits, if no objection, then OK.

A: No objection was noted.

The presenter will update the document and send presentation request again.

**11-22/1248r0, “Sensing Measurement Report format Discussion”, Rojan Chitrakar (Panasonic Corporation):** This submission proposes to use field(s) to carry the sensing measurement reports instead of element.

Offline discussion will be continued.

1. The chair asks if there is AoB. No response from the group. The Chair stated that the next call will be on Monday (08/08).
2. The meeting is adjourned without objection at 01:00 am ET.

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 8/4 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 8/4 | da Silva, Claudio | Meta Platforms, Inc. |
| TGbf | 8/4 | feng, Shuling | MediaTek Inc. |
| TGbf | 8/4 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 8/4 | Hsu, Ostrovsky | Xiaomi Inc. |
| TGbf | 8/4 | Huang, Lei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbf | 8/4 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 8/4 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbf | 8/4 | narengerile, narengerile | Huawei Technologies Co., Ltd |
| TGbf | 8/4 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 8/4 | Sahoo, Anirudha | National Institute of Standards and Technology |
| TGbf | 8/4 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 8/4 | Wei, Dong | NXP Semiconductors |
| TGbf | 8/4 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 8/4 | Zhang, Jiayi | Ofinno |
| TGbf | 8/4 | Zhang, John | GuangDong OPPO Mobile Telecommunications Corp., Ltd. |

**Monday, August 8, 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/22/11-22-1249-03-00bf-tgbf-meeting-agenda-2022-08.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 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 agenda. No objection from the group so the agenda is approved.

1. The Chair presents the TGbf timeline (slides 19 and 20). The Chair stated that the SP of timeline will be discussed during a later time of August.
2. The Chair presents slide 21, Call for contributions.
3. The Chair presents the teleconference times (slide 22).
4. Presentations:

**11-22/1020r4, “PDT Formatting of CSI”, Steve Shellhammer (Qualcomm):** Steve goes through the updates made compared to the previous revision.

Q: For Sensing Measurement Report Type, has there been a decision or is it still TBD?

A: It has been a decision to use one byte. However, there is a proposal to reduce it so it may be changed in the future.

Some discussion on minor editorial matters.

**Straw Poll:** Does the group agree to set the document ready for motion.

**Supported unanimously.**

**11-22/1224r0, “CR for CC40 Instance TTT”, Junghoon Suh (Huawei):** This submission proposes resolutions for the follwing 9 CC40 CIDs: 65, 119, 123, 124, 136, 193, 194, 477, and 550. The proposed changes are based on IEEE 802.11bf D0.1 [1].

CID 65: No discussion.

CID 119: No discussion.

CID 123: No discussion.

CID 124: No discussion.

CID 136: No discussion.

CID 193: No discussion.

CID 194: No discussion.

CID 477: Some discussion and as a result the proposed resolution is updated.

CID 550: No discussion.

**Straw Poll:** Does the group agree to set the document ready for motion after modified based on the discussion.

**Supported unanimously.**

**11-22/1245r0, “Resolutions for Editorial Comments in CC40 – Part 40”, Claudio da Silva (Meta):** CIDs: 386, 398, 185, 017, 191, 024, 613, 881, 753, 475, 288, 615, 614, 026, 170, 171, 173, 159, 162, 862, 864, 476, 621, 630, 631, 786, 160

CID 386 and 398: No discussion.

CID 185 and 17: No discussion.

CID 191: No discussion.

CID 24: Some discussion, but no change of the proposed resolution.

CID 613: No discussion.

CID 881,753, and 475: No discussion.

CID 288: No discussion.

CID 615: No discussion.

CID 614: No discussion.

CID 26: No discussion.

CID 170 and 171: Some discussion, but currently no major change to the proposed resolution.

CID 173: Some discussion about how this relates to other CIDs.

CID 159: No discussion.

CID 162: Some discussion.

CID 862 and 864: No discussion.

CID 476 and 621: No discussion.

1. The chair asks if there is AoB. No response from the group.
2. The meeting is adjourned without objection at 12:00 pm ET.

**List of Attendees:**

**Tuesday, August 9, 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/22/11-22-1249-05-00bf-tgbf-meeting-agenda-2022-08.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 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 19) 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 20 and 21).
2. The Chair presents slide 22, Call for contributions.
3. The Chair presents the teleconference times (slide 23).
4. Presentations:

**11-22/1245r1, “Resolutions for Editorial Comments in CC40 – Part 40”, Claudio da Silva (Meta):** CIDs: 386, 398, 185, 017, 191, 024, 613, 881, 753, 475, 288, 615, 614, 026, 170, 171, 173, 159, 162, 862, 864, 476, 621, 630, 631, 786, 160

This is a continuation of the presentation yesterday.

CID 615: Updated from yesterday to “revised”.

CID 170 and 171: Updated with details how to implement the proposed change.

CID 173 and 546: CID 546 added.

CID 162: Updated from yesterday to “accepted”.

CID 630: Some discussion, but no objection to the proposed resolution.

CID 631: No discussion.

CID 786 and CID 160: No discussion.

**11-21/1934r9, “Discussion on Session Setup”, Chaoming Luo (OPPO):** The contribution has already been presented and the purpose is to just run SP3.

**Straw Poll 3:** Which of the following options do you prefer?

* **Option A**: Remove Sensing Session, add a subclause to describe sensing capability exchange for all STAs, and describe the active/inactive state machine for U-STA only.
* **Option B**: Keep Sensing session for all STAs, describe sensing capability exchange in sensing session setup for all STAs, and describe the active/inactive state machine in sensing session for U-STA only.
* **Option C**: Abstain

**Result:** A/B/C: 4/16/10

**11-21/1243r0, “Resolutions for Instance Comments in CC40 – Part 1”, Cheng Chen (Intel):**

This submission proposes resolutions to editorial comments submitted in CC40. The text used as reference is D0.2.

CIDs: 131 161 432 163 309 345 400 564 566 660 760 885

CID 131: No discussion

CIDs 161 and 432: Some discussion about the need to define “availability window”, but the proposed resolution is supported.

CID 163: After discussion, the resolution is updated and changed from rejected to revised.

CID 309: Some discussion for clarification, but no change of the proposed resolution.

CID 345: Some discussion for clarification, but no change of the proposed resolution.

CID 400: No discussion.

CID 564: Some discussion, but no change of the proposed resolution.

CID 566: Claudio suggests that he takes the CID as it is similar to one he is already resolving.

CID 660: Some discussion for the motivation of the resolution, but no problem with the resolution as such.

CID 760: No discussion.

CID 885: No discussion.

**11-21/1244r1, “Resolutions for Instance Comments in CC40 – Part 2”, Cheng Chen (Intel):**

This submission proposes resolutions to editorial comments submitted in CC40. The text used as reference is D0.2.

CIDs: 273 192 616 618 619 274 348

CID 273: No discussion.

CID 274 and CID 348: Some discussion. 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 12:02 pm ET.

**List of Attendees:**

**Thursday, August 11, 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/22/11-22-1249-07-00bf-tgbf-meeting-agenda-2022-08.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 an hour 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 and 22).
2. The Chair presents slide 23, Call for contributions.
3. The Chair presents the teleconference times (slide 24).
4. Presentations:

**11-22/1203r1, “SBP Procedure Setup”, Claudio da Silva (Meta):** This is a continuation of the presentation last week. The intention is to run the two SPs.

Q: About SP2, is there a possibility for the SBP responder to suggest another setting?

A: Currently it is not, but I believe we should change this so that the responder can do accept, reject, or propose an alternative.

Q: What if the AP says accept even if not the desired number of sensors are available, say only one is available, but five have been requested by the initiator?

A: The initiator will then realize there is only one measurement, so it can decide itself if to use it or not.

Q: I believe it makes sense to indicate the minimum number of needed sensors for obtaining a useful result. I also believe that the requesting STA should know the AP capabilities and not request something that obviously is not supported by the AP.

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

* SBP Request frame shall include
	+ One field used to request a total number of sensing responders
		- One bit used to indicate if the request shall be rejected or may be accepted if the total number of sensing responders can’t be supported.
			* Example: Set to 1 to indicate that request shall be rejected if the total number of sensing responders can’t be supported. Set to 0 to indicate that a smaller number of sensing responders is acceptable.
	+ One optional element that defines a Sensing Responder List used to indicate the identities of sensing responders requested by the SBP initiator
		- The element includes a list of MAC addresses of the preferred sensing responders
		- One bit used to indicate if only sensing responders in the provided list shall be used or not.
			* Example: 1 is set to indicate only sensing responders in the provided list shall be used. 0 is set to indicate that sensing responders that are not on the list, but that can satisfy requested operational parameters, may be used.

**Result:** Unanimously supported.

**Straw Poll 2:** Do you agree with the following:

* The SBP Request frame shall include one Sensing Measurement Parameters element, as defined in 9.4.2.317 (Sensing Measurement Parameters element), that is used to request operational parameters to be used in sensing measurement instances that result from the SBP request.
* The SBP Request frame may also include other SBP-specific operational parameter fields/elements, such as one used to indicate whether the SBP initiator requests to participate in the WLAN sensing procedure as a sensing responder.

**Result:** Unanimously supported.

**11-22/1244r2, “Resolutions for Instance Comments in CC40 – Part 2”, Cheng Chen (Intel):**

This submission proposes resolutions to editorial comments submitted in CC40. The text used as reference is D0.2. The presentation of the contribution started in the last call, and this is a continuation.

CIDs: 273 192 616 618 619 274 348

CIDs 192, 616, 618, and 619:

Q: It is clear what shall be done if at least one STA is assigned to be polled, but it is not equally clear if no STA is assigned to be polled. Perhaps we should add a sentence to also cover this case?

After some discussion, it is decided that the text is fine as it is.

Based on one comment related to the bandwidth that is used, it is agreed that the proposed text needs to be slightly updated.

Based on one comment, Cheng suggests updating some of the figures to make things more clear.

CID 274 and CID 348: The proposed resolution for these two CIDs has been updated since the last presentation. No discussion.

**11-22/0927r2, “Comment Resolution for CIDs Related to WLAN Sensing Procedure Overview (11.21.18.1)”, Chris Beg (Cognitive Systems):** This document proposes resolutions to the following CC40 CIDs: 89, 187, 474, 532, 606, 714, 776, 777, 814, 846, 847, 849, and 875. All CIDs relate to clause 11.21.18.1 in 802.11bf D0.1/D0.2.

CIDs 532 and 846: There are some editorials comments that are to be taken off-line.

CID 89: No discussion.

CIDs 187 and 606:

Q: A slightly update of the wording in the proposed resolution is suggested. Suggested to take this discussion off-line.

CIDs 714, 776, 814, 847, 875: No discussion.

CIDs 849, 777: No discussion.

CID 474: Some discussion that will be sorted out off-line.

The plan is to bring back an updated revision after having the off-line discussions.

**11-22/0930r3, “Comment Resolution for CIDs Related to TB Sensing Measurement Instance”, Chris Beg (Cognitive Systems):** This document proposes resolutions to the following CC40 CIDs: 125, 863, 866, 167, 92, 195, and 625.

CIDs 125 and 863: No discussion.

CID 866: Some editorial comments and the proposed resolution is updated accordingly.

CID 167: 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 01:01 am ET.

**List of Attendees:**

**Monday, August 15, 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/22/11-22-1249-03-00bf-tgbf-meeting-agenda-2022-08.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 an hour 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.

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 and 23). The Chair stated that the SP of timeline will be discussed during a later time of August.
2. The Chair presents slide 24, Call for contributions.
3. The Chair presents the teleconference times (slide 25).
4. Presentations:

**11-22/0930r3, “Comment Resolution for CIDs Related to TB Sensing Measurement Instance”, Chris Beg (Cognitive Systems):** This document proposes resolutions to the following CC40 CIDs: 125, 863, 866, 167, 92, 195, and 625.

This is a continuation from the latest teleconference.

CIDs 92, 195, and 625:

Q: I propose to remove the word “only”.

A: I am OK with that.

Some more discussions, but no more modifications to the proposed resolution is done.

CID 167: Some discussion resulting in that the proposed resolution is slightly updated.

The chair suggests having more off-line discussion due to that there were a number of people in the queue.

**11-22/1237r1, “Resolutions for Editorial Comments in CC40 - Part 6”, Claudio da Silva (Meta Platforms):**

Claudio goes through the updates that have been done since the last revision.

**Straw Poll:** Do you support the proposed resolutions.

The group unanimously support setting the document ready for motion.

**11-22/1245r4, “Resolutions for Editorial Comments in CC40 - Part 7”, Claudio da Silva (Meta Platforms):**

Claudio goes through the updates that have been done since the last revision.

CIDs 185 and 17:

Based on feedback from the group some minor editorial changes are done.

CID 630: Short discussion, no objection to the proposed resolution.

**Straw Poll:** Do you support the proposed resolutions.

The group unanimously support setting the document ready for motion.

**11-22/1261r1, “Resolutions for Editorial Comments in CC40 - Part 8”, Claudio da Silva (Meta Platforms):** This submission proposes resolutions to editorial comments submitted in CC40. The text used as reference is D0.2.

CIDs: 632, 174, 566, 635, 637, 636, 638, 639, 176, 010, 117, 382, 383, 384, 134, 387, 582, 873, 135, 677

CID 632: No discussion.

CIDs 174 and 566: No discussion.

CIDs 635 and 637: No discussion.

CID 636:

Proposed to transfer CIDs 635 – 639 to Pei. This is agreed by Claudio and the group.

CID 176: No discussion.

CID 10: No discussion.

CID 117: The resolution is changed from revised to rejected.

CID 382: Some discussion, but no change to the proposed resolution.

CID 383: No discussion.

CID 384: A minor editorial typo is noted.

CID 134: No discussion.

CIDs 387,582,873,135, and 677: No discussion.

**11-22/1273r0, “Comment Resolution for Setup CIDs (Part 2)”, Anirudha Sahoo (NIST):** This document resolves comment with CIDs 88, 431, 453, 612, 751 and 752

CIDs 88, 431, 453, 612, and 751: No discussion.

CID 752: Some discussion with respect to whether “shall” should be used instead of “should”. The commenter explains the reason for using should, and this is agreed by the group.

**Straw Poll:** Do you support the proposed resolutions.

The group unanimously support setting the document ready for motion.

**11-22/1206r1, “****CC40 CR for CIDs 7, 470, and 509”, Rui Du (Huawei):** This submission contains the proposed comment resolutions for the CIDs 7, 470, and 509.

Revision 0 of the document has already been presented.

CIDs 7,470, and 509: Based on comments from the group, it is proposed to not change TBD to Reserved.

Run out of time. Proposed by the chair to continue the discussion tomorrow.

1. The chair asks if there is AoB. No response from the group.
2. The meeting is adjourned without objection at 12:02 pm ET.

**List of Attendees:**