IEEE P802.11  
Wireless LANs

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| TGbe May to July 2021 teleconference minutes | | | | | |
| Date: 2021-06-04 | | | | | |
| Author(s): | | | | | |
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| Matthew Fischer | Broadcom Inc |  |  |  |

Abstract

This document contains the meeting minutes for May to July 2021 TGbe teleconferences.

Revisions:

* Rev 0: First revision of the document. Contains references and minutes for meetings held 20th of May to 3rd of June.
* Rev1: Added participant list to the joint call June 2nd. Added references to calls the 3rd and 7th. Added minutes for the 9th of June call.
* Rev2: Added participant list to the joint call June 9th. Added final results for motion 207 and 208.
* Rev3: Added minutes and references for meetings June 10th through June 30th. Dennis was absent at the meeting June 23, Matthew took the minutes instead of Dennis.
* Rev4: Added minutes for meeting July 7th.
* Rev5: Added participation list for joint meeting June 30th. Added references to ad-hoc meeting July 8th. Updated all references.

# 5th Conf. Call: May 19 (10:00–12:00 ET)

Split PHY and MAC.

* PHY: cancelled.
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# 6th Conf. Call: May 20 (10:00–12:00 ET)

Split PHY and MAC.

* PHY: cancelled.
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# 7th Conf. Call: May 24 (19:00–21:00 ET)

Split PHY and MAC.

* PHY: cancelled.
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# 8th Conf. Call: May 26 (10:00–12:00 ET)

1. The Chair, Alfred Asterjadhi (Qualcomm), calls the meeting to order at 10:01 ET. The Chair notifies that the agenda is in [785r8](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-08-00be-may-july-tgbe-teleconference-agenda.docx).
2. IEEE 802 and 802.11 IPR policy and procedure
   1. Patent Policy: Ways to inform IEEE:
      * Cause an LOA to be submitted to the IEEE-SA ([patcom@ieee.org](mailto:patcom@ieee.org)); or
      * Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
      * Speak up now and respond to this Call for Potentially Essential Patents. **Nobody speaks/writes up**.

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

* 1. The Chair goes through: Copyright Policy: Participants are advised that
     + IEEE SA’s copyright policy is described in [Clause 7](https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7) of the IEEE SA Standards Board Bylaws and [Clause 6.1](https://standards.ieee.org/about/policies/opman/sect6.html) of the IEEE SA Standards Board Operations Manual;
     + Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy
  2. The Chair goes through: Patent, Participation, Copyright and policy related subclause: Please refer to *Patent And Procedures* in [785r8](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-08-00be-may-july-tgbe-teleconference-agenda.docx).

1. Attendance reminder.

* Participation slide: <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>
* Please record your attendance during the conference call by using the IMAT system:
  + login to [imat](https://imat.ieee.org/attendance), 2) select “802.11 Telecons (<Month>)” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click “TGbe <MAC/PHY/Joint> conference call that you are attending.
* If you are unable to record the attendance via [IMAT](https://imat.ieee.org/attendance) then please send an e-mail to Dennis Sundman ([dennis.sundman@ericsson.com](mailto:dennis.sundman@ericsson.com)) and Alfred Asterjadhi ([aasterja@qti.qualcomm.com](mailto:aasterja@qti.qualcomm.com))
* Please ensure that the following information is listed correctly when joining the call:
  + "[voter status] First Name Last Name (Affiliation)"
  + Aboulmagd, Osama Huawei Technologies Co., Ltd
  + Abushattal, Abdelrahman Istanbul Medipol university ;Vestel
  + Akhmetov, Dmitry Intel Corporation
  + Ansley, Carol Cox Communications Inc.
  + Asterjadhi, Alfred Qualcomm Incorporated
  + Au, Kwok Shum Huawei Technologies Co., Ltd
  + Baek, SunHee LG ELECTRONICS
  + Bahn, Christy IEEE STAFF
  + Bankov, Dmitry IITP RAS
  + baron, stephane Canon Research Centre France
  + Barr, David MaxLinear
  + Bredewoud, Albert Broadcom Corporation
  + Cao, Rui NXP Semiconductors
  + Cariou, Laurent Intel Corporation
  + Carney, William Sony Group Corporation
  + Cheng, Paul MediaTek Inc.
  + Chitrakar, Rojan Panasonic Asia Pacific Pte Ltd.
  + Chu, Liwen NXP Semiconductors
  + CHUN, JINYOUNG LG ELECTRONICS
  + Das, Subir Perspecta Labs Inc
  + de Vegt, Rolf Qualcomm Incorporated
  + Dong, Xiandong Xiaomi Inc.
  + Erceg, Vinko Broadcom Corporation
  + Fang, Yonggang Mediatek
  + feng, Shuling MediaTek Inc.
  + Fischer, Matthew Broadcom Corporation
  + Ghaderipoor, Alireza MediaTek Inc.
  + Gu, Xiangxin Unisoc
  + Haider, Muhammad Kumail Facebook
  + Han, Jonghun SAMSUNG
  + Han, Zhiqiang ZTE Corporation
  + Handte, Thomas Sony Corporation
  + Hervieu, Lili Cable Television Laboratories Inc. (CableLabs)
  + Ho, Duncan Qualcomm Incorporated
  + Hu, Shengquan MediaTek Inc.
  + Huang, Po-Kai Intel Corporation
  + Jamalabdollahi, Mohsen Cisco Systems, Inc.
  + Kakani, Naveen Qualcomm Incorporated
  + kamath, Manoj Broadcom Corporation
  + Kamel, Mahmoud InterDigital, Inc.
  + Kandala, Srinivas SAMSUNG
  + Khorov, Evgeny IITP RAS
  + Kim, Myeong-Jin SAMSUNG
  + kim, namyeong LG ELECTRONICS
  + Kim, Sang Gook LG ELECTRONICS
  + Kim, Sanghyun WILUS Inc
  + Kim, Youhan Qualcomm Incorporated
  + Kim, Youn-Kwan Sync Techno
  + Kishida, Akira Nippon Telegraph and Telephone Corporation (NTT)
  + Klein, Arik Huawei Technologies Co., Ltd
  + Kneckt, Jarkko Apple, Inc.
  + Ko, Geonjung WILUS Inc.
  + Kwon, Young Hoon NXP Semiconductors
  + Lalam, Massinissa SAGEMCOM BROADBAND SAS
  + Lee, Wookbong SAMSUNG
  + Leng, Shiyang Samsung Research America
  + Levitsky, Ilya IITP RAS
  + Li, Jialing Qualcomm Technologies, Inc.
  + Lin, Zinan InterDigital, Inc.
  + Lopez, Miguel Ericsson AB
  + Lorgeoux, Mikael Canon Research Centre France
  + Lou, Hanqing InterDigital, Inc.
  + Lu, kaiying MediaTek Inc.
  + Lu, Liuming Guangdong OPPO Mobile Telecommunications Corp.,Ltd
  + LU, Yuxin Huawei Technologies Co., Ltd
  + Luo, Chaoming Beijing OPPO telecommunications corp., ltd.
  + Ma, Li MediaTek Inc.
  + Max, Sebastian Ericsson AB
  + McCann, Stephen Huawei Technologies Co., Ltd
  + Mehrnoush, Morteza Facebook
  + Memisoglu, Ebubekir Istanbul Medipol University; Vestel
  + Montemurro, Michael Huawei Technologies Co., Ltd
  + Montreuil, Leo Broadcom Corporation
  + NANDAGOPALAN, SAI SHANKAR Infineon Technologies
  + Nezou, Patrice Canon Research Centre France
  + Ng, Boon Loong Samsung Research America
  + noh, yujin Senscomm
  + Ouchi, Masatomo Canon
  + Ozbakis, Basak VESTEL
  + Palayur, Saju MaxLinear Inc.
  + Park, Eunsung LG ELECTRONICS
  + Park, Minyoung Intel Corporation
  + Patil, Abhishek Qualcomm Incorporated
  + Patwardhan, Gaurav Hewlett Packard Enterprise
  + Petrick, Albert InterDigital, Inc.
  + Pushkarna, Rajat Panasonic Asia Pacific Pte Ltd.
  + Ratnam, Vishnu Samsung Research America
  + Redlich, Oded Huawei Technologies Co., Ltd
  + Rosdahl, Jon Qualcomm Technologies, Inc.
  + Salman, Hanadi Istanbul Medipol University; VESTEL
  + Schelstraete, Sigurd MaxLinear
  + Sethi, Ankit NXP Semiconductors
  + Sevin, Julien Canon Research Centre France
  + Shafin, Rubayet Samsung Research America
  + Shellhammer, Stephen Qualcomm Incorporated
  + Shilo, Shimi Huawei Technologies Co., Ltd
  + Solaija, Muhammad Sohaib Istanbul Medipol University; Vestel
  + Stanley, Dorothy Hewlett Packard Enterprise
  + SUH, JUNG HOON Huawei Technologies Co., Ltd
  + Sun, Bo ZTE Corporation
  + Sun, Li-Hsiang Sony Corporation
  + Sun, Yanjun Qualcomm Incorporated
  + Tanaka, Yusuke Sony Group Corporation
  + Thompson, Tom IEEE STAFF
  + Tian, Bin Qualcomm Incorporated
  + Torab Jahromi, Payam Facebook
  + Tsodik, Genadiy Huawei Technologies Co., Ltd
  + Urabe, Yoshio Panasonic Corporation
  + Varshney, Prabodh Nokia
  + VIGER, Pascal Canon Research Centre France
  + Wang, Lei Futurewei Technologies
  + Wei, Dong NXP Semiconductors
  + Wentink, Menzo Qualcomm Incorporated
  + Wu, Kanke Qualcomm Incorporated
  + Wu, Tianyu Apple, Inc.
  + Wullert, John Perspecta Labs
  + Xin, Yan Huawei Technologies Co., Ltd
  + Yang, Jay Nokia
  + Yang, Steve TS MediaTek Inc.
  + Yano, Kazuto Advanced Telecommunications Research Institute International (ATR)
  + Yee, James MediaTek Inc.
  + yi, yongjiang Futurewei Technologies
  + Yu, Jian Huawei Technologies Co., Ltd
  + Zhang, Yan NXP Semiconductors

1. Announcements:
   * TGbe D1.0 is now available in the members area
     + RTFs will be available in 1-2 weeks
   * CC36 and CC37 were initiated yesterday.
2. Agenda.
   1. Discussion:

C: Please defer 409 from the ageand.

A: Ok.

C: What is the guidelines about?

A: It’s about how to deal with the upcoming meetings.

* 1. Agenda approved with unanimous consent.

1. Guidelines Update: [984r6](https://mentor.ieee.org/802.11/dcn/20/11-20-0984-06-00be-tgbe-teleconference-guidelines.docx)
   1. Alfred goes through Section 8 of the guidelines “Guidelines for WG CC CRs post TGbe1.0”.
   2. Discussion:

C: On point 3. What will be the scope of PDTs?

A: PDTs will focus on bugfixes.

C: At some point documents will be dropped since we cannot keep discussing the same comments.

C: How are you going to keep track of similar comments in CC34 and CC36?

A: The document title will not be tagged, but when we prepare the motion, we list the CIDs with identifiers.

C: I would like to see some time limitation on CR discussions. I would like to avoid the situation where we have to reject 40% of the comments.

C: Point 5. If I resubmit some comments that are not resolved in CC34, if the comments are approved in 34, will those comments be not resolved again for CC36.

A: We instruct the editor that the comment is already resolved.

C: How do we declare success on CC36?

C: We need to check if there is any leftover motions for R1 in the SFD with no text (for D1.0).

1. Technical Submissions**: PDTs**
   1. [299r6](https://mentor.ieee.org/802.11/dcn/21/11-21-0299-06-00be-crs-for-d0-3-eht-sta-features-cids.docx) CRs for D0.3 EHT STA features CIDs Rojan Chitrakar [SP-10’]

Rojan goes through the document with focus on the additional changes compared to previous revision.

Discussion:

C: In RevME, the current discussion is to try to clean up optional and mandatory bullets from clause 4. The reason being that these comments end up being very detailed but the idea with clause 4 is high level description.

SP299r7: Do you agree to accept the changes in 11/21-299r7 identified by the CIDs below?

* + - 1106, 1719, 2234, 2243,2260, 2559, 2560

Discussion: No discussion.

Result: Supported with no objection from the group.

* 1. [455r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0455-05-00be-cr-for-35-2-1-2-preamble-puncturing.docx) CR for 35.2.1.2 preamble puncturing Yanjun Sun [30’]

Yanjun goes through the document. Some live updates in the document.

1. Technical Submissions:
   1. [601r4](https://mentor.ieee.org/802.11/dcn/21/11-21-0601-04-00be-discussion-on-spatial-reuse-issues.pptx) Discussion on Spatial Reuse Issues Zinan Lin [30’]

Summary: The authors discuss how to handle the power normalization under spatial reuse and channel puncturing.

Discussion:  
C: Since the spec is based in terms of 20 MHz, I think we can describe in terms of 20 still and scale accordingly. The TX “spectrum” should be flat anyway. Then we don’t need to consider all these puncturing combination.

Some other discussion.

1. AoB:

* PHY call not cancelled.
* No meeting on Monday due to holiday.

1. Adjourn

# 9th Conf. Call: May 27 (10:00–12:00 ET)

Split PHY and MAC.

* PHY: <https://mentor.ieee.org/802.11/dcn/21/11-21-0906-03-00be-minutes-of-802-11be-phy-ad-hoc-may-to-july-2021.docx>
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# 10th Conf. Call: June 02 (10:00–12:00 ET)

1. The Chair, Alfred Asterjadhi (Qualcomm), calls the meeting to order at 10:01 ET. The Chair notifies that the agenda is in [785r11](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-11-00be-may-july-tgbe-teleconference-agenda.docx).
2. IEEE 802 and 802.11 IPR policy and procedure
   1. Patent Policy: Ways to inform IEEE:
      * Cause an LOA to be submitted to the IEEE-SA ([patcom@ieee.org](mailto:patcom@ieee.org)); or
      * Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
      * Speak up now and respond to this Call for Potentially Essential Patents. **Nobody speaks/writes up**.

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

* 1. The Chair goes through: Copyright Policy: Participants are advised that
     + IEEE SA’s copyright policy is described in [Clause 7](https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7) of the IEEE SA Standards Board Bylaws and [Clause 6.1](https://standards.ieee.org/about/policies/opman/sect6.html) of the IEEE SA Standards Board Operations Manual;
     + Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy
  2. The Chair goes through: Patent, Participation, Copyright and policy related subclause: Please refer to *Patent And Procedures* in [785r11](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-11-00be-may-july-tgbe-teleconference-agenda.docx).

1. Attendance reminder.

* Participation slide: <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>
* Please record your attendance during the conference call by using the IMAT system:
  + login to [imat](https://imat.ieee.org/attendance), 2) select “802.11 Telecons (<Month>)” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click “TGbe <MAC/PHY/Joint> conference call that you are attending.
* If you are unable to record the attendance via [IMAT](https://imat.ieee.org/attendance) then please send an e-mail to Dennis Sundman ([dennis.sundman@ericsson.com](mailto:dennis.sundman@ericsson.com)) and Alfred Asterjadhi ([aasterja@qti.qualcomm.com](mailto:aasterja@qti.qualcomm.com))
* Please ensure that the following information is listed correctly when joining the call: "[voter status] First Name Last Name (Affiliation)"
  + Carney, William Sony Group Corporation
  + 

1. Announcements:
   1. PHY conf call tomorrow is cancelled.
2. Agenda
   1. Comments:

C: 601 and 673 have straw polls

C: 1903 is r2

* 1. Agenda approved with unanimous consent.

1. Technical Submissions**: PDTs**
   1. [**455r6**](https://mentor.ieee.org/802.11/dcn/21/11-21-0455-06-00be-cr-for-35-2-1-2-preamble-puncturing.docx) **CR for 35.2.1.2 preamble puncturing Yanjun Sun [SP-10’]**

Yanjun goes through the document. Some live updates during the presentation.

SP: Do you agree to accept the changes in XXX identified by the CIDs below?

* + - 1086, 1667, 1936, 2147, 2148, 2180, 3120, 3151, 2541
    - 2 comments from in [21/0218r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0218-00-00be-review-of-p802-11be-d0-3-for-cc34.docx) on subclause 35.2.1.2

Result: Supported with no objection from the group.

1. Technical Submissions:
   1. [**601r5**](https://mentor.ieee.org/802.11/dcn/21/11-21-0601-05-00be-discussion-on-spatial-reuse-issues.pptx) **Discussion on Spatial Reuse Issues Zinan Lin [SP-10’]**

Zinan goes through the presentation and points out problems with the power normalization in PSR (using puncturing), how to fix it and what signaling is required.

**SP1 (ran after presentation of 673)**

Do you agree that the Tx\_PWR\_PSRT setting should consider

* + - Difference between ESR1 and ESR2 and
    - Subchannel puncturing in both PSRT PPDU and PSRR PPDU?

Discussion:

C: I agree with the fundamental argument behind this SP. But I don’t know how this particular formulation will bring us forward?

A: I propose we remove the “PSRR PPDU” part of the SP.

New text:

Do you agree that the Tx\_PWR\_PSRT setting should consider

* + - Difference between ESR1 and ESR2 and
    - Subchannel puncturing in PSRT PPDU?

Result: Y/N/A/No-answer: 38/9/64/68.

**SP2 (ran after presentation 673)**

Do you agree to include the following factors when computing ?

* + - Min(ESR1, ESR2)
    - The number of unpunctured 20MHz subchannels in PSRT PPDU

Discussion:

C: Do you see the spec text including these aspects?

A: I believe this should be in the text.

Result: Y/N/A/No-answer: 8/18/76/75.

**SP3 (ran after presentation 673)**

Do you agree to include the following factors when computing ?

* + - OBSS STA measured power level over the overlapping channels between the STA operating channel and PSRR PPDU
    - The number of unpunctured 20MHz subchannels in the overlapping channels between the OBSS STA operating channel and PSRR PPDU

Result: Y/N/A/No-answer: 7/24/63/81

* 1. [**673r1**](https://mentor.ieee.org/802.11/dcn/21/11-21-0673-01-00be-psr-based-sr-discussion-follow-up.pptx) **PSR-based SR Discussion Follow-up Ross Jian Yu [30’]**

Similar to previous contribution, this highlights some problems with the power normalization in PSR and how to solve it.

Some intense discussion regarding various aspects of the solutions.

Straw polls deferred.

* 1. [**428r1**](https://mentor.ieee.org/802.11/dcn/21/11-21-0428-01-00be-ra-ru-indication-in-trigger-frame.pptx) **RA-RU Indication in Trigger frame Geonjung Ko [SP-10’]**

Straw polls updated after discussion with members.

SP3: Do you agree to define an RA-RU indication to solicit EHT TB PPDUs in R1?

Discussion:  
C: I think it makes sense to move this to R2.

Result: Y/N/A: 31/43/42

SP5: Do you agree that an AP shall not include the User Info field with the AID12 subfield set to 0 or 2045 in the Trigger frame soliciting EHT TB PPDUs in R1?

Discussion: Yes.

Result: Y/N/A/No-answer: 32/34/36/69.

* 1. [400r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0400-01-00be-enhanced-uora.pptx) Enhanced UORA Yanyi Ding [30’]
  2. [1903r1](https://mentor.ieee.org/802.11/dcn/20/11-20-1903-01-00be-random-access-for-11be.pptx) Random Access for 11be Pascal Viger [30’]

1. AoB: None.
2. Adjourn at 11:59 ET.

# 11th Conf. Call: June 03 (10:00–12:00 ET)

Split PHY and MAC.

* PHY: cancelled.
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# 12th Conf. Call: June 07 (19:00–21:00 ET)

Split PHY and MAC.

* PHY: <https://mentor.ieee.org/802.11/dcn/21/11-21-0906-03-00be-minutes-of-802-11be-phy-ad-hoc-may-to-july-2021.docx>
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# 13th Conf. Call: June 09 (10:00–12:00 ET)

1. The Chair, Alfred Asterjadhi (Qualcomm), calls the meeting to order at 10:01 ET. The Chair notifies that the agenda is in [785r15](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-15-00be-may-july-tgbe-teleconference-agenda.docx).
2. IEEE 802 and 802.11 IPR policy and procedure
   1. Patent Policy: Ways to inform IEEE:
      * Cause an LOA to be submitted to the IEEE-SA ([patcom@ieee.org](mailto:patcom@ieee.org)); or
      * Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
      * Speak up now and respond to this Call for Potentially Essential Patents. **Nobody speaks/writes up**.

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

* 1. The Chair goes through: Copyright Policy: Participants are advised that
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     + Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy
  2. The Chair goes through: Patent, Participation, Copyright and policy related subclause: Please refer to *Patent And Procedures* in [785r15](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-15-00be-may-july-tgbe-teleconference-agenda.docx).

1. Attendance reminder.

* Participation slide: <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>
* Please record your attendance during the conference call by using the IMAT system:
  + login to [imat](https://imat.ieee.org/attendance), 2) select “802.11 Telecons (<Month>)” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click “TGbe <MAC/PHY/Joint> conference call that you are attending.
* If you are unable to record the attendance via [IMAT](https://imat.ieee.org/attendance) then please send an e-mail to Dennis Sundman ([dennis.sundman@ericsson.com](mailto:dennis.sundman@ericsson.com)) and Alfred Asterjadhi ([aasterja@qti.qualcomm.com](mailto:aasterja@qti.qualcomm.com))
* Please ensure that the following information is listed correctly when joining the call: "[voter status] First Name Last Name (Affiliation)"
  + Patil, Abhishek (Qualcomm)
  + Abdelaal, Rana Broadcom Corporation
  + Aboulmagd, Osama Huawei Technologies Co., Ltd
  + Abushattal, Abdelrahman Istanbul Medipol university ;Vestel
  + Adhikari, Shubhodeep Broadcom Corporation
  + Ajami, Abdel Karim Qualcomm Incorporated
  + Akhmetov, Dmitry Intel Corporation
  + An, Song-Haur INDEPENDENT
  + Anwyl, Gary MediaTek Inc.
  + Asterjadhi, Alfred Qualcomm Incorporated
  + Au, Kwok Shum Huawei Technologies Co., Ltd
  + Aygul, Mehmet Vestel
  + B, Hari Ram NXP Semiconductors
  + Banerjea, Raja Qualcomm Incorporated
  + Bankov, Dmitry IITP RAS
  + Barr, David MaxLinear
  + Ben Arie, Yaron toga networks(a huawei company)
  + Bhandaru, Nehru Broadcom Corporation
  + Boldy, David Broadcom Corporation
  + Cao, Rui NXP Semiconductors
  + Carney, William Sony Group Corporation
  + CHAN, YEE Facebook
  + Cheng, Paul MediaTek Inc.
  + CHERIAN, GEORGE Qualcomm Incorporated
  + Chitrakar, Rojan Panasonic Asia Pacific Pte Ltd.
  + Choi, Jinsoo LG ELECTRONICS
  + Choo, Seungho Senscomm Semiconductor Co., Ltd.
  + Chu, Liwen NXP Semiconductors
  + CHUN, JINYOUNG LG ELECTRONICS
  + Chung, Chulho SAMSUNG
  + Coffey, John Realtek Semiconductor Corp.
  + Das, Subir Perspecta Labs Inc
  + Derham, Thomas Broadcom Corporation
  + de Vegt, Rolf Qualcomm Incorporated
  + Dong, Xiandong Xiaomi Inc.
  + Du, Zhenguo Huawei Technologies Co., Ltd
  + Eitan, Alecsander Qualcomm Incorporated
  + Erceg, Vinko Broadcom Corporation
  + Fang, Yonggang Mediatek
  + feng, Shuling MediaTek Inc.
  + Fischer, Matthew Broadcom Corporation
  + Ghaderipoor, Alireza MediaTek Inc.
  + Ghosh, Chittabrata Facebook, Inc.
  + Grandhe, Niranjan NXP Semiconductors
  + Gu, Xiangxin Unisoc
  + Haider, Muhammad Kumail Facebook
  + Han, Jonghun SAMSUNG
  + Han, Zhiqiang ZTE Corporation
  + Handte, Thomas Sony Corporation
  + Hart, Brian Cisco Systems, Inc.
  + Hervieu, Lili Cable Television Laboratories Inc. (CableLabs)
  + Ho, Duncan Qualcomm Incorporated
  + Hsieh, Hung-Tao MediaTek Inc.
  + Hsu, Chien-Fang MediaTek Inc.
  + Hu, Shengquan MediaTek Inc.
  + Huang, Lei Guangdong OPPO Mobile Telecommunications Corp.,Ltd
  + Huang, Po-Kai Intel Corporation
  + Ibrahim, Ahmed Samsung Research America
  + Jamalabdollahi, Mohsen Cisco Systems, Inc.
  + Jang, Insun LG ELECTRONICS
  + Ji, Chenhe Huawei Technologies Co., Ltd
  + Joh, Hanjin KT Corp.
  + Kain, Carl USDoT; Noblis, Inc.
  + Kakani, Naveen Qualcomm Incorporated
  + kamath, Manoj Broadcom Corporation
  + Kamel, Mahmoud InterDigital, Inc.
  + Kandala, Srinivas SAMSUNG
  + Khorov, Evgeny IITP RAS
  + Kim, Myeong-Jin SAMSUNG
  + kim, namyeong LG ELECTRONICS
  + Kim, Sang Gook LG ELECTRONICS
  + Kim, Sanghyun WILUS Inc
  + Kim, Youhan Qualcomm Incorporated
  + Kishida, Akira Nippon Telegraph and Telephone Corporation (NTT)
  + Klein, Arik Huawei Technologies Co., Ltd
  + Ko, Geonjung WILUS Inc.
  + Koundourakis, Michail Samsung Cambridge Solution Centre
  + Kwon, Young Hoon NXP Semiconductors
  + Lansford, James Qualcomm Incorporated
  + Leng, Shiyang Samsung Research America
  + Levitsky, Ilya IITP RAS
  + Levy, Joseph InterDigital, Inc.
  + Li, Jialing Qualcomm Technologies, Inc.
  + Li, Jianhui Huawei Technologies Co., Ltd
  + Li, Yiqing Huawei Technologies Co., Ltd
  + Lim, Dong Guk LG ELECTRONICS
  + Lin, Zinan InterDigital, Inc.
  + LIU, CHENCHEN Huawei Technologies Co., Ltd
  + Liu, Yong Apple, Inc.
  + Lou, Hanqing InterDigital, Inc.
  + Lu, kaiying MediaTek Inc.
  + Lu, Liuming Guangdong OPPO Mobile Telecommunications Corp.,Ltd
  + LU, Yuxin Huawei Technologies Co., Ltd
  + Luo, Chaoming Beijing OPPO telecommunications corp., ltd.
  + Ma, Li MediaTek Inc.
  + McCann, Stephen Huawei Technologies Co., Ltd
  + Mehrnoush, Morteza Facebook
  + MELZER, Ezer Toga Networks, a Huawei company
  + Memisoglu, Ebubekir Istanbul Medipol University; Vestel
  + Montreuil, Leo Broadcom Corporation
  + Moran, Ashley IEEE Standards Association (IEEE-SA)
  + Naik, Gaurang Qualcomm Incorporated
  + NANDAGOPALAN, SAI SHANKAR Infineon Technologies
  + Nayak, Peshal Samsung Research America
  + Nezou, Patrice Canon Research Centre France
  + Ng, Boon Loong Samsung Research America
  + noh, yujin Senscomm
  + Omar, Hassan Huawei Technologies Co., Ltd
  + Ozbakis, Basak VESTEL
  + Palayur, Saju Maxlinear Inc
  + Pare, Thomas MediaTek Inc.
  + Park, Eunsung LG ELECTRONICS
  + Park, Minyoung Intel Corporation
  + Patwardhan, Gaurav Hewlett Packard Enterprise
  + Petrick, Albert InterDigital, Inc.
  + porat, ron Broadcom Corporation
  + Prabhakaran, Dinakar Broadcom Corporation
  + Pulikkoonattu, Rethnakaran Broadcom Corporation
  + Pushkarna, Rajat Panasonic Asia Pacific Pte Ltd.
  + Ratnam, Vishnu Samsung Research America
  + Redlich, Oded Huawei Technologies Co., Ltd
  + Regev, Dror Toga Networks (A Huawei Company)
  + REICH, MOR Togan Networks, a Huawei Company
  + Rosdahl, Jon Qualcomm Technologies, Inc.
  + Ryu, Kiseon Ofinno
  + Schelstraete, Sigurd MaxLinear
  + Sedin, Jonas Ericsson AB
  + Sethi, Ankit NXP Semiconductors
  + Shafin, Rubayet Samsung Research America
  + Shellhammer, Stephen Qualcomm Incorporated
  + Shilo, Shimi Huawei Technologies Co., Ltd
  + Solaija, Muhammad Sohaib Istanbul Medipol University; Vestel
  + SUH, JUNG HOON Huawei Technologies Co., Ltd
  + Sun, Bo ZTE Corporation
  + Sun, Yanjun Qualcomm Incorporated
  + Tian, Bin Qualcomm Incorporated
  + Torab Jahromi, Payam Facebook
  + Tsodik, Genadiy Huawei Technologies Co., Ltd
  + Tsujimaru, Yuki Canon Inc.
  + Urabe, Yoshio Panasonic Corporation
  + Van Zelst, Allert Qualcomm Incorporated
  + Varshney, Prabodh Nokia
  + Verenzuela, Daniel Sony Corporation
  + Verma, Sindhu Broadcom Corporation
  + Vermani, Sameer Qualcomm Incorporated
  + VIGER, Pascal Canon Research Centre France
  + Wang, Chao Chun MediaTek Inc.
  + Wang, Hao Tencent
  + Wang, Huizhao Quantenna Communications, Inc.
  + Wang, Lei Futurewei Technologies
  + Wang, Qi Apple, Inc.
  + Wei, Dong NXP Semiconductors
  + Wentink, Menzo Qualcomm Incorporated
  + Wu, Kanke Qualcomm Incorporated
  + Wu, Tianyu Apple, Inc.
  + Xin, Yan Huawei Technologies Co., Ltd
  + Yang, Jay Nokia
  + Yang, Steve TS MediaTek Inc.
  + Yang, Xun Huawei Technologies Co., Ltd
  + Yano, Kazuto Advanced Telecommunications Research Institute International (ATR)
  + Yee, James MediaTek Inc.
  + yi, yongjiang Futurewei Technologies
  + Yoon, Jeonghwan LG ELECTRONICS
  + Yu, Jian Huawei Technologies Co., Ltd
  + ZEGRAR, Salah Eddine Istanbul Medipol University; Vestel
  + Zhang, Yan NXP Semiconductors
  + Zhou, Yifan Huawei Technologies Co., Ltd
  + Zou, Qiyue Facebook
  + Zuo, Xin Tencent

1. Announcements.
   1. PHY tomorrow is cancelled.
   2. June 14th and June 16th no conference calls due to holidays.
   3. Expected .rtf file for draft 1.0 this Friday.
2. Agenda.
   1. Can we add 400r1 to the Technical Submissions list?
   2. Ok.
   3. Can we add 1903r2 to the queue?
   4. 1982r26 is not on the server.
   5. Ok. Latest is r25.
   6. Agenda approved with unanimous consent.
3. Motions
   1. **204. Move to approve changes to the TGbe draft as specified in the following documents:**

* MAC: [696r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0696-02-00be-pdt-mac-spec-text-for-motion-150-sp-372.docx),
* PHY: [893r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0893-01-00be-pdt-correction-to-trigger-frame-ru-allocation-table.docx)

Move: Edward Au Second: Rojan Chitrakar

Discussion: No discussion.

Result: Approved with unanimous consent.

* 1. **205. Move to approve changes to the TGbe draft as specified in the documents below and identified by the following CID tags:**
* 1439, 1501, 1502, 1509, 1510, 1511, 1512, 1514, 1757, 1772, 1797, 2211, 2142, 2434, 2435, 2718, 2740, 2741, 3141, 3142, 3143, 3145, 3205, 3323, 3399, 1507, 1703, 3398 in [514r10](https://mentor.ieee.org/802.11/dcn/21/11-21-0514-10-00be-proposed-cr-for-clause-35-3-13-6-sync-ppdu-start-time.docx) [28 CID]
* 2324, 2600, 1693, 3254, 1073, 1074, 1203, 1428, 1429, 1430, 1431, 1658, 1694, 1754, 2191, 2197, 2749, 2874, 2875, 2911, 2912, 3320, 2132, 2166 in [481r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0481-05-00be-resolutions-for-cc34-cids-for-channel-switching-quieting.docx) [24 CID]
* 1096, 2275, 1095, 2292, 2540, 1819 and the discussion items B and C in [255r6](https://mentor.ieee.org/802.11/dcn/21/11-21-0255-06-00be-cc34-resolution-for-cids-related-to-mbssid.docx) [6 CID].
* 1053, 1784, 1785, 3252, 1055, 2251, 2316, 2317, 3243, 1443, 1677, 1711, 1812, 2477, 2088, 2377, 2424, 3251, 3025, 1783, 2127, 2899, 2475, 2593, 1805 in [390r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0390-02-00be-cr-for-35-3-5.docx) [25 CID]
* 2920 in [462r9](https://mentor.ieee.org/802.11/dcn/21/11-21-0462-09-00be-pdt-mac-restricted-twt-tbds-crs-part1.docx) [1 CID]
* 2849 in [493r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0493-01-00be-cr-for-cid-2849.docx) [1 CID]

Move: Edward Au Second: Stephen McCann

Discussion: No discussion.

**Result: Approved with unanimous consent.**

* 1. **206. Move to approve changes to the TGbe draft as specified in the documents below and identified by the following CID tags:**
* 1106, 1719, 2234, 2243, 2260, 2559, 2560 in [299r7](https://mentor.ieee.org/802.11/dcn/21/11-21-0299-07-00be-crs-for-d0-3-eht-sta-features-cids.docx) [7 CID]

**Move: Edward Au Second: Rojan Chitrakar**

**Discussion: No discussion**

**Result: Approved with unanimous consent.**

* 1. **207.** **Move to add the following above Table 9-29j4 – The disregard bits are set to all 1s if dot11EHTBaseLineFeaturesImplementedOnly equals to true**

**Move: Ron Porat Second: Bin Tian**

**Discussion:**

C: These two motions (207 and 208), we weren’t able to reach harmonization.

C: I think we should run the motion and if we can’t conclude today we can discuss further.

C: This topic is about the Reserved bits. In .11be we have disregard and validation bits which are also reserved. The next Motion is about setting them to something else than all 1s. My preference is to continue the all 1s approach despite a slight PAPR advantage for other choices.

C: There was a lot of effort put into the next motion. Despite only a small gain, it comes for free so I prefer the next motion.

C: Why should we want to have them all 1s? If there is a gain, we should have it.

C: Motion 208 does provides a gain, and we did show this through several evaluations.

**Preliminary Result: Y/N/A/No-answer: 59/52/36/60 🡪 Preliminary fails**

**Result: Y/N/A: 59/51/32 🡪 Fails**. Appendix for results.

* 1. **208. Move to add the following to 9.3.1.22.1.3 (above Table 9-29j4):**

**Bits B25-B30, B32-B36 of the Special User Info field are set to ‘0 1 1 1 1 0 1 1 0 1 1’ if dot11EHTBaseLineFeaturesImplementedOnly equals to true**

**Move: Shimi Shilo Second: Yan Xin**

**Discussion:**

**C: I believe this is a minor issue. I think we should just go ahead and vote no to this.**

**C: This is just a small improvement for free. If we want to move ahead quickly we should just accept this and move on.**

**Preliminary Result: Y/N/A/No-answer: 65/66/32/50 🡪 Preliminary fails**

**Result: Y/N/A: 62/66/31 🡪 Fails.** Appendix for results.

* 1. **209. Move to approve changes to the TGbe draft as specified in the following documents:**
* [80r9](https://mentor.ieee.org/802.11/dcn/21/11-21-0080-09-00be-twt-for-mld.docx),

**Move: Min Gan Second: Ross Jian Yu**

**Discussion: Brief overview provided by author.**

**Result: Approved with unanimous consent.**

1. Technical Submissions:
   1. [673r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0673-02-00be-psr-based-sr-discussion-follow-up.pptx) PSR-based SR Discussion Follow-up Ross Jian Yu [SP-10’]

Ross gives an update.

Straw poll #1:

**Do you agree that the intended transmit power of the PSRT PPDU in dBm shall meet the following condition:**

****

* + - Where is 20MHz \* number of non-punctured 20MHz subchannels of the PSRT PPDU
    - is the received signal power measured in dBm/20MHz. It shall be measured in at least one 20Mhz channel in which the preamble of PSRR PPDU is present. The measurement method is implementation specific.
    - PSR is equal to minimum of multiple PSR values if there exists multiple PSR values within the range of PSRT PPDU. PSR is specified in the unit of dBm/20MHz.

Discussion:

C: I find an issue here that PSR becomes unit-less. That is not good.

Result: Supported with no objection from the group.

* 1. [960r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0960-00-00be-pdt-eht-psr-based-sr-part2.docx) PDT EHT PSR based SR part2\* Ross Jian Yu [PDT-20’]

Ross goes through the document.

Discussion:

C: Can we postpone this, I would like more time to review it.

*Some comments on recommendations for further updates*

C: We should update the text for .11ax correspondingly.

1. MAC-PDTs
   1. [538r4](https://mentor.ieee.org/802.11/dcn/21/11-21-0538-04-00be-cr-for-35-4-1-dl-mu-operation.docx) CR for 35.4.1 DL MU operation Jason Y. Guo [SP-10’]

Jason goes through the updates.

Discussion:  
Some discussion on 35.4.2 RU allocation in an EHT MU PPDU

SP: Do you support to incorporate the proposed draft text in this document [11-21/0538r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0538-05-00be-cr-for-35-4-1-dl-mu-operation.docx) to the next revision of TGbe Draft?

Result: Supported with no objection from the group.

* 1. [0400r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0400-01-00be-enhanced-uora.pptx) Enhanced UORA Yanyi Ding, Panasonic

Summary: The authors have identified that the efficiency is as low as 37%. They set out to improve this.

Discussion:

C: The main use of UORA is to send some data buffer report. For lots of data, typically scheduled access is used. Did you compare e-UORA with scheduled access performance?

A: We can look into that.

C: Do you have some link level simulations?

C: On the slide 8, would it make sense to also look at delay? My understanding in RA is that you might increase the efficiency at the cost of poor STAs performing even worse.

A: I haven’t considered that, but I think it’s a good suggestion.

Out of time.

1. AoB: No other business.
2. Adjourned at 12:00.

# 14th Conf. Call: June 10 (10:00–12:00 ET)

Split PHY and MAC.

* PHY: cancelled.
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# 15th Conf. Call: June 17 (10:00–12:00 ET)

Split PHY and MAC.

* PHY: <https://mentor.ieee.org/802.11/dcn/21/11-21-0906-03-00be-minutes-of-802-11be-phy-ad-hoc-may-to-july-2021.docx>
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# 16th Conf. Call: June 21 (19:00–21:00 ET)

Split PHY and MAC.

* PHY: cancelled.
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# 17th Conf. Call: June 23 (10:00–12:00 ET)

1. The Chair, Alfred Asterjadhi (Qualcomm), calls the meeting to order at 10:01 ET. The Chair notifies that the agenda is in [785r20](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-20-00be-may-july-tgbe-teleconference-agenda.docx). The regular Secretary Dennis Sundman is unavailable for this call. Matthew Fischer will take the minutes in Dennis’ absence.
2. IEEE 802 and 802.11 IPR policy and procedure
   1. Patent Policy: Ways to inform IEEE:
      * Cause an LOA to be submitted to the IEEE-SA ([patcom@ieee.org](mailto:patcom@ieee.org)); or
      * Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
      * Speak up now and respond to this Call for Potentially Essential Patents. **Nobody speaks/writes up**.

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

* 1. The Chair goes through: Copyright Policy: Participants are advised that
     + IEEE SA’s copyright policy is described in [Clause 7](https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7) of the IEEE SA Standards Board Bylaws and [Clause 6.1](https://standards.ieee.org/about/policies/opman/sect6.html) of the IEEE SA Standards Board Operations Manual;
     + Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy
  2. The Chair goes through: Patent, Participation, Copyright and policy related subclause: Please refer to *Patent And Procedures* in [785r20](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-20-00be-may-july-tgbe-teleconference-agenda.docx).

1. Attendance reminder.

* Participation slide: <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>
* Please record your attendance during the conference call by using the IMAT system:
  + login to [imat](https://imat.ieee.org/attendance), 2) select “802.11 Telecons (<Month>)” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click “TGbe <MAC/PHY/Joint> conference call that you are attending.
* If you are unable to record the attendance via [IMAT](https://imat.ieee.org/attendance) then please send an e-mail to Dennis Sundman ([dennis.sundman@ericsson.com](mailto:dennis.sundman@ericsson.com)) and Alfred Asterjadhi ([aasterja@qti.qualcomm.com](mailto:aasterja@qti.qualcomm.com))
* Please ensure that the following information is listed correctly when joining the call: "[voter status] First Name Last Name (Affiliation)"
  + Kun, PangGao Honor Device
  + Aboulmagd, Osama Huawei Technologies Co., Ltd
  + Ahmad, Tufail Koc University
  + Ajami, Abdel Karim Qualcomm Incorporated
  + Akhmetov, Dmitry Intel Corporation
  + Al Falujah, Iyad ON Semiconductor
  + Ansley, Carol Cox Communications Inc.
  + Anwyl, Gary MediaTek Inc.
  + Asterjadhi, Alfred Qualcomm Incorporated
  + Au, Kwok Shum Huawei Technologies Co., Ltd
  + Aygul, Mehmet Vestel
  + B, Hari Ram NXP Semiconductors
  + Baek, SunHee LG ELECTRONICS
  + baron, stephane Canon Research Centre France
  + Barr, David MaxLinear
  + Bredewoud, Albert Broadcom Corporation
  + Carney, William Sony Group Corporation
  + Cheng, Paul MediaTek Inc.
  + Chitrakar, Rojan Panasonic Asia Pacific Pte Ltd.
  + Choi, Jinsoo LG ELECTRONICS
  + CHUN, JINYOUNG LG ELECTRONICS
  + Chung, Chulho SAMSUNG
  + Coffey, John Realtek Semiconductor Corp.
  + Derham, Thomas Broadcom Corporation
  + Dong, Xiandong Xiaomi Inc.
  + Duan, Ruchen SAMSUNG
  + Erceg, Vinko Broadcom Corporation
  + Fang, Yonggang Mediatek
  + feng, Shuling MediaTek Inc.
  + Fischer, Matthew Broadcom Corporation
  + Ghaderipoor, Alireza MediaTek Inc.
  + Gu, Xiangxin Unisoc
  + Haider, Muhammad Kumail Facebook
  + Han, Jonghun SAMSUNG
  + Han, Zhiqiang ZTE Corporation
  + Hart, Brian Cisco Systems, Inc.
  + Hervieu, Lili Cable Television Laboratories Inc. (CableLabs)
  + Ho, Duncan Qualcomm Incorporated
  + Hsieh, Hung-Tao MediaTek Inc.
  + Hu, Shengquan MediaTek Inc.
  + Huang, Lei Guangdong OPPO Mobile Telecommunications Corp.,Ltd
  + Huang, Po-Kai Intel Corporation
  + Ibrahim, Ahmed Samsung Research America
  + Jamalabdollahi, Mohsen Cisco Systems, Inc.
  + Jang, Insun LG ELECTRONICS
  + Jeon, Eunsung SAMSUNG ELECTRONICS
  + Kakani, Naveen Qualcomm Incorporated
  + Kamel, Mahmoud InterDigital, Inc.
  + Kandala, Srinivas SAMSUNG
  + Kim, Jeongki Self
  + Kim, Myeong-Jin SAMSUNG
  + kim, namyeong LG ELECTRONICS
  + Kim, Sang Gook LG ELECTRONICS
  + Kim, Sanghyun WILUS Inc
  + Kim, Youhan Qualcomm Incorporated
  + Kishida, Akira Nippon Telegraph and Telephone Corporation (NTT)
  + Klein, Arik Huawei Technologies Co., Ltd
  + Ko, Geonjung WILUS Inc.
  + Lansford, James Qualcomm Incorporated
  + Lee, Richard R Lee Associates
  + Leng, Shiyang Samsung Research America
  + Li, Jialing Qualcomm Technologies, Inc.
  + Lim, Dong Guk LG ELECTRONICS
  + Liu, Der-Zheng Realtek Semiconductor Corp.
  + Liu, Jianhan MediaTek Inc.
  + Lorgeoux, Mikael Canon Research Centre France
  + Lu, kaiying MediaTek Inc.
  + Lu, Liuming Guangdong OPPO Mobile Telecommunications Corp.,Ltd
  + LU, Yuxin Huawei Technologies Co., Ltd
  + Luo, Chaoming Beijing OPPO telecommunications corp., ltd.
  + Ma, Li MediaTek Inc.
  + Malichenko, Dmitrii ON Semiconductor
  + Martinez Vazquez, Marcos MaxLinear Corp
  + Max, Sebastian Ericsson AB
  + McCann, Stephen Huawei Technologies Co., Ltd
  + Montemurro, Michael Huawei Technologies Co., Ltd
  + Montreuil, Leo Broadcom Corporation
  + Naik, Gaurang Qualcomm Incorporated
  + Nezou, Patrice Canon Research Centre France
  + Ng, Boon Loong Samsung Research America
  + noh, yujin Senscomm
  + Ozbakis, Basak VESTEL
  + Palayur, Saju Maxlinear Inc
  + Park, Eunsung LG ELECTRONICS
  + Park, Minyoung Intel Corporation
  + Patil, Abhishek Qualcomm Incorporated
  + Patwardhan, Gaurav Hewlett Packard Enterprise
  + Petrick, Albert InterDigital, Inc.
  + Ratnam, Vishnu Samsung Research America
  + Redlich, Oded Huawei Technologies Co., Ltd
  + Rosdahl, Jon Qualcomm Technologies, Inc.
  + Ryu, Kiseon Ofinno
  + Schelstraete, Sigurd MaxLinear
  + Sethi, Ankit NXP Semiconductors
  + Sevin, Julien Canon Research Centre France
  + Shafin, Rubayet Samsung Research America
  + Shellhammer, Stephen Qualcomm Incorporated
  + Shilo, Shimi Huawei Technologies Co., Ltd
  + Stanley, Dorothy Hewlett Packard Enterprise
  + SUH, JUNG HOON Huawei Technologies Co., Ltd
  + Sun, Bo ZTE Corporation
  + Sun, Li-Hsiang Sony Corporation
  + Torab Jahromi, Payam Facebook
  + Tsodik, Genadiy Huawei Technologies Co., Ltd
  + Urabe, Yoshio Panasonic Corporation
  + Varshney, Prabodh Nokia
  + VIGER, Pascal Canon Research Centre France
  + Wang, Chao Chun MediaTek Inc.
  + Wang, Hao Tencent
  + Wang, Huizhao Quantenna Communications, Inc.
  + Wang, Lei Futurewei Technologies
  + Wei, Dong NXP Semiconductors
  + Wu, Kanke Qualcomm Incorporated
  + Wu, Tianyu Apple, Inc.
  + Wullert, John Perspecta Labs
  + Xin, Yan Huawei Technologies Co., Ltd
  + Yang, Jay Nokia
  + YANG, RUI InterDigital, Inc.
  + Yang, Steve TS MediaTek Inc.
  + Yano, Kazuto Advanced Telecommunications Research Institute International (ATR)
  + Yee, James MediaTek Inc.
  + yi, yongjiang Spreadtrum Communication USA Inc.
  + Yu, Jian Huawei Technologies Co., Ltd
  + Zaman, Malia IEEE Standards Association (IEEE-SA)
  + Zhang, Yuqiang XGIMI Technology Co.Ltd
  + Zhou, Pei Guangdong OPPO Mobile Telecommunications Corp.,Ltd

1. Announcements.
   1. CC36 (TGbe D1.0 CC) and CC37 (TGbe CAD CC) close tomorrow EOD ET.
   2. Deadline to send feedback on “Presented” PDT-CR docs is today EOD ET.
   3. PHY tomorrow is cancelled.
2. Agenda
   1. Technical Submissions**: PDTs**
      * [960r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0960-01-00be-pdt-eht-psr-based-sr-part2.docx) PDT-EHT-PSR-based-SR-part2 Ross Jian Yu [SP-10’]
      * [991r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0991-00-00be-pdt-on-mu-rts.docx) PDT on MU-RTS Yanjun Sun [30’]
      * [1002r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1002-00-00be-pdt-summary-eht-sounding-combinations.docx) PDT-summary-EHT-sounding-combinations Ross Jian Yu [20’]
   2. Technical Submissions**: MAC-PDTs**
      * [662r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0662-00-00be-cr-for-35-4-2-ul-mu-operation.docx) CR for 35.4.2 UL MU operation Jason Y. Guo [30’]
      * [530r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0530-05-00be-cr-nstr-link-pair-definition.docx) CR-NSTR-link-pair-definition Matthew Fischer [10’]
   3. Technical Submissions-R2 (if time permits):
      * [400r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0400-01-00be-enhanced-uora.pptx) Enhanced UORA Yanyi Ding [SP-10’]
      * [1903r2](https://mentor.ieee.org/802.11/dcn/20/11-20-1903-02-00be-random-access-for-11be.pptx) Random Access for 11be Pascal Viger [30’]
      * [1247r1](https://mentor.ieee.org/802.11/dcn/20/11-20-1247-01-00be-virtual-bss-for-multi-ap-coordination.pptx) Virtual bss for multi ap coodination Jay Yang [30’]
   4. After modifications from the original agenda, the Chair asks if there is any objections to the agenda, and seeing none, the agenda is unanimously approved

1. Presentation of Technical Submissions **PDTs**:
   1. [960r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0960-01-00be-pdt-eht-psr-based-sr-part2.docx) PDT-EHT-PSR-based-SR-part2 Ross Jian Yu [SP-10’]

Ross gives an update.

Discussion: none

Straw poll #1:

**SP 960r1:** Do you support to incorporate the proposed draft text in this document [11-21/0960r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0960-01-00be-pdt-eht-psr-based-sr-part2.docx) to the next revision of the TGbe Draft?

Discussion: None.

Result: Supported with no objection from the group.

* 1. [991r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0991-00-00be-pdt-on-mu-rts.docx) PDT on MU-RTS Yanjun Sun [PDT-30’]

Yanjun presents the material in the document.

Discussion:

C: R2 AP coordination, different BSSs with different puncture pattens, will this be accommodated?

R: SP that was passed does not accommodate it

C: Is the puncturing indicated in the MU-RTS?

R: No

C: could puncturing indication be added to the MU-RTS?

R: not easily, only static puncturing has been approved

C: why restriction on MU-RTS not allowed in EHT PPDU?

R: MU recipients might include non-EHT STA, SU recipient protection is reduced if neighbors are not EHT STA

C: HE v EHT variant, why is B55 included?

R: it aligns with the existing text

C: Is the triggered SU operation affected?

R: Triggered SU text is included in the document and no changes needed

* 1. [1002r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1002-00-00be-pdt-summary-eht-sounding-combinations.docx) PDT-summary-EHT-sounding-combinations Ross Jian Yu [PDT-20’]

Ross presents the material in the document.

Discussion:

C: various comments on formatting

1. Presentation of Technical Submission: **MAC-PDTs**:
   1. [662r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0662-02-00be-cr-for-35-4-2-ul-mu-operation.docx) CR for 35.4.2 UL MU operation Jason Y. Guo [30’]

Jason presents the material in the document.

Discussion: none

C: quick review looks fine, but want more time to review fully

R: can defer the SP

* 1. [530r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0530-05-00be-cr-nstr-link-pair-definition.docx) CR-NSTR-link-pair-defnition Matthew Fischer [10’]

Matthew presents the material in the document.

Straw poll #1:

**SP 530r5:** Do you agree to accept the changes in [11-21/0530r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0530-05-00be-cr-nstr-link-pair-definition.docx) identified by the CIDs below?

* 1482, 1661, 2141, 2259, 2455, 2958

Discussion: none.

Result: Supported with no objection from the group.

1. Presentation of Technical Submissions: proposed changes
   1. [400r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0400-01-00be-enhanced-uora.pptx) Enhanced UORA Yanyi Ding [10’]

Yanyi presents the material in the document.

Discussion:

C: Number of SS per RU can be different? So number of LTFs will be different?

R: yes

C: proposal needs additional description and detail, it is premature

C: UL MIMO control need additional signaling for power level

C: AP needs to anticipate all SS combinations, this is difficult

C: do we need to increase the UORA capacity? Can use other methods. Using MU MIMO not preferred

SP1 400r1: Do you support that EHT should consider allowing STAs to transmit in SS other than the first SS in RA-RUs?

* This is for information collection.
* Only single SS per STA is allowed.
* This is for R2.

Discussion:

* Several questions.
* Adding another option to the poll: Need more information.

Result: 15Y, 48N, 23A, 26NMI

* 1. [1903r2](https://mentor.ieee.org/802.11/dcn/20/11-20-1903-02-00be-random-access-for-11be.pptx) Random Access for 11be Pascal Viger [30’]

Pascal presents some of the material in the document before time expires for the session.

1. AoB: No other business.
2. Adjourned at 12:00.

# 18th Conf. Call: June 24 (10:00–12:00 ET)

Split PHY and MAC.

* PHY: cancelled.
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# 19th Conf. Call: June 28 (19:00–21:00 ET)

Split PHY and MAC.

* PHY: <https://mentor.ieee.org/802.11/dcn/21/11-21-0906-03-00be-minutes-of-802-11be-phy-ad-hoc-may-to-july-2021.docx>
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# 20th Conf. Call: June 30 (10:00–12:00 ET)

1. The Chair, Alfred Asterjadhi (Qualcomm), calls the meeting to order at 10:02 ET. The Chair notifies that the agenda is in [785r24](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-24-00be-may-july-tgbe-teleconference-agenda.docx).
2. IEEE 802 and 802.11 IPR policy and procedure
   1. Patent Policy: Ways to inform IEEE:
      * Cause an LOA to be submitted to the IEEE-SA ([patcom@ieee.org](mailto:patcom@ieee.org)); or
      * Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
      * Speak up now and respond to this Call for Potentially Essential Patents. **Nobody speaks/writes up**.

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

* 1. The Chair goes through: Copyright Policy: Participants are advised that
     + IEEE SA’s copyright policy is described in [Clause 7](https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7) of the IEEE SA Standards Board Bylaws and [Clause 6.1](https://standards.ieee.org/about/policies/opman/sect6.html) of the IEEE SA Standards Board Operations Manual;
     + Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy
  2. The Chair goes through: Patent, Participation, Copyright and policy related subclause: Please refer to *Patent And Procedures* in [785r24](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-24-00be-may-july-tgbe-teleconference-agenda.docx).

1. Attendance reminder.

* Participation slide: <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>
* Please record your attendance during the conference call by using the IMAT system:
  + login to [imat](https://imat.ieee.org/attendance), 2) select “802.11 Telecons (<Month>)” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click “TGbe <MAC/PHY/Joint> conference call that you are attending.
* If you are unable to record the attendance via [IMAT](https://imat.ieee.org/attendance) then please send an e-mail to Dennis Sundman ([dennis.sundman@ericsson.com](mailto:dennis.sundman@ericsson.com)) and Alfred Asterjadhi ([aasterja@qti.qualcomm.com](mailto:aasterja@qti.qualcomm.com))
* Please ensure that the following information is listed correctly when joining the call: "[voter status] First Name Last Name (Affiliation)"
  + AbidRabbu, Shaima' Istanbul Medipol University; Vestel
  + Abouelseoud, Mohamed Sony Corporation
  + Ajami, Abdel Karim Qualcomm Incorporated
  + Al Falujah, Iyad ON Semiconductor
  + An, Song-Haur INDEPENDENT
  + Ansley, Carol Cox Communications Inc.
  + Anwyl, Gary MediaTek Inc.
  + Asterjadhi, Alfred Qualcomm Incorporated
  + Au, Kwok Shum Huawei Technologies Co., Ltd
  + B, Hari Ram NXP Semiconductors
  + Baek, SunHee LG ELECTRONICS
  + Bahn, Christy IEEE STAFF
  + Bankov, Dmitry IITP RAS
  + baron, stephane Canon Research Centre France
  + Barr, David MaxLinear
  + Cao, Rui NXP Semiconductors
  + Cariou, Laurent Intel Corporation
  + Carney, William Sony Group Corporation
  + CHAN, YEE Facebook
  + Chemrov, Kirill IITP RAS
  + Cheng, Paul MediaTek Inc.
  + Chitrakar, Rojan Panasonic Asia Pacific Pte Ltd.
  + CHUN, JINYOUNG LG ELECTRONICS
  + Chung, Chulho SAMSUNG
  + Coffey, John Realtek Semiconductor Corp.
  + Das, Subir Perspecta Labs Inc
  + Derham, Thomas Broadcom Corporation
  + Dong, Xiandong Xiaomi Inc.
  + Duan, Ruchen SAMSUNG
  + Fang, Yonggang Mediatek
  + feng, Shuling MediaTek Inc.
  + Ghosh, Chittabrata Facebook, Inc.
  + Gu, Xiangxin Unisoc
  + Haider, Muhammad Kumail Facebook
  + Han, Jonghun SAMSUNG
  + Han, Zhiqiang ZTE Corporation
  + Handte, Thomas Sony Corporation
  + Hart, Brian Cisco Systems, Inc.
  + Ho, Duncan Qualcomm Incorporated
  + Hsieh, Hung-Tao MediaTek Inc.
  + Hu, Chunyu Facebook
  + Hu, Shengquan MediaTek Inc.
  + Huang, Lei Guangdong OPPO Mobile Telecommunications Corp.,Ltd
  + Huang, Po-Kai Intel Corporation
  + Ibrahim, Ahmed Samsung Research America
  + Jamalabdollahi, Mohsen Cisco Systems, Inc.
  + Jang, Insun LG ELECTRONICS
  + Kain, Carl USDoT; Noblis, Inc.
  + Kakani, Naveen Qualcomm Incorporated
  + Kamel, Mahmoud InterDigital, Inc.
  + Khorov, Evgeny IITP RAS
  + Kim, Myeong-Jin SAMSUNG
  + kim, namyeong LG ELECTRONICS
  + Kim, Sang Gook LG ELECTRONICS
  + Kim, Sanghyun WILUS Inc
  + Kim, Youhan Qualcomm Incorporated
  + Kishida, Akira Nippon Telegraph and Telephone Corporation (NTT)
  + Kneckt, Jarkko Apple, Inc.
  + Ko, Geonjung WILUS Inc.
  + Koundourakis, Michail Samsung Cambridge Solution Centre
  + Lalam, Massinissa SAGEMCOM BROADBAND SAS
  + Lee, Hong Won LG ELECTRONICS
  + Lee, Richard R Lee Associates
  + Leng, Shiyang Samsung Research America
  + Levitsky, Ilya IITP RAS
  + Levy, Joseph InterDigital, Inc.
  + Li, Jialing Qualcomm Technologies, Inc.
  + Lim, Dong Guk LG ELECTRONICS
  + LIU, CHENCHEN Huawei Technologies Co., Ltd
  + Liu, Jianhan MediaTek Inc.
  + Liu, Yong Apple, Inc.
  + Lou, Hanqing InterDigital, Inc.
  + Lu, kaiying MediaTek Inc.
  + Luo, Chaoming Beijing OPPO telecommunications corp., ltd.
  + Ma, Li MediaTek Inc.
  + Martinez Vazquez, Marcos MaxLinear Corp; MAXLINEAR INC
  + Memisoglu, Ebubekir Istanbul Medipol University; Vestel
  + Montreuil, Leo Broadcom Corporation
  + Naik, Gaurang Qualcomm Incorporated
  + Nezou, Patrice Canon Research Centre France
  + Ng, Boon Loong Samsung Research America
  + noh, yujin Senscomm
  + Park, Eunsung LG ELECTRONICS
  + Patil, Abhishek Qualcomm Incorporated
  + Patwardhan, Gaurav Hewlett Packard Enterprise
  + Petrick, Albert InterDigital, Inc.
  + Pushkarna, Rajat Panasonic Asia Pacific Pte Ltd.
  + Ratnam, Vishnu Samsung Research America
  + Rosdahl, Jon Qualcomm Technologies, Inc.
  + Roy, Sayak NXP Semiconductors
  + Schelstraete, Sigurd MaxLinear
  + Shafin, Rubayet Samsung Research America
  + Shellhammer, Stephen Qualcomm Incorporated
  + Shilo, Shimi Huawei Technologies Co., Ltd
  + Solaija, Muhammad Sohaib Istanbul Medipol University; Vestel
  + Sun, Bo ZTE Corporation
  + Sun, Li-Hsiang Sony Corporation
  + Sun, Yanjun Qualcomm Incorporated
  + Sundman, Dennis Ericsson AB
  + Tian, Bin Qualcomm Incorporated
  + Torab Jahromi, Payam Facebook
  + Tsodik, Genadiy Huawei Technologies Co., Ltd
  + Tsujimaru, Yuki Canon Inc.
  + Urabe, Yoshio Panasonic Corporation
  + Varshney, Prabodh Nokia
  + Verenzuela, Daniel Sony Corporation
  + VIGER, Pascal Canon Research Centre France
  + Wang, Chao Chun MediaTek Inc.
  + Wang, Huizhao Quantenna Communications, Inc.
  + Wang, Lei Futurewei Technologies
  + Wang, Qi Apple, Inc.
  + Wei, Dong NXP Semiconductors
  + Wu, Kanke Qualcomm Incorporated
  + Wu, Tianyu Apple, Inc.
  + Wullert, John Perspecta Labs
  + Xin, Yan Huawei Technologies Co., Ltd
  + Yang, Jay Nokia
  + Yano, Kazuto Advanced Telecommunications Research Institute International (ATR)
  + yi, yongjiang Spreadtrum Communication USA Inc.
  + Yoon, Jeonghwan LG ELECTRONICS
  + Zhang, Yan NXP Semiconductors

1. Announcements:
   1. We’ll go through the conference plan July-september.
2. Agenda:  
   Discussion:
   1. PDT 1002, I need still some time, so we can defer it from this meeting.
   2. This is Edward, my colliding meeting is cancelled so we can restore the previous schemudle.
   3. Can you update 991 to r2?

Agenda approved with unanimous consent.

1. **Motions** [1982r26](https://mentor.ieee.org/802.11/dcn/20/11-20-1982-26-00be-tgbe-motions-list-for-teleconferences-part-2.pptx) TGbe Motions List For Teleconferences-part 2**:**
   1. **Motion 209**

Move to approve changes to the TGbe draft as specified in the following documents:

* + - MAC: None.
    - PHY: [916r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0916-01-00be-pdt-additional-corrections-to-the-trigger-frame-ru-allocation-table.docx), [907r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0907-01-00be-pdt-note-in-trigger-frame-ru-allocation-table.docx), [886r3](https://mentor.ieee.org/802.11/dcn/21/11-21-0886-03-00be-proposed-changes-to-sounding-fb.docx)
    - Joint: None.

Move: Edward Au, Second: Xiaogang Chen

Discussion: No discussion.

Result: Approved with unanimous consent.

* 1. **Motion 210 (MAC-1)**

Move to approve changes to the TGbe draft as specified in the documents below and identified by the following CID tags:

* 1977 in [340r11](https://mentor.ieee.org/802.11/dcn/21/11-21-0340-11-00be-cr-for-cid-1977.docx) *[1 CID]*
* 1083, 1175, 1215, 1433, 1660, 1698, 1699, 1794, 1821, 2116, 2138, 2553, 2748, 3409 in [498r4](https://mentor.ieee.org/802.11/dcn/21/11-21-0498-04-00be-cr-for-cids-related-to-str-operation.docx) *[14 CIDs]*
* 1809, 2368 in [544r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0544-00-00be-cr-for-cids-1809-and-2368.docx) *[2 CIDs]*
* 2277, 2278, 3241, 2078, 2080, 2077, 2079, 2076, 2081 in [423r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0423-01-00be-cr-for-11-3-part-i.docx) *[9 CIDs]*
* 1195, 1444, 1882, 2516, 3379, 1497, 1001 in [480r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0480-05-00be-resolutions-for-cc34-cids-for-more-data-usage.docx) *[7 CIDs]*

Move: Edward Au, Second: George Cherian

Discussion: No discussion.

Result: Approved with unanimous consent.

* 1. **Motion 211 (MAC-2)**

Move to approve changes to the TGbe draft as specified in the documents below and identified by the following CID tags:

* 1664, 2825, 2883 in [434r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0434-01-00be-cr-for-11-3-4.docx) *[3 CIDs]*
* 1013, 1237, 1900, 2510, 2848, 3012 in [633r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0633-02-00be-cr-for-capability-information-field-related-cids.docx) *[6 CIDs]*

Move: Edward Au, Second: Carol Ansley

Discussion: No discussion.

Result: Approved with unanimous consent.

* 1. **Motion 212a**

Move to amend Motion 212 by replacing 455r7 with 455r9 in the first bullet (bullet shown below)

* 1086, 1667, 1936, 2147, 2148, 2180, 3120, 3151, 2541, and Mark’s comments in 35.2.1.2 in [455r9](https://mentor.ieee.org/802.11/dcn/21/11-21-0455-09-00be-cr-for-35-2-1-2-preamble-puncturing.docx) *[9 CIDs]*
* 1087in [538r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0538-05-00be-cr-for-35-4-1-dl-mu-operation.docx) *[1 CID]*

Move: George Cherian, Second: Yanjun Sun

Discussion: None.

Result: Motion approved with unanimous consent.

* 1. **Motion 212 (Joint)**

Move to approve changes to the TGbe draft as specified in the documents below and identified by the following CID tags:

* 1086, 1667, 1936, 2147, 2148, 2180, 3120, 3151, 2541, and Mark’s comments in 35.2.1.2 in [455r9](https://mentor.ieee.org/802.11/dcn/21/11-21-0455-09-00be-cr-for-35-2-1-2-preamble-puncturing.docx) *[9 CIDs]*
* 1087in [538r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0538-05-00be-cr-for-35-4-1-dl-mu-operation.docx) *[1 CID]*

Move: Edward Au, Second: Yanjun Sun

Discussion: None.

Result: Approved with unanimous consent.

1. **Next Gen CC-Status/Leftover Assignments (after 10:30 ET)**
   * [1935r8](https://mentor.ieee.org/802.11/dcn/19/11-19-1935-08-00be-tgbe-editor-s-report.ppt) TGbe Editor’s Report (Edward Au)

Edward goes through the document.

Some discussion.

* + [984r8](https://mentor.ieee.org/802.11/dcn/20/11-20-0984-08-00be-tgbe-teleconference-guidelines.docx) Updated Guidelines (Alfred Asterjadhi)

Alfred goes through the document.

* + [1019r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1019-00-00be-ieee-802-11be-cc37-comments-on-coexistence-assessment-document.xlsx) IEEE 802.11be CC37 comments on CAD (Edward Au)
  + [1018r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1018-00-00be-ieee-802-11be-cc36-comments.xlsx) CC36 comments (Edward Au)

1. **Proposed July-Sept Teleconference Plan**
   1. Alfred shows the proposed teleconference agenda.

Discussion:

C: Could we add the extra hour to the timeslots 10:00 instead of 19:00?

SP:

Do you support to extend by one hour the PM ad-hoc calls (Monday, from 19-22)?

Result: Y/N/A/No-answer: 58/62/16/47

1. Technical Submissions**: PDTs**
   * [991r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0991-01-00be-pdt-on-mu-rts.docx) PDT on MU-RTS Yanjun Sun [SP-10’]

Yanjun goes through the document.

Discussion:  
C: I believe this (9.3.1.?) leads us in the wrong direction.

* + [1014r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1014-00-00be-resolutions-for-35-1-and-35-3-1.docx) Resolutions for 35.1 and 35.3.1 Carol Ansley [20’]

Carol goes through the document.

Discussion:

Some updates as we walk through the document.

1. AoB: No other business.
2. Adjourn at 11:59 ET.

# 21st Conf. Call: July 07 (10:00–12:00 ET)

1. The Chair, Alfred Asterjadhi (Qualcomm), calls the meeting to order at 10:02 ET. The Chair notifies that the agenda is in [785r27](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-27-00be-may-july-tgbe-teleconference-agenda.docx).
2. IEEE 802 and 802.11 IPR policy and procedure
   1. Patent Policy: Ways to inform IEEE:
      * Cause an LOA to be submitted to the IEEE-SA ([patcom@ieee.org](mailto:patcom@ieee.org)); or
      * Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
      * Speak up now and respond to this Call for Potentially Essential Patents. **Nobody speaks/writes up**.

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

* 1. The Chair goes through: Copyright Policy: Participants are advised that
     + IEEE SA’s copyright policy is described in [Clause 7](https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7) of the IEEE SA Standards Board Bylaws and [Clause 6.1](https://standards.ieee.org/about/policies/opman/sect6.html) of the IEEE SA Standards Board Operations Manual;
     + Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy
  2. The Chair goes through: Patent, Participation, Copyright and policy related subclause: Please refer to *Patent And Procedures* in [785r27](https://mentor.ieee.org/802.11/dcn/21/11-21-0785-27-00be-may-july-tgbe-teleconference-agenda.docx).

1. Attendance reminder.

* Participation slide: <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>
* Please record your attendance during the conference call by using the IMAT system:
  + login to [imat](https://imat.ieee.org/attendance), 2) select “802.11 Telecons (<Month>)” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click “TGbe <MAC/PHY/Joint> conference call that you are attending.
* If you are unable to record the attendance via [IMAT](https://imat.ieee.org/attendance) then please send an e-mail to Dennis Sundman ([dennis.sundman@ericsson.com](mailto:dennis.sundman@ericsson.com)) and Alfred Asterjadhi ([aasterja@qti.qualcomm.com](mailto:aasterja@qti.qualcomm.com))
* Please ensure that the following information is listed correctly when joining the call: "[voter status] First Name Last Name (Affiliation)"
  + AbidRabbu, Shaima' Istanbul Medipol University; Vestel
  + Aboulmagd, Osama Huawei Technologies Co., Ltd
  + Adhikari, Shubhodeep Broadcom Corporation
  + Ajami, Abdel Karim Qualcomm Incorporated
  + Al Falujah, Iyad ON Semiconductor
  + An, Song-Haur INDEPENDENT
  + Ansley, Carol Cox Communications Inc.
  + Anwyl, Gary MediaTek Inc.
  + Asterjadhi, Alfred Qualcomm Incorporated
  + Au, Kwok Shum Huawei Technologies Co., Ltd
  + Avallone, Stefano University of Napoli
  + Aygul, Mehmet Vestel
  + B, Hari Ram NXP Semiconductors
  + Baek, SunHee LG ELECTRONICS
  + Bankov, Dmitry IITP RAS
  + baron, stephane Canon Research Centre France
  + Barr, David MaxLinear
  + Bredewoud, Albert Broadcom Corporation
  + Cao, Rui NXP Semiconductors
  + Carney, William Sony Group Corporation
  + CHAN, YEE Facebook
  + Chemrov, Kirill IITP RAS
  + Cheng, Paul MediaTek Inc.
  + Chitrakar, Rojan Panasonic Asia Pacific Pte Ltd.
  + Choi, Jinsoo LG ELECTRONICS
  + CHUN, JINYOUNG LG ELECTRONICS
  + Coffey, John Realtek Semiconductor Corp.
  + Das, Subir Perspecta Labs Inc
  + Derham, Thomas Broadcom Corporation
  + Dong, Xiandong Xiaomi Inc.
  + Erceg, Vinko Broadcom Corporation
  + Fang, Yonggang Mediatek
  + feng, Shuling MediaTek Inc.
  + Ghosh, Chittabrata Facebook, Inc.
  + Gu, Xiangxin Unisoc
  + Haider, Muhammad Kumail Facebook
  + Han, Zhiqiang ZTE Corporation
  + Handte, Thomas Sony Corporation
  + Hervieu, Lili Cable Television Laboratories Inc. (CableLabs)
  + Ho, Duncan Qualcomm Incorporated
  + Hsieh, Hung-Tao MediaTek Inc.
  + Hu, Chunyu Facebook
  + Huang, Lei Guangdong OPPO Mobile Telecommunications Corp.,Ltd
  + Huang, Po-Kai Intel Corporation
  + Ibrahim, Ahmed Samsung Research America
  + Jamalabdollahi, Mohsen Cisco Systems, Inc.
  + Jang, Insun LG ELECTRONICS
  + Jeon, Eunsung SAMSUNG ELECTRONICS
  + Kamel, Mahmoud InterDigital, Inc.
  + Khorov, Evgeny IITP RAS
  + Kim, Jeongki Self
  + Kim, Myeong-Jin SAMSUNG
  + kim, namyeong LG ELECTRONICS
  + Kim, Sang Gook LG ELECTRONICS
  + Kim, Sanghyun WILUS Inc
  + Kim, Youhan Qualcomm Incorporated
  + Kishida, Akira Nippon Telegraph and Telephone Corporation (NTT)
  + Klein, Arik Huawei Technologies Co., Ltd
  + Ko, Geonjung WILUS Inc.
  + Lalam, Massinissa SAGEMCOM BROADBAND SAS
  + Lee, Hong Won LG ELECTRONICS
  + Lee, Richard R Lee Associates
  + Levitsky, Ilya IITP RAS
  + Levy, Joseph InterDigital, Inc.
  + Li, Jialing Qualcomm Technologies, Inc.
  + Lim, Dong Guk LG ELECTRONICS
  + Liu, Der-Zheng Realtek Semiconductor Corp.
  + Liu, Jianhan MediaTek Inc.
  + Liu, Yong Apple, Inc.
  + Lorgeoux, Mikael Canon Research Centre France
  + Lu, kaiying MediaTek Inc.
  + Lu, Liuming Guangdong OPPO Mobile Telecommunications Corp.,Ltd
  + Luo, Chaoming Beijing OPPO telecommunications corp., ltd.
  + Martinez Vazquez, Marcos MaxLinear Corp; MAXLINEAR INC
  + Max, Sebastian Ericsson AB
  + McCann, Stephen Huawei Technologies Co., Ltd
  + Mehrnoush, Morteza Facebook
  + Memisoglu, Ebubekir Istanbul Medipol University; Vestel
  + Montemurro, Michael Huawei Technologies Co., Ltd
  + NANDAGOPALAN, SAI SHANKAR Infineon Technologies
  + Nayak, Peshal Samsung Research America
  + Ng, Boon Loong Samsung Research America
  + Ouchi, Masatomo Canon
  + Ozbakis, Basak VESTEL
  + Palayur, Saju Maxlinear Inc
  + Pang, Kun Honor Device Co., Ltd.
  + Park, Eunsung LG ELECTRONICS
  + Patil, Abhishek Qualcomm Incorporated
  + Petrick, Albert InterDigital, Inc.
  + Pushkarna, Rajat Panasonic Asia Pacific Pte Ltd.
  + Rafique, Saira Istanbul Medipol University ; VESTEL
  + Ratnam, Vishnu Samsung Research America
  + Redlich, Oded Huawei Technologies Co., Ltd
  + Roder, Patricia IEEE STAFF
  + Ryu, Kiseon Ofinno
  + Schelstraete, Sigurd MaxLinear
  + Sevin, Julien Canon Research Centre France
  + Shafin, Rubayet Samsung Research America
  + Shilo, Shimi Huawei Technologies Co., Ltd
  + Solaija, Muhammad Sohaib Istanbul Medipol University; Vestel
  + SUH, JUNG HOON Huawei Technologies Co., Ltd
  + Sun, Bo ZTE Corporation
  + Sun, Li-Hsiang Sony Corporation
  + Sun, Yanjun Qualcomm Incorporated
  + Torab Jahromi, Payam Facebook
  + Varshney, Prabodh Nokia
  + Verma, Sindhu Broadcom Corporation
  + Wang, Chao Chun MediaTek Inc.
  + Wang, Huizhao Quantenna Communications, Inc.
  + Wang, Lei Futurewei Technologies
  + Wei, Dong NXP Semiconductors
  + Wu, Kanke Qualcomm Incorporated
  + Wu, Tianyu Apple, Inc.
  + Wullert, John Perspecta Labs
  + Xin, Yan Huawei Technologies Co., Ltd
  + Yang, Bo Huawei Technologies Co., Ltd
  + Yang, Jay Nokia
  + Yang, Steve TS MediaTek Inc.
  + Yano, Kazuto Advanced Telecommunications Research Institute International (ATR)
  + yi, yongjiang Spreadtrum Communication USA Inc.
  + Yoon, Jeonghwan LG ELECTRONICS
  + Yu, Jian Huawei Technologies Co., Ltd
  + Zhou, Pei Guangdong OPPO Mobile Telecommunications Corp.,Ltd

1. Announcements:
   * Have holiday week between Aug. 2ndto 6th rather than current Aug. 9th to 13th?
     + No response from the group. Chair to decide along CAC lines, providing his feedback to the CAC.
2. The Chair goes through the agenda.
   * Discussion:

C: Can you defer 663, we need more time for the straw poll?

C: 991 can you update it to r3?

C: For 1903, may I have some more time for question and discussion?

* + Agenda approved with unanimous consent.

1. Next Gen CC-Status/Leftover Assignments
   * [1062r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1062-00-00be-tgbe-editor-s-report-on-cc36-and-cc37.ppt) TGbe Editor’s Report (Edward Au)
     + Edward goes through the report.
     + Edward assigns CIDs to volunteers.
2. Technical Submissions**: PDTs**
   * [991r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0991-02-00be-pdt-on-mu-rts.docx) PDT on MU-RTS Yanjun Sun [SP-10’]
     + Yanjun goes through the document.
     + SP: Do you support to incorporate the proposed draft text in this document 11-21/991r3 to the next revision of the TGbe Draft?

Discussion: No discussion

Result: Straw poll supported with no objection from the group.

1. Technical Submissions**: MAC-PDTs**
   * [662r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0662-02-00be-cr-for-35-4-2-ul-mu-operation.docx) CR for 35.4.2 UL MU operation Jason Y. Guo [SP-10’]
     + Jason goes through the document.
     + Discussion:

C: I think there are quite some parts of the document that still requires some work.

C: Some parts of the document related to the PHY capability field are not correct.

* + - Time will be allocated next week for this straw poll.

1. Technical Submissions-R2 (if time permits):
   * [1903r2](https://mentor.ieee.org/802.11/dcn/20/11-20-1903-02-00be-random-access-for-11be.pptx) Random Access for 11be Pascal Viger [Q&A-10’]
     + Pascal briefly recaps the document.
     + Discussion:

C: There is no point to do random access anymore.

C: I’m not sure case C is valid because of power alignment challenges.

C: What’s the benefit of randomize feedback status?

C: Are there any gains for associated STAs? I believe there will be little collision among associated STAs.

* + [1247r1](https://mentor.ieee.org/802.11/dcn/20/11-20-1247-01-00be-virtual-bss-for-multi-ap-coordination.pptx) Virtual bss for multi ap coodination Jay Yang [30’]
    - Jay goes through his contribution. He presents an idea of using Multi-AP connectivity to provide continuous data flow through BSS transition.
    - Discussion:

C: Considering the summary, isn’t this similar to how it is already defined for MLD?

C: Is the MLD and Multi-AP consistent with this?

1. AoB:
   * Tomorrow’s PHY conf call is cancelled.
2. Adjourn at 12:00 ET.

# 22nd Conf. Call: July 08 (10:00–12:00 ET)

Split PHY and MAC.

* PHY: cancelled.
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-0874-11-00be-minutes-for-tgbe-mac-ad-hoc-teleconferences-in-may-and-july-2021.docx>

# Appendix

1. **Motion 207 results**
   1. Calculated Results : 59Y, 52N, 36A, [53%]
   2. Amended Results : 59Y, 51N, 32A, [53%]
   3. ---------------------------------------------
   4. ---------------------------------------------
   6. [V] Jim Lansford Qualcomm | X | | |
   7. Matthew Fischer | X | | |
   8. [V] Osama Aboul-Magd Huawei | | X | |
   9. [V] Edward Au Huawei | X | | |
   10. [V] Al Petrick InterDigital | | X | |
   11. [v] Liwen Chu NXP | X | | |
   12. [V] Chunyu Hu FB | X | | |
   13. [V] Junghoon Suh Huawei | | X | |
   14. [V] Zhou Lan Broadcom | X | | |
   15. [V] Prabodh Varshney Nokia | X | | |
   16. [V] Subir Das [PLabs] | | | X |
   17. [V] Ron Porat Broadcom | X | | |
   18. [V] Rui Yang, InterDigital | | X | |
   19. Jianhan.Liu MUS | X | | |
   20. [V]Lily Yunping Lv Huawei | | X | |
   21. [V] Wook Bong Lee Samsung | | X | |
   22. [V] Mike Montemurro Huawei | | X | |
   23. [v] Yujin Noh Senscomm | | X | |
   24. [V] George Cherian Qualcomm | X | | |
   25. [V] Naveen Kakani Qualcomm | X | | |
   26. [V] David Yang Huawei | | X | |
   27. [V] Mahmoud Kamel InterDigital | | X | |
   28. [V] Duncan Ho Qualcomm | X | | |
   29. [V] Sameer Vermani Qualcomm | X | | |
   30. [V] Carl Kain USDOT; Noblis | | | X |
   31. [V] Alice Jialing Li Chen Qualcomm | X | | |
   32. [V] Brian Hart Cisco Systems | | | X |
   33. [V] Youhan Kim, Qualcomm | X | | |
   34. [V] Kanke Wu Qualcomm | X | | |
   35. [V] Yonggang Fang MediaTek | X | | |
   36. Kaiying.Lu MUS | X | | |
   37. [V] Xiaogang Chen Intel | X | | |
   38. [V] Muhammad Sohaib Solaija IMU; Vestel | | | X |
   39. [V] Stephane Baron, Canon | | | X |
   40. [V] Basak Ozbakis , Vestel | X | | |
   41. [V] Shimi Shilo Huawei | | X | |
   42. [V] Dennis Sundman, Ericsson | | | X |
   43. [V] Pascal VIGER Canon | | | X |
   44. [V] Dror Regev Huawei | | X | |
   45. [V]Jarkko Kneckt Apple | X | | |
   46. [V] David Boldy Broadcom | X | | |
   47. [V] Ezer Melzer, Huawei | | X | |
   48. [V] Patrice NEZOU Canon | | | X |
   49. [V] Ilya Levitsky IITP RAS | | X | |
   50. [V] Oded Redlich Huawei | | X | |
   51. [V] Mor Reich Huawei | | X | |
   52. [V] Dmitry Bankov, IITP RAS | | X | |
   53. [V] Sebastian Max Ericsson | | | X |
   54. [V] Arik Klein Huawei | | X | |
   55. [v] Rolf de Vegt Qualcomm | X | | |
   56. [V] Yaron BenArie Huawei | | X | |
   57. [V] Alecsander Eitan - Qualcomm | X | | |
   58. [V] Jonas Sedin Ericsson | | | X |
   59. [V] Thomas Handte Sony | X | | |
   60. [V] Genadiy Tsodik Huawei | | X | |
   61. [V] Allert van Zelst Qualcomm | X | | |
   62. [V] Dinakar Prabhakaran Broadcom | X | | |
   63. [V] Lei Huang OPPO | | | X |
   64. [V] Hari Ram B NXP | X | | |
   65. [V] Ross Jian Yu Huawei | | X | |
   66. [V] Rajat Pushkarna Panasonic | | | X |
   67. [V] Yifan Zhou Huawei | | X | |
   68. [V] Yiqing Li Huawei | | X | |
   69. [V]Ding Yanyi Panasonic | | | X |
   70. [V] Ivan Startsev IITP RAS | | X | |
   71. [V] Seungho Choo Senscomm | | X | |
   72. [V] Ankit Sethi NXP | X | | |
   73. [V] Jason Yuchen Guo Huawei | | X | |
   74. [V] Rojan Chitrakar Panasonic | | | X |
   75. [V] BO SUN ZTE | | | X |
   76. [V] Shubhodeep Adhikari Broadcom | X | | |
   77. [V] Niranjan Grandhe NXP | X | | |
   78. [V] Kazuto Yano ATR | | | X |
   79. [V] Yunbo Li Huawei Technologies | | X | |
   80. [V] Jay.Yang Nokia | | X | |
   81. [V] Myeongjin Kim Samsung | | X | |
   82. [V]XIANDONG DONG XIAOMI | | X | |
   83. [V] Dongguk Lim LGE | | X | |
   84. [V] Wei Lin huawei | | X | |
   85. [V] Aleksey Kureev IITP RAS | | X | |
   86. [V] Eunsung Park LGE | X | | |
   87. [V] Jinyoung Chun LGE | | X | |
   88. [V] Chaoming Luo OPPO | | | X |
   89. [V] Ming Gan Huawei | | X | |
   90. [V] Sanghyun Kim WILUS | | | X |
   91. [V] Jeongki Kim Self | | | X |
   92. [V] Jiayin Zhang huawei | | X | |
   93. [A] Xiangxin Gu, Unisoc | | | X | INVALID VOTE: NON VOTER
   94. [A] Yuki Tsujimaru Canon | | | X | INVALID VOTE: NON VOTER
   95. [A] Jeonghwan Yoon LGE | | | X | INVALID VOTE: NON VOTER
   96. [V] Jinsoo Choi LG | | | X |
   97. [V] Yoshio Urabe, Panasonic | X | | |
   98. [V] Zhenguo Du Huawei | | X | |
   99. [V] Frank Hsu Mediatek | X | | |
   100. [V] Chulho Chung Samsung | | | X |
   101. [V] Jonghun Han Samsung | | | X |
   102. [V] Insun Jang LGE | | | X |
   103. [V] Rob SunHuawei | | X | | INVALID VOTE: NO MATCH FOUND!
   104. [V] Zhiqiang HanZTE | | X | |
   105. [V] Mao Yang Northwestern Polytechnical University | | X | |
   106. [V] Harry Hao Wang Tencent | | X | |
   107. [V]Xin Zuo Tencent | | X | |
   108. [V] Eunsung Jeon Samsung | | X | |
   109. [V] Akira Kishida NTT | | | X |
   110. [V] Vyacheslav Loginov IITP RAS | | X | |
   111. [V]Chenhe Ji Huawei | | X | |
   112. [V] Bin Tian Qualcomm | X | | |
   113. [V] Sang Kim LGE | | | X |
   114. [V] Srinivas Kandala Samsung | | X | |
   115. [V] Chao-Chun Wang MediaTek | X | | |
   116. [V] Rui Cao [NXP] | X | | |
   117. [V] Jon Rosdahl; Qualcomm | X | | |
   118. [V] Sai Cypress/Infineon | | | X |
   119. [V] Minyoung Park Intel | X | | |
   120. [V] Yan ZhangNXP | X | | |
   121. [V] Yanjun Sun Qualcomm | X | | |
   122. [V] Tianyu Wu Apple | X | | |
   123. [V] Gaurav Patwardhan HPE | | | X |
   124. [V] Huizhao Wang, ON Semi/Quantenna | | | X |
   125. [V] Rethna Pulikkoonattu Broadcom | X | | |
   126. [V] Qi Wang Apple | X | | |
   127. [V] Rana Abdelaal Broadcom | X | | |
   128. [V] Hassan Omar [Huawei] | | X | |
   129. [V] Cheng Chen Intel | X | | |
   130. [V] Lei Wang Futurewei | | X | |
   131. [V] Yong Liu Apple | X | | |
   132. [V] Yan Xin Huawei | | X | |
   133. John Yi | | | X | INVALID VOTE: NO MATCH FOUND!
   134. [V] Steve Shellhammer Qualcomm | X | | |
   135. Vinko Erceg | X | | |
   136. [V] Liangxiao Xin Sony | | | X |
   137. [V] Gary Anwyl, Mediatek | X | | |
   138. [V] James Yee, MediaTek | X | | |
   139. [V] Young Hoon Kwon NXP | X | | |
   140. [V] Morteza Mehrnoush FB | | | X |
   141. [V] Lin Yang Qualcomm | X | | |
   142. [V] Ruchen Duan Samsung | | | X |
   143. [V]Manish Kumar nxp\_ | X | | |
   144. [V] Thomas Derham | X | | |
   145. [V] Leo Montreuil, Broadcom | X | | |
   146. [V] Lili Hervieu CableLabs | | | X |
   147. [V] Nehru Bhandaru Broadcom | X | | |
   148. [V] Li-Hsiang Sun Sony | X | | |
   149. Sindhu Verma | X | | |
   150. [V] Hongjia Su Huawei | | X | |
   151. [V] Panchun Huawei | | X | |
   152. [V]Danny Tan | | X | |
2. **Motion 208 results**
   1. Calculated Results : 65Y, 66N, 32A, [49%]
   2. Amended Results : 62Y, 66N, 31A, [48%]
   3. ---------------------------------------------
   4. ---------------------------------------------
   6. [V] Jim Lansford Qualcomm | | X | |
   7. Matthew Fischer | | X | |
   8. [V] Osama Aboul-Magd Huawei | X | | |
   9. [V] Abhishek Patil Qualcomm | X | | |
   10. [V] Edward Au Huawei | | | X |
   11. [V] Al Petrick InterDigital | | X | |
   12. [v] Liwen Chu NXP | | X | |
   13. [V] Junghoon Suh Huawei | X | | |
   14. [V] Prabodh Varshney Nokia | X | | |
   15. [V] Subir Das [PLabs] | | | X |
   16. [V] Ron Porat Broadcom | | X | |
   17. [V] Rui Yang, InterDigital | | X | |
   18. Jianhan.Liu MUS | | X | |
   19. [V] Hanqing Lou InterDigital | | X | |
   20. [V]Lily Yunping Lv Huawei | X | | |
   21. [V] Wook Bong Lee Samsung | X | | |
   22. [V] Bill Carney Sony | | X | |
   23. [V] Mike Montemurro Huawei | X | | |
   24. [v] Yujin Noh Senscomm | X | | |
   25. [V] Naveen Kakani Qualcomm | | X | |
   26. [V] David Yang Huawei | X | | |
   27. [V] Mahmoud Kamel InterDigital | | X | |
   28. [V] Duncan Ho Qualcomm | | X | |
   29. [V] Carl Kain USDOT; Noblis | | | X |
   30. [V] Alice Jialing Li Chen Qualcomm | | X | |
   31. [V] Brian Hart Cisco Systems | | X | |
   32. [V] Youhan Kim, Qualcomm | | X | |
   33. [V] Kanke Wu Qualcomm | | X | |
   34. [V] Yonggang Fang MediaTek | | X | |
   35. Kaiying.Lu MUS | | X | |
   36. [V] Xiaogang Chen Intel | | X | |
   37. [V] Albert Bredewoud, Broadcom | | X | |
   38. [V] Muhammad Sohaib Solaija IMU; Vestel | | | X |
   39. [V] Stephane Baron, Canon | | | X |
   40. [V] Shimi Shilo Huawei | X | | |
   41. [V] Dennis Sundman, Ericsson | X | | |
   42. [V] Pascal VIGER Canon | | | X |
   43. [V] Dror Regev Huawei | X | | |
   44. [V]Jarkko Kneckt Apple | | | X |
   45. [V] David Boldy Broadcom | | X | |
   46. [V] Ezer Melzer, Huawei | X | | |
   47. [V] Daniel Verenzuela Sony | X | | |
   48. [V] Ilya Levitsky IITP RAS | X | | |
   49. [V] Oded Redlich Huawei | X | | |
   50. [V] Mor Reich Huawei | X | | |
   51. [V] Dmitry Bankov, IITP RAS | X | | |
   52. [V] Sebastian Max Ericsson | | | X |
   53. [V] Arik Klein Huawei | X | | |
   54. [v] Rolf de Vegt Qualcomm | | X | |
   55. [V] Yaron BenArie Huawei | X | | |
   56. [V] Alecsander Eitan - Qualcomm | | X | |
   57. [V] Jonas Sedin Ericsson | | | X |
   58. [V] Thomas Handte Sony | | X | |
   59. [V] Genadiy Tsodik Huawei | X | | |
   60. [V] Allert van Zelst Qualcomm | | X | |
   61. 802.11 Chair | X | | | INVALID VOTE: NO MATCH FOUND!
   62. [V] Ebubekir Memisoglu IMU; Vestel | X | | |
   63. [V] laurent cariou, Intel | | X | |
   64. [V] Dinakar Prabhakaran Broadcom | | X | |
   65. [V] Lei Huang OPPO | | | X |
   66. [V] Hari Ram B NXP | | X | |
   67. [V] Ross Jian Yu Huawei | X | | |
   68. [V] Rajat Pushkarna Panasonic | | | X |
   69. [V] Yifan Zhou Huawei | X | | |
   70. [V] Yiqing Li Huawei | X | | |
   71. [V]Ding Yanyi Panasonic | | | X |
   72. [V] Ivan Startsev IITP RAS | X | | |
   73. [V] Seungho Choo Senscomm | X | | |
   74. [V] Ankit Sethi NXP | | X | |
   75. [V] Jason Yuchen Guo Huawei | X | | |
   76. [V] Rojan Chitrakar Panasonic | | | X |
   77. [V] Niranjan Grandhe NXP | | X | |
   78. [V] Kazuto Yano ATR | | | X |
   79. [V] Yunbo Li Huawei Technologies | X | | |
   80. [V] Jay.Yang Nokia | X | | |
   81. [V] Myeongjin Kim Samsung | X | | |
   82. [V]XIANDONG DONG XIAOMI | X | | |
   83. [V] Dongguk Lim LGE | X | | |
   84. [V] Wei Lin huawei | X | | |
   85. [V] Aleksey Kureev IITP RAS | X | | |
   86. [V] Eunsung Park LGE | X | | |
   87. [V] Jinyoung Chun LGE | | X | |
   88. [V] Chaoming Luo OPPO | | | X |
   89. [V] Ming Gan Huawei | X | | |
   90. [V]Chenchen LiuHuawei | X | | |
   91. [V] Sanghyun Kim WILUS | | | X |
   92. [V] Jeongki Kim Self | | | X |
   93. [V] Jiayin Zhang huawei | X | | |
   94. [V] Mengshi Hu Huawei | X | | |
   95. [V]Guogang Huang Huawei | X | | |
   96. [V] Greg Geonjung Ko WILUS | | | X |
   97. [A] Jeonghwan Yoon LGE | X | | | INVALID VOTE: NON VOTER
   98. [V] Jinsoo Choi LG | X | | |
   99. [V] Yoshio Urabe, Panasonic | | X | |
   100. [V] Zhenguo Du Huawei | X | | |
   101. [V] Frank Hsu Mediatek | | X | |
   102. [V] Jonghun Han Samsung | | X | |
   103. [V] Insun Jang LGE | | | X |
   104. [V] Yan Zeng | X | | |
   105. [V] Rob SunHuawei | X | | | INVALID VOTE: NO MATCH FOUND!
   106. [V] Zhiqiang HanZTE | | | X |
   107. [V]Menyao Ma Huawei | X | | |
   108. [V] Mao Yang Northwestern Polytechnical University | X | | |
   109. [V] Baokun Ding Huawei | X | | |
   110. [V]HungTao Hsieh Mediatek | | X | |
   111. [V] Harry Hao Wang Tencent | X | | |
   112. [V]Xin Zuo Tencent | X | | |
   113. [V] Eunsung Jeon Samsung | | | X |
   114. [V] Akira Kishida NTT | | | X |
   115. [V] Vyacheslav Loginov IITP RAS | X | | |
   116. [V]Jianhui Li Huawei | X | | |
   117. [V]Chenhe Ji Huawei | X | | |
   118. [V]Yingxiang Sun Huawei | X | | |
   119. [V] SunHee Baek LGE | X | | |
   120. [V] Bin Tian Qualcomm | | X | |
   121. [V] Sang Kim LGE | X | | |
   122. [V] Srinivas Kandala Samsung | | X | |
   123. [V] Chao-Chun Wang MediaTek | | X | |
   124. [V] Rui Cao [NXP] | | X | |
   125. [V] Jon Rosdahl; Qualcomm | | X | |
   126. [V] Minyoung Park Intel | | X | |
   127. [V] Yan ZhangNXP | | X | |
   128. [V] Yanjun Sun Qualcomm | | X | |
   129. [V] Tianyu Wu Apple | | X | |
   130. [V] Gaurav Patwardhan HPE | | | X |
   131. [V] Huizhao Wang, ON Semi/Quantenna | | | X |
   132. [V] Rethna Pulikkoonattu Broadcom | | X | |
   133. [V] Qi Wang Apple | | | X |
   134. [V] Rana Abdelaal Broadcom | | X | |
   135. [V] Julia Shuling Feng MediaTek | | X | |
   136. [V] Chunyu Hu FB | | X | |
   137. [V] Hassan Omar [Huawei] | X | | |
   138. [V] Cheng Chen Intel | | X | |
   139. [V] Lei Wang Futurewei | X | | |
   140. [V] Yong Liu Apple | | | X |
   141. [V] Yan Xin Huawei | X | | |
   142. John Yi | | | X | INVALID VOTE: NO MATCH FOUND!
   143. [V] Steve Shellhammer Qualcomm | | X | |
   144. Vinko Erceg | | X | |
   145. [V] paul cheng MediaTek | | X | |
   146. [V] Liangxiao Xin Sony | | | X |
   147. [V] Gary Anwyl, Mediatek | | X | |
   148. [V] James Yee, MediaTek | | X | |
   149. [V] Young Hoon Kwon NXP | | X | |
   150. [V] Morteza Mehrnoush FB | | | X |
   151. [V] Lin Yang Qualcomm | | X | |
   152. [V] Ruchen Duan Samsung | | | X |
   153. [V]Manish Kumar nxp\_ | | X | |
   154. [V] Thomas Derham | | X | |
   155. [V] Xiaofei Wang InterDigital | | X | |
   156. [V] Leo Montreuil, Broadcom | | X | |
   157. [V} dibakar das, Intel | | X | |
   158. [V] Lili Hervieu CableLabs | | | X |
   159. [V] Payam Torab | Facebook | X | | |
   160. [V] Nehru Bhandaru Broadcom | | X | |
   161. [V] Song H An Independent | | X | |
   162. [V] Thomas Pare Mediatek | | X | |
   163. [V] Yee Sin Chan Facebook | | X | |
   164. [V] Li-Hsiang Sun Sony | | | X |
   165. Sindhu Verma | | X | |
   166. [V] Hongjia Su Huawei | X | | |
   167. [V] Panchun Huawei | X | | |
   168. [V]Danny Tan | X | | |