IEEE P802.11
Wireless LANs

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| IEEE 802.11 TGbqTeleconference Minutes April 2025 |
| Date: 2025-04-15 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Jonghoe Koo | Samsung Electronics |  |  | jh89.koo@samsung.com |

Abstract

This document contains the IEEE 802.11 TGbq minutes for the teleconferences on April, 2025.

Revision history:

R0: initial version with the draft minutes for teleconference on 1 April 2025.

R1: added the draft minutes for teleconferences on 8 April 2025.

Abbreviations:

Q Question

A Answer

C Comment

# Tuesday, April 1 2025, 09:30am - 11:00am (EDT)

TGbq Chari: Edward Au (Huawei)

TGbq Vice-Chair: Rui Cao (NXP)

TGbq Vice-Chair: Abhishek Patil (Qualcomm)

TGbq Vice-Chair: Sang Kim (LG Electronics)

TGbq secretary: Jonghoe Koo (Samsung Electronics)

TGbq Editor: Cheng Chen (Intel)

**Opening formalities**

1. The IEEE 802.11 TGbq meeting was called to order at 09:30 EDT by the Chair.
2. Vice-chair Sang Kim introduced himself and sceratary Jonghoe Koo introduced himself.
3. Chair reminded the meeting registration.
4. Chair presented the TGbq meeting agenda [IEEE 802.11-25/0514r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0514-00-00bq-april-2025-teleconference-agenda.xlsx) and reviewed the agenda items.
5. Chair reviewed the meeting agenda and the agenda was approved by unanimous consent.

**[Administrative items]**

1. Chair presented TGbq supplementary materials [IEEE 802.11-25/0191r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0191-00-00bq-tgbq-supplementary-materials-for-meetings.pptx) slides.
2. Chair reviewed IEEE 802 required notices (emphasizing to ensure to announce name and affiliation at the first time to speak, anti-trust compliance, IEEE 802 WG rules and policies, etc.), IEEE SA meeting guidelines, IEEE Codes of Ethics and Conduct, IEEE individual process, and IEEE-SA standards activities with the fair and equitable consideration.
3. Chair reminded all to record their attendance in IMAT and other meeting reminders.

**Contributions**

**Presentation of** [**IEEE 11-25/0363r0**](https://mentor.ieee.org/802.11/dcn/25/11-25-0363-00-00bq-channelization-in-immw.pptx)**, Channelization in IMMW (Yapu Li (OPPO))**

1. Yapu presented the contribution [IEEE 11-25/0363r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0363-00-00bq-channelization-in-immw.pptx).
2. Q: The proposal, non-overlapped and non-aggregated channelization, is to define a new one rather than using the legacy channelization. How does the non-overlapping channelization make the IMMW signalling easier and what is the benefit of doing this?
3. A: We can reuse EHT or UHR PHY design where there are no overlapped channels except for 320 MHz channels. For 20, 40, 80, and 160 MHz, we have non-overlapped and non-aggregated channels. We can reuse this design for IMMW.
4. Q: Assuming that we consider the overlapped channelization, do we still consider the channel numbering that you proposed even to the non-overlapped channelization?
5. A: I think we can reuse the channel number. We may also need to define a preamble for IMMW 320 MHz
6. Q: Any thought about the scaling factor?
7. A: It needs further study since the scaling factor should be considered together with phase noise.

**Presentation of** [**IEEE 11-25/0365r0**](https://mentor.ieee.org/802.11/dcn/25/11-25-0365-00-00bq-ppdu-format-for-immw.pptx)**, PPDU Format for IMMW (Eunsung Park (LG Electronics))**

1. Eunsung presented the contribution [IEEE 11-25/0365r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0365-00-00bq-ppdu-format-for-immw.pptx).
2. Q: In Slide 3, do you think we have to expand STF period, which incurs more processing time. AGC consumes one or several microseconds.
3. A: It is also one of the approaches to increase the length of the STF, though we need further discussion and investigation. It depends on a beamforming capability. If we use a directional antenna, in this case we may consider shorter than the omnidirectional case.
4. Q: In slide 4, you proposed a non-HT style. However, DCM and DUP mode have already been defined in sub 7 GHz. What is the benefit of the non-HT mode compared with the DUP mode and DCM? Furthermore, there are duplicate parts in EHT preamble. What is the benefit of introducing a different structure?
5. A: If there is no STF2 and LTF2, we have an advantage in terms of overhead. We can use this when the packet size is small.
6. Q: In slide 3, both two options are solely new designs. However, we have discussed to reuse EHT/UHR PPDUs for basic PPDU format.
7. A: We also consider reusing them. However, we may need longer STF or slightly modify them for IMMW.
8. Q: In slide3, do you think that 11a like PPDU can be applied to MIMO?
9. A: We can use 7 GHz to exchange side information. Though we use option 1 (11a like PPDU) for MIMO, it does not provide good efficiency so we may need to restrict other option for MIMO case.
10. C: Unified PPDU format is preferred.
11. Q: Do you consider a duplicate preamble structure for wider bandwidth case?
12. A: For both cases, STF, LTF, and SIG parts can be duplicate in the wider bandwidth where data part can be further optimized.
13. Q: In slide 6, you proposed a duplicate tone plan for the smallest bandwidth and proposed to allow separate PHYs to process each frequency sub-block. Is it aligned with ‘upclocking’ that we have discussed? Tone plans for 512-FFT and 1024-FFT are not duplicate with each other.
14. A: The intention was to use 80 MHz bandwidth case for the smallest bandwidth. However, we can determine the smallest bandwidth later based on the discussion.
15. Q: Is it the intention of your proposal that a tone plan for 512-FFT and another tone plan for 1024-FFT in wider bandwidth mode are duplicate?
16. A: If we assume to use 80 MHz as the smallest bandwidth, then we can use a duplicate tone plan as described in this proposal.
17. Q: For the data portion, a whole bandwidth is processed. Then what does it mean to process each frequency sub-block with separate PHYs?
18. A: We need further discussion later.
19. Q: Regarding the SIG, do you want to enable IMMW-SIG in addition to U-SIG? Alternatively, do you want to define a completely new design?
20. A: We need further discussion later. We think about L-SIG, too.
21. C: My preference is to remove L-SIG and, instead, to use a unified U-SIG for easier feature extension.
22. Q: We do not need L-SIG in my opinion. It is enough to define a new SIG format, e.g., U-SIG + xx-SIG.
23. A: I agree that we do not have to consider the backward compatibility.

**Closing formalities**

1. Chair announced that two MAC contributions are scheduled for presentation next week.
2. Chair called for PHY contributions.

**Adjourn**

1. The chair announced that the call was adjourned at 10:26am EDT.

**List of Attendees**

TGbq 04/01/2025 Li, Haozheng TP-Link System Inc.

TGbq 04/01/2025 Zhou, Lei H3C Technologies Co., Limited

TGbq 04/01/2025 Li, Weiyi Spreadtrum Communication USA, Inc

TGbq 04/01/2025 Lee, Hong Won LG ELECTRONICS

TGbq 04/01/2025 Dong, Xiandong Xiaomi Communications Co., Ltd.

TGbq 04/01/2025 Luo, Chaoming Beijing OPPO telecommunications corp., ltd.

TGbq 04/01/2025 Wang, Zisheng ZTE Corporation

TGbq 04/01/2025 Sambasivan, Sam AT&T

TGbq 04/01/2025 Sadiq, Bilal Samsung Research America

TGbq 04/01/2025 Rosdahl, Jon Qualcomm Technologies, Inc.

TGbq 04/01/2025 Quan, Yingqiao Spreadtrum

TGbq 04/01/2025 Patwardhan, Gaurav Hewlett Packard Enterprise

TGbq 04/01/2025 Schelstraete, Sigurd MaxLinear

TGbq 04/01/2025 Patil, Abhishek Qualcomm Incorporated

TGbq 04/01/2025 Singh, Aditi Charter Communications

TGbq 04/01/2025 Park, Eunsung LG ELECTRONICS

TGbq 04/01/2025 Nayak, Peshal Samsung Research America

TGbq 04/01/2025 SUH, JUNG HOON Huawei Technologies Co., Ltd

TGbq 04/01/2025 McCann, Stephen Huawei Technologies Co., Ltd

TGbq 04/01/2025 Lin, Wei Xiaomi Communications Co., Ltd.

TGbq 04/01/2025 Li, Yapu Guangdong OPPO Mobile Telecommunications Corp....

TGbq 04/01/2025 Sun, Bo Sanechips

TGbq 04/01/2025 Li, Yanchun Huawei Technologies Co., Ltd

TGbq 04/01/2025 Koo, Jonghoe SAMSUNG ELECTRONICS

TGbq 04/01/2025 Zhong, Ke Ruijie Networks Co.,Ltd.

TGbq 04/01/2025 Choi, Jinsoo LG ELECTRONICS

TGbq 04/01/2025 Hussein, Abdalla Huawei Technologies Co., Ltd

TGbq 04/01/2025 Kim, Sang Gook LG ELECTRONICS

TGbq 04/01/2025 Gao, Ning Guangdong OPPO Mobile Telecommunications Corp....

TGbq 04/01/2025 Cha, Dongju LG ELECTRONICS

TGbq 04/01/2025 Hasabelnaby, Mahmoud Huawei Technologies Canada; Huawei Technologie...

TGbq 04/01/2025 Choi, JinHo SAMSUNG ELECTRONICS

TGbq 04/01/2025 Yano, Kazuto Advanced Telecommunications Research Institute...

TGbq 04/01/2025 Chen, Cheng Intel

TGbq 04/01/2025 Chen, Junbin TP-Link Systems Inc.

TGbq 04/01/2025 Kain, Carl Noblis, Inc.; USDoT

TGbq 04/01/2025 Chen, Wei-Han MediaTek Inc.

TGbq 04/01/2025 Cho, Hangyu LG ELECTRONICS

TGbq 04/01/2025 HUANG, CHIHAN MediaTek Inc.

TGbq 04/01/2025 CHENG, yajun Xiaomi Communications Co., Ltd.

TGbq 04/01/2025 Xiao, Tong Xiaomi Communications Co., Ltd.

TGbq 04/01/2025 Byeon, Seongho SAMSUNG ELECTRONICS

TGbq 04/01/2025 Au, Kwok Shum Huawei Technologies Co., Ltd

TGbq 04/01/2025 Chen, Xu Xiaomi Communications Co., Ltd.

TGbq 04/01/2025 Wei, Dong Guangdong OPPO Mobile Telecommunications Corp....

TGbq 04/01/2025 Xin, Yan Huawei Technologies Co., Ltd

TGbq 04/01/2025 Fan, Shuang Sanechips Technology Co., Ltd.

TGbq 04/01/2025 feng, Shuling MediaTek Inc.

TGbq 04/01/2025 Wee, Gaius Panasonic Holdings Corporation

TGbq 04/01/2025 Klein, Arik Huawei Technologies Co., Ltd

TGbq 04/01/2025 Kim, Youhan Qualcomm Technologies, Inc.

TGbq 04/01/2025 Zheng, Xiayu NXP Semiconductors

TGbq 04/01/2025 Deshmukh, Mrugen Ofinno

TGbq 04/01/2025 Fletcher, Paul Samsung Cambridge Solution Center

TGbq 04/01/2025 Cui, Yaoshen TP-Link Systems Inc.

TGbq 04/01/2025 Chou, Tzu-Hsuan Qualcomm Incorporated

TGbq 04/01/2025 Yamada, Ryota SHARP CORPORATION

TGbq 04/01/2025 Zhang, Jiayi Ofinno

# Tuesday, April 8 2025, 09:30am - 11:00am (EDT)

TGbq Chari: Edward Au (Huawei)

TGbq Vice-Chair: Rui Cao (NXP)

TGbq Vice-Chair: Abhishek Patil (Qualcomm)

TGbq Vice-Chair: Sang Kim (LG Electronics)

TGbq secretary: Jonghoe Koo (Samsung Electronics)

TGbq Editor: Cheng Chen (Intel)

**Opening formalities**

1. The IEEE 802.11 TGbq meeting was called to order at 09:30 EDT by the Chair.
2. Chair introduced the TGbq leadership members/
3. Chair reminded the meeting registration.
4. Chair presented the TGbq meeting agenda [IEEE 802.11-25/0514r3](https://mentor.ieee.org/802.11/dcn/25/11-25-0514-03-00bq-april-2025-teleconference-agenda.xlsx) and reviewed the agenda items.
5. Chair reviewed the meeting agenda and the agenda was unanimously approved.

**[Administrative items]**

1. Chair presented TGbq supplementary materials [IEEE 802.11-25/0191r1](https://mentor.ieee.org/802.11/dcn/25/11-25-0191-01-00bq-tgbq-supplementary-materials-for-meetings.pptx) slides.
2. Chair reviewed IEEE 802 required notices (emphasizing to ensure to announce name and affiliation at the first time to speak, anti-trust compliance, IEEE 802 WG rules and policies, etc.), IEEE SA meeting guidelines, IEEE Codes of Ethics and Conduct, IEEE individual process, and IEEE-SA standards activities with the fair and equitable consideration.
3. Chair reminded all to record their attendance in IMAT and other meeting reminders.

**Contributions**

**Presentation of** [**IEEE 11-25/0300r1**](https://mentor.ieee.org/802.11/dcn/25/11-25-0300-01-00bq-reachability-of-mmwave-link-follow-up.pptx)**, Reachability of mmWave Link- Follow Up (Insik Jung, LG Electronics)**

1. Insik presented the contribution [IEEE 11-25/0300r1](https://mentor.ieee.org/802.11/dcn/25/11-25-0300-01-00bq-reachability-of-mmwave-link-follow-up.pptx).
2. Q: In case of 11ay, it is assumed that STA has an omnidirectional antenna and AP has a directional antenna. On the other hands, the assumption in this contribution is both STA and AP have directional antennas, resulting in longer reachability estimation than 11ay case.
3. A: Yes, we need to find out the best beam for the IMMW. Further check is required that Rx device uses an omnidirectional in case of 11ay.
4. Q: For the 11ay case, the TX is directional and the Rx is omnidirectional, so the Rx simply needs to receive and then find the best beam. The proposal seems to be more complex than 11ay.
5. A: Agreed.
6. Q: Do the AP and STA agree on the time when the beam training procedure is performed on mmWave link and does the AP expect the time when the STA responds with feedback on a sub-7GHz link? What is the timeout used by the AP to determine that it has not received feedback from the STA?
7. A: The AP allocates a service period for STAs. There might be a failure for the STA to respond with feedback when mmWave link is busy.
8. Q: In the beam training procedure, is it one AP to one STA, or one AP to multiple STAs simultaneously?
9. A: Both are possible.
10. Q: Is the assumption in Slide 8 for the one-to-one case? If the beam training time is common to multiple STAs, then there will be a collision between responses from multiple STAs. However, if it is scheduled as a dedicated manner, the AP must have prior information about those multiple STAs that are scheduled.
11. A: In Slide 8, for the case where STA(s) in dedicated, in order to distinguish the case that STA cannot respond due to busy channel/OBSS interference and the case of unreachability, the AP sends a channel status, i.e., ‘medium Busy’ status in a response frame to STAs.
12. Q: Do both STA and AP perform sector sweep?
13. A: Yes, we need further discussion.
14. Q: In the association request, there is information about how many links the STA wants to setup. In the PAR, single-user case is in our scope, i.e., one AP to one STA case. In Slide 8, how the AP know which sector the STA respond? If the AP does not know which sector to use, how can it receive feedback from the STA?
15. A: Yes, we need further discussion.
16. Q: The STA decides whether to associate an AP or not. Do we need to consider that the STA determines its reachability to an AP on mmWave link rather than the AP decides the reachability of STAs as proposed in this contribution?
17. A: Since the AP schedules the IMMW transmission, the AP would be better to decide the reachability. In addition, only the AP measures the RSSI.
18. Q: However, does a STA decide whether to associate an AP? It’s interesting point to see the reachability from the AP’s point of view.
19. A: Let’s have more discussion offline.
20. Q: Is the assumption that sub-7GHz link is always stable? Shouldn’t we consider the case where the mmWave link is reachable but sub-7GHz is not due to multi-path effect? I’ve seen this a lot in the test environments.
21. A: If sub-7GHz is not stable, STA has not associated with that AP, so this is not case that we are considering.
22. Q: In practice, reachability estimation will likely be performed during the initial stage of determining whether to add a link or associate with an AP, not during the time when the connection is stable. Reachability estimation by this proposal may be considered as an optional operation.
23. A: Let’s have more discussion offline.

**Presentation of** [**IEEE 11-25/0433r2**](https://mentor.ieee.org/802.11/dcn/25/11-25-0433-02-00bq-channel-access-for-immw.pptx)**, Channel Access for IMMW (Dongju Cha, LG Electronics)**

1. Dongju presented the contribution [IEEE 11-25/0433r2](https://mentor.ieee.org/802.11/dcn/25/11-25-0433-02-00bq-channel-access-for-immw.pptx).
2. Q: How does the STA with directional antenna operate the EDCA mechanism? Let’s have an offline discussion.
3. Q: I have a question on EDCA operation in the non-dedicated SP. If the dedicated SP is an individual TWT and the AP schedules non-overlapped TWT SPs as described in Slide 7, we may run into a scalability issue, and hence it may be difficult to support multiple mmWave STAs at the same time.
4. A: Individual TWT can be used to support periodic traffic, but we can still use methods, e.g., Broadcast TWT or SP shared to multiple STAs, other than a dedicated SP for aperiodic traffic.
5. Q: Since TGbq designs non-standalone mmWave solution so that assistance can be provided through sub-7GHz link, e.g., triggering by sub-7GHz, it seems that mmWave can be sufficiently supported by dedicated SP. What is the motivation for introducing non-dedicated SP? It also seems that using non-dedicated SP would not be beneficial from a power-saving perspective.
6. A: Since the discussion in TGbq is in its early stage, we intent to keep all possible options for discussion.

**Closing formalities**

1. Chair encouraged follow-up discussions on today’s presentations to be conducted either individually or through the email reflector.
2. Chair called for one more contribution for the next call and asked the participants to consider a best practice in uploading their contributions one day before the presentation.

**Adjourn**

1. Chair announced that the call was adjourned at 10:43am EDT.

**List of Attendees**

|  |  |  |  |
| --- | --- | --- | --- |
| TGbq | 04/01/2025 | Au, Kwok Shum | Huawei Technologies Canada; Huawei Technologies Co., Ltd |
| TGbq | 04/01/2025 | Byeon, Seongho | SAMSUNG ELECTRONICS |
| TGbq | 04/01/2025 | Cha, Dongju | LG ELECTRONICS |
| TGbq | 04/01/2025 | Chen, Cheng | Intel Corporation |
| TGbq | 04/01/2025 | Chen, Junbin | TP-Link Systems Inc. |
| TGbq | 04/01/2025 | Chen, Wei-Han | MediaTek Inc. |
| TGbq | 04/01/2025 | Chen, Xu | Xiaomi Communications Co., Ltd. |
| TGbq | 04/01/2025 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbq | 04/01/2025 | Cho, Hangyu | LG ELECTRONICS |
| TGbq | 04/01/2025 | Choi, JinHo | SAMSUNG ELECTRONICS |
| TGbq | 04/01/2025 | Choi, Jinsoo | LG ELECTRONICS |
| TGbq | 04/01/2025 | Deshmukh, Mrugen | Ofinno |
| TGbq | 04/01/2025 | Di Taranto, Rocco | Ericsson AB |
| TGbq | 04/01/2025 | Erkucuk, Serhat | Ofinno |
| TGbq | 04/01/2025 | Fan, Shuang | Sanechips Technology Co., Ltd. |
| TGbq | 04/01/2025 | feng, Shuling | Mediatek Inc |
| TGbq | 04/01/2025 | Fletcher, Paul | Samsung Cambridge Solution Centre |
| TGbq | 04/01/2025 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbq | 04/01/2025 | Gu, Xiangxin | Spreadtrum Communications (Shanghai) Co., Ltd. |
| TGbq | 04/01/2025 | Gupta, Binita | Cisco Systems, Inc. |
| TGbq | 04/01/2025 | HUANG, CHIHAN | MediaTek Inc. |
| TGbq | 04/01/2025 | Jang, Insun | LG ELECTRONICS |
| TGbq | 04/01/2025 | Kain, Carl | Noblis, Inc.; USDoT |
| TGbq | 04/01/2025 | Kim, Jeongki | Ofinno |
| TGbq | 04/01/2025 | Koo, Jonghoe | SAMSUNG ELECTRONICS |
| TGbq | 04/01/2025 | Li, Haozheng | TP-Link System  Inc |
| TGbq | 04/01/2025 | Li, Weiyi | Spreadtrum Communications (Shanghai) Co., Ltd.; Unisoc (Shanghai) Technologies Co., Ltd. |
| TGbq | 04/01/2025 | Li, Xin | Huawei Technologies Co., Ltd |
| TGbq | 04/01/2025 | Lin, Wei | Xiaomi Communications Co., Ltd. |
| TGbq | 04/01/2025 | LIU, QINGLAI | Panasonic Holdings Corporation |
| TGbq | 04/01/2025 | Motozuka, Hiroyuki | Panasonic Holdings Corporation |
| TGbq | 04/01/2025 | Nayak, Peshal | Samsung Research America |
| TGbq | 04/01/2025 | Pan, Ju Yan | Huawei Technologies Co., Ltd |
| TGbq | 04/01/2025 | Park, Eunsung | LG ELECTRONICS |
| TGbq | 04/01/2025 | Patil, Abhishek | Qualcomm Incorporated |
| TGbq | 04/01/2025 | Perez, Javier | Ofinno |
| TGbq | 04/01/2025 | Pettersson, Charlie | Ericsson AB |
| TGbq | 04/01/2025 | Quan, Yingqiao | Spreadtrum Communications (Shanghai) Co., Ltd.; Unisoc (Shanghai) Technologies Co., Ltd. |
| TGbq | 04/01/2025 | Sadiq, Bilal | Samsung Electronics Co., Ltd. |
| TGbq | 04/01/2025 | Schelstraete, Sigurd | MaxLinear |
| TGbq | 04/01/2025 | Singh, Aditi | Charter Communications |
| TGbq | 04/01/2025 | Wang, Zisheng | ZTE Corporation |
| TGbq | 04/01/2025 | Wee, Gaius | Panasonic Holdings Corporation |
| TGbq | 04/01/2025 | Wei, Dong | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbq | 04/01/2025 | Wilhelmsson, Leif | Ericsson AB |
| TGbq | 04/01/2025 | Xiao, Tong | Xiaomi Communications Co., Ltd. |
| TGbq | 04/01/2025 | Yamada, Ryota | SHARP CORPORATION |
| TGbq | 04/01/2025 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbq | 04/01/2025 | Zhang, Jiayi | Ofinno |
| TGbq | 04/01/2025 | Zheng, Xiayu | NXP Semiconductors |
| TGbq | 04/01/2025 | Zhou, Lei | H3C Technologies Co., Limited |