IEEE P802.11
Wireless LANs

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| TGbe November 2021 to January 2022 teleconference minutes |
| Date: 2021-12-03 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Dennis Sundman | Ericsson |  |  | dennis.sundman@ericsson.com |
|  |  |  |  |  |

Abstract

This document contains the draft minutes for November 2021 to January 2022 TGbe teleconferences.

Revisions:

* Rev0: First version of the document.
* Rev1: Added minutes to the conference call December 15. Added references to ad-hoc calls up to December 15.
* Rev2: Updated references, added references up to conference call Jan 5, and added the conference call Jan 5.

# 5th Conf. Call: Nov 17 (10:00–12:00 ET)

Only MAC.

* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-1897-11-00be-minutes-for-tgbe-mac-teleconferences-in-nov-2021-to-jan-2022.docx>

# 6th Conf. Call: Nov 18 (10:00–12:00 ET)

Only MAC.

* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-1897-11-00be-minutes-for-tgbe-mac-teleconferences-in-nov-2021-to-jan-2022.docx>

# 7th Conf. Call: Nov 22 (19:00–21:00 ET)

Split PHY and MAC:

* PHY: <https://mentor.ieee.org/802.11/dcn/21/11-21-2008-01-00be-minutes-for-tgbe-phy-ad-hoc-cc-nov-2021-to-jan-2022.docx>
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-1897-11-00be-minutes-for-tgbe-mac-teleconferences-in-nov-2021-to-jan-2022.docx>

# 8th Conf. Call: Nov 29 (19:00–21:00 ET)

Split PHY and MAC:

* PHY: <https://mentor.ieee.org/802.11/dcn/21/11-21-2008-01-00be-minutes-for-tgbe-phy-ad-hoc-cc-nov-2021-to-jan-2022.docx>
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-1897-11-00be-minutes-for-tgbe-mac-teleconferences-in-nov-2021-to-jan-2022.docx>

# 9th Conf. Call: Dec 01 (10:00–12:00 ET)

1. The Chair, Alfred Asterjadhi (Qualcomm) calls the meeting to order at 10:02 ET. The agenda is found in [1775r8](https://mentor.ieee.org/802.11/dcn/21/11-21-1775-08-00be-nov-jan-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); 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

* 1. 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. **Nobody speaks/writes up.**
1. The Chair goes through the **Copyright Policy**: Participants are advised that
	1. 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;
	2. 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
	3. **Patent, Participation, Copyright and policy related subclause:** The Chair goes through the *Patent And Procedures* section in [1775r8](https://mentor.ieee.org/802.11/dcn/21/11-21-1775-08-00be-nov-jan-tgbe-teleconference-agenda.docx).
2. Attendance reminder.
	1. 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:

1) 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) and Alfred Asterjadhi (aasterja@qti.qualcomm.com)

Please ensure that the following information is listed correctly when joining the call:

"[voter status] First Name Last Name (Affiliation)"

Attendance:

* Ajami, Abdel Karim Qualcomm Incorporated
* Akhmetov, Dmitry Intel Corporation
* Andersdotter, Amelia Sky UK Group
* Ansley, Carol Cox Communications Inc.
* Au, Kwok Shum Huawei Technologies Co., Ltd
* B, Hari Ram NXP Semiconductors
* Baek, SunHee LG ELECTRONICS
* Bankov, Dmitry IITP RAS
* baron, stephane Canon Research Centre France
* Bredewoud, Albert Broadcom Corporation
* Chemrov, Kirill IITP RAS
* CHERIAN, GEORGE Qualcomm Incorporated
* Chitrakar, Rojan Panasonic Asia Pacific Pte Ltd.
* Chung, Chulho SAMSUNG
* Coffey, John Realtek Semiconductor Corp.
* Das, Subir Peraton Labs
* Dong, Xiandong Xiaomi Inc.
* Duan, Ruchen SAMSUNG
* Fang, Yonggang Mediatek
* Fischer, Matthew Broadcom Corporation
* Ghosh, Chittabrata Facebook, Inc.
* Gu, Xiangxin Unisoc
* Haider, Muhammad Kumail Facebook
* Halasz, David Morse Micro
* Handte, Thomas Sony Corporation
* Hervieu, Lili Cable Television Laboratories Inc. (CableLabs)
* Ho, Duncan Qualcomm Incorporated
* Hsieh, Hung-Tao MediaTek Inc.
* Hsu, Ostrovsky Xiaomi Inc.
* Hu, Chunyu Facebook
* Huang, Po-Kai Intel Corporation
* Ibrahim, Ahmed Samsung Research America
* Jang, Insun LG ELECTRONICS
* Kakani, Naveen Qualcomm Incorporated
* Kamel, Mahmoud InterDigital, Inc.
* Kancherla, Sundeep Infineon Technologies
* Kim, Jeongki Ofinno
* kim, namyeong LG ELECTRONICS
* Kim, Sang Gook LG ELECTRONICS
* Kim, Sanghyun WILUS Inc
* Kim, Yongho Korea National University of Transportation
* Kim, Youhan Qualcomm Incorporated
* Klein, Arik Huawei Technologies Co., Ltd
* Ko, Geonjung WILUS Inc.
* Koundourakis, Michail Samsung Cambridge Solution Centre
* Lalam, Massinissa SAGEMCOM BROADBAND SAS
* Lanante, Leonardo Ofinno
* Lee, Wookbong SAMSUNG
* Levesque, Chris Qorvo
* Levy, Joseph InterDigital, Inc.
* Li, Yapu Guangdong OPPO Mobile Telecommunications Corp.,Ltd
* Lim, Dong Guk LG ELECTRONICS
* Lu, Liuming Guangdong OPPO Mobile Telecommunications Corp.,Ltd
* Luo, Chaoming Beijing OPPO telecommunications corp., ltd.
* Lyakh, Mikhail ON Semiconductor
* Ma, Li MediaTek Inc.
* Max, Sebastian Ericsson AB
* Montemurro, Michael Huawei Technologies Co., Ltd
* Montreuil, Leo Broadcom Corporation
* Moon, Juseong Korea National University of Transportation
* Ng, Boon Loong Samsung Research America
* Ouchi, Masatomo Canon
* Ozbakis, Basak VESTEL
* Palayur, Saju Maxlinear Inc
* Pare, Thomas MediaTek Inc.
* Park, Eunsung LG ELECTRONICS
* Patil, Abhishek Qualcomm Incorporated
* Pushkarna, Rajat Panasonic Asia Pacific Pte Ltd.
* Ratnam, Vishnu Samsung Research America
* Redlich, Oded Huawei Technologies Co., Ltd
* Rosdahl, Jon Qualcomm Technologies, Inc.
* Ryu, Kiseon Ofinno
* Schelstraete, Sigurd MaxLinear
* Shafin, Rubayet Samsung Research America
* Shilo, Shimi Huawei Technologies Co., Ltd
* Shirakawa, Atsushi SHARP CORPORATION
* Smith, Graham SR Technologies
* Sosack, Robert Molex Incorporated
* Srivatsa, Veena Synaptics
* SUH, JUNG HOON Huawei Technologies Co., Ltd
* Tanaka, Yusuke Sony Group Corporation
* Tian, Bin Qualcomm Incorporated
* Torab Jahromi, Payam Facebook
* Tsodik, Genadiy Huawei Technologies Co., Ltd
* Uln, Kiran Cypress Semiconductor Corporation
* Verenzuela, Daniel Sony Corporation
* VIGER, Pascal Canon Research Centre France
* Wang, Huizhao Quantenna Communications, Inc.
* Wang, Lei Futurewei Technologies
* Wang, Qi Apple, Inc.
* Wei, Dong NXP Semiconductors
* 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 Spreadtrum Communication USA Inc.
* Yu, Jian Huawei Technologies Co., Ltd
* Zhang, Yan NXP Semiconductors
* Zhou, Pei Guangdong OPPO Mobile Telecommunications Corp.,Ltd
1. Agenda.
	1. Agenda approved with unanimous consent.
2. Guidelines for CRs-Update [984r9](https://mentor.ieee.org/802.11/dcn/20/11-20-0984-09-00be-tgbe-teleconference-guidelines.docx)

Alfred goes through new guidelines for the CRs update. Some revision of the guidelines.

Discussion:

C: I think this looks good.

C: 1 week is too little for CRs. Typically, you have a core group of people that resolves it, and then it fails again because new people interact the second time.

A: Let’s keep 1 week and then let people vote in case they want more time.

C: I think the proposal makes sense. It’s up to the author to run a SP or not. Maybe authors decide to defer from SP because of this.

A: Let’s add a bullet to put a deadline to the author.

C: You can always bring a proposal back in a subsequent round of balloting.

C: I think one more run is reasonable. working asynchronously without any f2f makes discussion more difficult.

C: Note we have not run a ballot - we have only had comment collections for 802.11be.

C: Is there a way to schedule in other submission or does CR take precedance?

C: it's not mentioned the failure SP will be rejected automatically in one or two weeks, right?

A: True.

1. Technical Submissions**: CRs**
	1. [**1925r0**](https://mentor.ieee.org/802.11/dcn/21/11-21-1925-00-00be-cc36-cr-for-cids-5559-5560-5561.docx) **CR for CIDs 5559 5560 5561 Mahmoud Kamel [3 C]**

Mahmoud goes through his CRs.

Discussion: No discussion.

SP: Do you agree to resolve the following CIDs listed in 1925r0 and incorporate the text changes into the latest TGbe draft?

* 5559, 5560, 5561

Result: SP supported with no objection from the group.

* 1. [**1900r0**](https://mentor.ieee.org/802.11/dcn/21/11-21-1900-00-00be-cr-for-par-throughput-verification.pptx) **CR for PAR throughput verification Yiqing Li [1 C]**

Yiqing goes through her CR.

Discussion:

C: How many spatial streams are you using?

A: 8.

C: Do you have STR or NSTR?

A: I only consider STR cases.

C: Why is UL always better than DL?

A: Because of TX power.

SP: Do you agree to resolve the following CIDs listed in [1900r2](https://mentor.ieee.org/802.11/dcn/21/11-21-1900-02-00be-cr-for-par-throughput-verification.pptx) and incorporate the text changes into the latest TGbe draft?

* 7619

Result: SP supported with no objection from the group.

* 1. [**1933r0**](https://mentor.ieee.org/802.11/dcn/21/11-21-1933-00-00be-part-of-supported-eht-mcs-and-nss-set-field-cr-on-d1-0.doc) **Part of Supp. EHT MCS And NSS Set Field Bo Gong [12 C]**

Bo goes through the document.

Discussion:

C: At this table for 7052, you have Nss up to 8.

A: Yes, 16 Nss is part of R2.

SP: Do you agree to resolve the following CIDs listed in [1933r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1933-00-00be-part-of-supported-eht-mcs-and-nss-set-field-cr-on-d1-0.doc) and incorporate the text changes into the latest TGbe draft?

* 4970, 5783, 5784, 5785, 6368, 7048, 7049, 7050, 7051, 7052, 7053, 8172

Result: SP supported with no objection from the group.

1. Technical Submissions:
	1. [**1849r0**](https://mentor.ieee.org/802.11/dcn/21/11-21-1849-00-00be-bandwidth-signaling-for-control-frames-follow-up.pptx) **Bandwidth signaling for control frames-follow-up Sigurd Schelstraete**

Sigurd addresses concerns in a previous presentation regarding CW frame.

Discussion:

C: What do you mean by the additions to BW signaling? You mean rather beyond EHT R2.

A: I think in general if you look in the future we are going to have to make a more careful BW signaling mechanism.

***Out of time***

1. Adjourned at 12:00 ET.

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

Only MAC.

* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-1897-11-00be-minutes-for-tgbe-mac-teleconferences-in-nov-2021-to-jan-2022.docx>

# 11th Conf. Call: Dec 06 (19:00–21:00 ET)

Split PHY and MAC:

* PHY: <https://mentor.ieee.org/802.11/dcn/21/11-21-2008-01-00be-minutes-for-tgbe-phy-ad-hoc-cc-nov-2021-to-jan-2022.docx>
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-1897-11-00be-minutes-for-tgbe-mac-teleconferences-in-nov-2021-to-jan-2022.docx>

# 12th Conf. Call: Dec 08 (10:00–12:00 ET)

Only MAC.

* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-1897-11-00be-minutes-for-tgbe-mac-teleconferences-in-nov-2021-to-jan-2022.docx>

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

Only MAC.

* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-1897-11-00be-minutes-for-tgbe-mac-teleconferences-in-nov-2021-to-jan-2022.docx>

# 14th Conf. Call: Dec 13 (19:00–21:00 ET)

Split PHY and MAC:

* PHY: <https://mentor.ieee.org/802.11/dcn/21/11-21-2008-01-00be-minutes-for-tgbe-phy-ad-hoc-cc-nov-2021-to-jan-2022.docx>
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-1897-11-00be-minutes-for-tgbe-mac-teleconferences-in-nov-2021-to-jan-2022.docx>

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

1. The Chair, Alfred Asterjadhi (Qualcomm) calls the meeting to order at 10:01 ET. The agenda is found in [1775r14](https://mentor.ieee.org/802.11/dcn/21/11-21-1775-14-00be-nov-jan-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); 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

* 1. 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. **Nobody speaks/writes up.**
1. The Chair goes through the **Copyright Policy**: Participants are advised that
	1. 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;
	2. 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
	3. **Patent, Participation, Copyright and policy related subclause:** The Chair goes through the *Patent And Procedures* section in [1775r14](https://mentor.ieee.org/802.11/dcn/21/11-21-1775-14-00be-nov-jan-tgbe-teleconference-agenda.docx).
2. Attendance reminder.
	1. 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:

1) 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) and Alfred Asterjadhi (aasterja@qti.qualcomm.com)

Please ensure that the following information is listed correctly when joining the call:

"[voter status] First Name Last Name (Affiliation)"

Attendance:

* Abdelaal, Rana Broadcom Corporation
* AbidRabbu, Shaima' Istanbul Medipol University; Vestel
* Aboulmagd, Osama Huawei Technologies Co., Ltd
* Adachi, Tomoko TOSHIBA Corporation
* Adhikari, Shubhodeep Broadcom Corporation
* Agarwal, Peyush Broadcom Corporation
* Ajami, Abdel Karim Qualcomm Incorporated
* Akhmetov, Dmitry Intel Corporation
* Amalladinne, Vamsi Qualcomm Incorporated
* Ansley, Carol Cox Communications Inc.
* Au, Kwok Shum Huawei Technologies Co., Ltd
* Baek, SunHee LG ELECTRONICS
* baron, stephane Canon Research Centre France
* Barr, David MaxLinear
* Batra, Anuj Apple, Inc.
* Bhandaru, Nehru Broadcom Corporation
* Bredewoud, Albert Broadcom Corporation
* Cao, Rui NXP Semiconductors
* Carney, William Sony Group Corporation
* CHAN, YEE Facebook
* Chemrov, Kirill IITP RAS
* CHERIAN, GEORGE Qualcomm Incorporated
* Chitrakar, Rojan Panasonic Asia Pacific Pte Ltd.
* Choi, Jinsoo LG ELECTRONICS
* CHUN, JINYOUNG LG ELECTRONICS
* Das, Subir Peraton Labs
* Dash, Debashis Apple, Inc.
* Derham, Thomas Broadcom Corporation
* Dong, Xiandong Xiaomi Inc.
* Erceg, Vinko Broadcom Corporation
* Fang, Yonggang Mediatek
* Fischer, Matthew Broadcom Corporation
* Garg, Lalit Broadcom Corporation
* Gu, Xiangxin Unisoc
* Gupta, Binita Meta Platforms, Inc.
* Haider, Muhammad Kumail Facebook
* Halasz, David Morse Micro
* Han, Jonghun SAMSUNG
* Hart, Brian Cisco Systems, Inc.
* Hsieh, Hung-Tao MediaTek Inc.
* Hsu, Ostrovsky Xiaomi Inc.
* Hu, Chunyu Facebook
* Huang, Lei Guangdong OPPO Mobile Telecommunications Corp.,Ltd
* Huang, Po-Kai Intel Corporation
* Ibrahim, Ahmed Samsung Research America
* jiang, feng Apple Inc.
* Jiang, Jinjing Apple, Inc.
* Kakani, Naveen Qualcomm Incorporated
* Kamel, Mahmoud InterDigital, Inc.
* Kancherla, Sundeep Infineon Technologies
* Kandala, Srinivas SAMSUNG
* Kasher, Assaf Qualcomm Incorporated
* Kedem, Oren MaxLinear
* kim, namyeong LG ELECTRONICS
* Kim, Sang Gook LG ELECTRONICS
* Kim, Sanghyun WILUS Inc
* Kim, Youhan Qualcomm Incorporated
* Klein, Arik Huawei Technologies Co., Ltd
* Klimakov, Andrey Huawei Technologies Co., Ltd
* Kneckt, Jarkko Apple, Inc.
* Ko, Geonjung WILUS Inc.
* Koundourakis, Michail Samsung Cambridge Solution Centre
* Kumar, Manish Marvell Semiconductor, Inc.
* Lalam, Massinissa SAGEMCOM BROADBAND SAS
* Lanante, Leonardo Ofinno
* Lee, Hong Won LG ELECTRONICS
* Levesque, Chris Qorvo
* Levitsky, Ilya IITP RAS
* Li, Jialing Qualcomm Technologies, Inc.
* Li, Yapu Guangdong OPPO Mobile Telecommunications Corp.,Ltd
* Lim, Dong Guk LG ELECTRONICS
* Liu, Yong Apple, Inc.
* Loginov, Vyacheslav IITP RAS
* Lorgeoux, Mikael Canon Research Centre France
* Lou, Hanqing InterDigital, Inc.
* Lu, kaiying MediaTek Inc.
* Lu, Liuming Guangdong OPPO Mobile Telecommunications Corp.,Ltd
* Madpuwar, Girish Broadcom Corporation
* Malinen, Jouni Qualcomm Incorporated
* Max, Sebastian Ericsson AB
* McCann, Stephen Huawei Technologies Co., Ltd
* Memisoglu, Ebubekir Istanbul Medipol University; Vestel
* Moelker, Dignus-Jan Broadcom Corporation
* Montemurro, Michael Huawei Technologies Co., Ltd
* Montreuil, Leo Broadcom Corporation
* Motozuka, Hiroyuki Panasonic Corporation
* Naik, Gaurang Qualcomm Incorporated
* NANDAGOPALAN, SAI SHANKAR Synaptics
* Naribole, Sharan Apple, Inc.
* Nayak, Peshal Samsung Research America
* Nezou, Patrice Canon Research Centre France
* Ng, Boon Loong Samsung Research America
* Ouchi, Masatomo Canon
* OZDEN ZENGIN, OZLEM Vestel
* Palayur, Saju Maxlinear Inc
* Palm, Stephen Broadcom Corporation
* Pare, Thomas MediaTek Inc.
* Park, Eunsung LG ELECTRONICS
* Patil, Abhishek Qualcomm Incorporated
* Patwardhan, Gaurav Hewlett Packard Enterprise
* Petry, Brian Broadcom Corporation
* porat, ron Broadcom Corporation
* Pushkarna, Rajat Panasonic Asia Pacific Pte Ltd.
* Rafique, Saira Istanbul Medipol University ; VESTEL
* Ratnam, Vishnu Samsung Research America
* Roder, Patricia IEEE STAFF
* Rosdahl, Jon Qualcomm Technologies, Inc.
* Ryu, Kiseon Ofinno
* Schelstraete, Sigurd MaxLinear
* Schiessl, Sebastian Apple, Inc.
* Sevin, Julien Canon Research Centre France
* Shafin, Rubayet Samsung Research America
* Shah, Kunal Itron Inc.
* Shilo, Shimi Huawei Technologies Co., Ltd
* Strauch, Paul Qualcomm Incorporated
* SUH, JUNG HOON Huawei Technologies Co., Ltd
* Sun, Bo ZTE Corporation
* Sun, Li-Hsiang Sony Corporation
* Sun, Yanjun Qualcomm Incorporated
* Taori, Rakesh Infineon Technologies
* Torab Jahromi, Payam Facebook
* Tsodik, Genadiy Huawei Technologies Co., Ltd
* Varshney, Prabodh Nokia
* Verma, Lochan Apple, Inc.
* Verma, Sindhu Broadcom Corporation
* Vermani, Sameer Qualcomm Incorporated
* VIGER, Pascal Canon Research Centre France
* Wang, Huizhao Quantenna Communications, Inc.
* 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
* Yamada, Ryota SHARP CORPORATION
* Yang, Jay Nokia
* Yang, Steve TS MediaTek Inc.
* Yano, Kazuto Advanced Telecommunications Research Institute International (ATR)
* Yee, James MediaTek Inc.
* Yi, Yongjiang Spreadtrum Communication USA Inc.
* Young, Christopher Broadcom Corporation
* Yu, Jian Huawei Technologies Co., Ltd
* Zeng, Ruochen Apple, Inc.
* Zhou, Pei Guangdong OPPO Mobile Telecommunications Corp.,Ltd
* Zia, Muhammad Furqan VESTEL; Koc University
1. Agenda.
	1. Approved with unanimous consent.
2. Announcements: None.
3. Tgbe Editor: Update
	1. Edward gives an update on the comment resolution.
4. Motions: [1982r54](https://mentor.ieee.org/802.11/dcn/20/11-20-1982-54-00be-tgbe-motions-list-for-teleconferences-part-2.pptx)
	1. **Motion 275 (MAC-1)**

Move to approve resolutions to the CIDs:

* 4385, 4462, 4463, 4464, 5035, 5036, 5037, 5062, 5218, ~~5258~~, 5690, 5691, 5838, 5925, 5989, 6099, 6209, 6298, 6299, 6491, 6492, 6671, 7373, 7374, 7443, 7820, 7854 in [1562r6](https://mentor.ieee.org/802.11/dcn/21/11-21-1562-06-00be-cc36-resolution-for-cids-for-35-3-9-2.docx) *[26 CIDs]*
* 6155, 4091, 7675, 4804, 7483, 6156, 5652 6117, 4172, 6119, 7526 in [1704r2](https://mentor.ieee.org/802.11/dcn/21/11-21-1704-02-00be-cc36-resolution-for-cids-related-to-nsep-3-1-3-4-c-3.docx) *[11 CIDs]*
* 6254 in [1714r3](https://mentor.ieee.org/802.11/dcn/21/11-21-1714-03-00be-cc36-cr-for-traffic-indication-in-multiple-bssid-set.docx) *[1 CID]*
* 7812 in [1176r9](https://mentor.ieee.org/802.11/dcn/21/11-21-1176-09-00be-cc36-resolution-for-cids-related-to-ml-advertisement-part-2.docx) *[1 CID]*
* 6050, 6052, 6934 in [1657r3](https://mentor.ieee.org/802.11/dcn/21/11-21-1657-03-00be-tgbe-cc36-misc-comment-resolutions.docx) *[3 CIDs]*

and incorporate the text changes into the latest TGbe draft.

Move: Mike Montemurro Second: Subir Das

Discussion: No discussion.

Result: Approved with unanimous consent.

* 1. **Motion 276 (MAC-2)**

Move to approve resolutions to the CIDs:

* 7437, 7438, 5594, 6229, 5321, 4259, 6010, 4258, 6231, 7806, 6232, 6970, 7700, 8275, 5122, 8163, 8276, 5123, 8164, 8277, 4099, 6233, 4260, 5368 in [1710r3](https://mentor.ieee.org/802.11/dcn/21/11-21-1710-03-00be-cc36-resolution-for-cids-for-9-4-2.docx) *[24 CIDs]*
* 6687, 4740, 4045, 4741, 4046 in [1086r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1086-01-00be-cc36-resolution-for-cids-in-clause-35-3-4-3.docx) *[5 CIDs]*

and incorporate the text changes into the latest TGbe draft.

Move: Stephen McCann Second: Subir Das

Discussion: No discussion.

Result: Approved with unanimous consent.

* 1. **Motion 277 (PHY-1)**

Move to approve resolutions to the CIDs:

* 4575, 5492, 6826, 7296, 5493, 5494, 6828, 4576, 6827, 7292, 6829, 7303, 7010, 7288, 7290, 7295, 7297, 7298, 7291, 7293, 7289, 7294, 7299, 7300, 7302, 7304, 7305, 7306, 7657, 7301 in [1614r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1614-01-00be-cr-for-36-3-13-5-segment-parser.docx) *[30 CIDs]*
* 5421 in [1513r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1513-01-00be-resolution-for-cid-5421.doc) *[1 CIDs]*
* 4636, 4637, 4638, 4680, 4790, 5401, 5402, 5403, 5404, 5463, 6782, 7132, 7133 in [1677r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1677-01-00be-cr-for-cids-on-36-3-2-1.docx) *[13 CIDs]*
* 4591, 4654, 4688, 4802, 5092, 5400, 5468, 5469, 6899 in [1712r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1712-01-00be-cr-for-cc36-mu-mimo.docx) *[9 CIDs]*
* 5496 in [1578r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1578-01-00be-cc36-cr-on-annex-z-320mhz-example.doc) *[1 CID]*

and incorporate the text changes into the latest TGbe draft.

Move: Yan Xin Second: Bin Tian

Discussion: No discussion.

Result: Approved with unanimous consent.

* 1. **Motion 278 (PHY-2)**

Move to approve resolutions to the CIDs:

* 5532, 8141, 4911, 5569, 6903, 4694, 5019 in [1693r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1693-01-00be-d1-0-comment-resolution-for-non-ht-duplicate-transmission.docx) *[7 CIDs]*
* 7252 in [1694r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1694-01-00be-d1-0-comment-resolution-for-ofdm-modulation.docx) *[1 CID]*
* 4665, 6902 in [1696r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1696-01-00be-cc36-cr-for-cid-4665-and-6902.docx) *[2 CIDs]*
* 5471, 8095, 4619, 4620, 4547, 5472, 5527, 4549 in [1733r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1733-01-00be-cc36-cr-on-ppdu-encoding-process-part-2.docx) *[8 CIDs]*
* 7009 in [1725r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1725-00-00be-cc36-cr-for-eht-service-field.docx) *[1 CID]*

and incorporate the text changes into the latest TGbe draft.

Move: Ross Jian Yu Second: Rui Cao

Discussion: No discussion.

Result: Approved with unanimous consent.

* 1. **Motion 279 (PHY-3)**

Move to approve resolutions to the CIDs:

* 7004, 7239, 7240, 7241, 7753 in [1726r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1726-00-00be-cc36-cr-for-the-eht-phy-data-scrambler-and-descrambler.docx) *[5 CIDs]*

and incorporate the text changes into the latest TGbe draft.

Move: Bin Tian Second: Ross Jian Yu

Discussion: No discussion.

Result: Approved with unanimous consent.

* 1. **Motion 280 (Joint-1)**

Move to approve resolutions to the CIDs:

* 5559, 5560, 5561 in [1925r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1925-00-00be-cc36-cr-for-cids-5559-5560-5561.docx) *[3 CIDs]*
* 7619 in slide 2 of [1900r2](https://mentor.ieee.org/802.11/dcn/21/11-21-1900-02-00be-cr-for-par-throughput-verification.pptx) *[1 CID]*
* 4970, 5783, 5784, 5785, 6368, 7048, 7049, 7050, 7051, 7052, 7053, 8172 in [1933r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1933-00-00be-part-of-supported-eht-mcs-and-nss-set-field-cr-on-d1-0.doc) *[12 CIDs]*

and incorporate the text changes into the latest TGbe draft.

Move: Stephen McCann Second: Ross Jian Yu

Discussion: No discussion.

Result: Approved with unanimous consent.

* 1. **Motion 281 (No consensus)**

Move to approve “Rejected” resolutions to the CIDs:

* 6184, 5191 as shown in [1018r26](https://mentor.ieee.org/802.11/dcn/21/11-21-1018-26-00be-ieee-802-11be-cc36-comments.xlsx) *[2 CIDs]*

Move: Mike Montemurro Second: Stephen McCann

Discussion:

C: During the discussion the recommendation was to resolve them with “lack of consensus” reason.

Result: Approved with unanimous consent.

* 1. **Motion 282 (Withdrawal)**

Move to approve “Rejected” resolutions to the CIDs:

* 5098

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

Move: Mike Montemurro Second: Jon Rosdahl

Discussion: No discussion.

Result: Approved with unanimous consent.

* 1. **Motion 283**

Move to approve resolutions to the CIDs:

* 7470, 4161, 6337, 6338, 4490, 4435, 6745, 4089, 4784 in [1698r2](https://mentor.ieee.org/802.11/dcn/21/11-21-1698-02-00be-cc36-cr-for-r-twt-quieting-rules.docx) *[9 CIDs]*

and incorporate the text changes into the latest TGbe draft.

Move: George Cherian Second: Youhan Kim

Discussion:

C: This is related to r-TWT feature. We have agreed that r-TWT should be optional. But these changes makes the feature mandatory. This makes the spec inconsistent since in other places of the document the feature is optional.

C: I think this does not make the r-TWT mandatory. The resolutions provide a clarification.

C: This is not a clarification but describes a new behaviour. At the minimum you need to add a sentence to keep the original description.

C: I support that this needs to be clarified.

Result: Y/N/A/No-answer: 45/58/33/61 🡪 Preliminary fails.

1. Technical Submissions**: CRs**
	1. [**1942r0**](https://mentor.ieee.org/802.11/dcn/21/11-21-1942-00-00be-cc36-cr-for-14-cids-in-clause-35-5-2.docx) **CC36 CR for 14 CIDs in Clause 35.5.2 Zinan Lin [14C]**

Zinan goes through the document. Some discussion.

* 1. ***Amend the agenda and present the next item now. No objection from the group.***
	2. [**1700r0**](https://mentor.ieee.org/802.11/dcn/21/11-21-1700-00-00be-cr-puncturing.docx) **CR puncturing Yanjun Sun [18C]**

Yanjun goes through the document. No discussion.

SP:

Do you agree to resolve the following CIDs listed in 1700r1 and incorporate the text changes into the latest TGbe draft?

* 7880, 5959, 4181, 7909, 5555, 6685, 5556, 7910, 5206, 7791, 4167, 7861, 7862, 4168, 4169, 5111, 7364, 7091

Discussion: None.

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

* 1. ***Amend the agenda and run the SP for 1942 now. No objection from the group.***
	2. [**1942r2**](https://mentor.ieee.org/802.11/dcn/21/11-21-1942-02-00be-cc36-cr-for-14-cids-in-clause-35-5-2.docx) **CC36 CR for 14 CIDs in Clause 35.5.2 Zinan Lin [14C]**

There is a typo update compared to previous revision.

SP: Do you agree to resolve the following CIDs listed in 1700r1 and incorporate the text changes into the latest TGbe draft?

* 4488, 5453, 5803, 5853, 7068, 7069, 7070, 7071, 7674, 7919, 7920, 7922, 7925, and 8363

Discussion: None.

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

1. Technical Submissions:
	1. [**1977r0**](https://mentor.ieee.org/802.11/dcn/21/11-21-1977-00-00be-ndpa-for-future-amendments.pptx) **NDPA for Future Amendments\* Junghoon Suh**

Summary: The two first bits in the Sounding Dial Token in NDPA has been used to indicate amended versions of the NDPA frame. The authors have identified that we have future needs for amending the NDPA frame and further bits are required. The authors propose to use the sounding dial token being 00111111 to signal a new NDPA frame.

Discussion:

C: We should not take TGbf considerations into account, our priority should be our ideas.

***Out of time.***

1. AoB: Chair wishes happy holidays!
2. Adjourn at 12:00.

# 16th Conf. Call: Dec 16 (10:00–12:00 ET)

Only MAC.

* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-1897-11-00be-minutes-for-tgbe-mac-teleconferences-in-nov-2021-to-jan-2022.docx>

# 17th Conf. Call: Dec 16 (10:00–12:00 ET)

Split PHY and MAC:

* PHY: <https://mentor.ieee.org/802.11/dcn/21/11-21-2008-01-00be-minutes-for-tgbe-phy-ad-hoc-cc-nov-2021-to-jan-2022.docx>
* MAC: <https://mentor.ieee.org/802.11/dcn/21/11-21-1897-11-00be-minutes-for-tgbe-mac-teleconferences-in-nov-2021-to-jan-2022.docx>

# 18th Conf. Call: Jan 05 (10:00–12:00 ET)

1. The Chair, Alfred Asterjadhi (Qualcomm) calls the meeting to order at 10:01 ET. The agenda is found in [1775r18](https://mentor.ieee.org/802.11/dcn/21/11-21-1775-18-00be-nov-jan-tgbe-teleconference-agenda.docx). Due to some technical difficulties we resess until 10:05 ET.
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); 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

* 1. 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. **Nobody speaks/writes up.**
1. The Chair goes through the **Copyright Policy**: Participants are advised that
	1. 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;
	2. 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
	3. **Patent, Participation, Copyright and policy related subclause:** The Chair goes through the *Patent And Procedures* section in [1775r18](https://mentor.ieee.org/802.11/dcn/21/11-21-1775-18-00be-nov-jan-tgbe-teleconference-agenda.docx).
2. Attendance reminder.
	1. 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:

1) 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) and Alfred Asterjadhi (aasterja@qti.qualcomm.com)

Please ensure that the following information is listed correctly when joining the call:

"[voter status] First Name Last Name (Affiliation)"

Participants:

* Aboulmagd, Osama Huawei Technologies Co., Ltd
* Ajami, Abdel Karim Qualcomm Incorporated
* Akhmetov, Dmitry Intel Corporation
* Andersdotter, Amelia Sky UK Group
* Asterjadhi, Alfred Qualcomm Incorporated
* Au, Kwok Shum Huawei Technologies Co., Ltd
* B, Hari Ram NXP Semiconductors
* Bredewoud, Albert Broadcom Corporation
* Carney, William Sony Group Corporation
* Chitrakar, Rojan Panasonic Asia Pacific Pte Ltd.
* Chu, Liwen NXP Semiconductors
* CHUN, JINYOUNG LG ELECTRONICS
* Chung, Chulho SAMSUNG
* Coffey, John Realtek Semiconductor Corp.
* Das, Subir Peraton Labs
* Dogukan, Ali Vestel
* Dong, Xiandong Xiaomi Inc.
* Duan, Ruchen SAMSUNG
* Fang, Yonggang Mediatek
* feng, Shuling MediaTek Inc.
* Fischer, Matthew Broadcom Corporation
* Gu, Xiangxin Unisoc
* GUIGNARD, Romain Canon Research Centre France
* Gupta, Binita Meta Platforms, Inc.
* Han, Jonghun SAMSUNG
* Han, Zhiqiang ZTE Corporation
* Handte, Thomas Sony Corporation
* Hervieu, Lili Cable Television Laboratories Inc. (CableLabs)
* Ho, Duncan Qualcomm Incorporated
* Hsieh, Hung-Tao MediaTek Inc.
* Hsu, Ostrovsky Xiaomi Inc.
* Huang, Lei Guangdong OPPO Mobile Telecommunications Corp.,Ltd
* Ibrahim, Ahmed Samsung Research America
* Kakani, Naveen Qualcomm Incorporated
* Kamel, Mahmoud InterDigital, Inc.
* Kancherla, Sundeep Infineon Technologies
* Kedem, Oren MaxLinear
* Khorov, Evgeny IITP RAS
* Kim, Jeongki Ofinno
* Kim, Myeong-Jin SAMSUNG
* kim, namyeong LG ELECTRONICS
* Kim, Sang Gook LG ELECTRONICS
* Kim, Sanghyun WILUS Inc
* Kim, Yongho Korea National University of Transportation
* Kim, Youhan Qualcomm Incorporated
* Klein, Arik Huawei Technologies Co., Ltd
* Kneckt, Jarkko Apple, Inc.
* Ko, Geonjung WILUS Inc.
* Lalam, Massinissa SAGEMCOM BROADBAND SAS
* Lee, Wookbong SAMSUNG
* Levesque, Chris Qorvo
* Levy, Joseph InterDigital, Inc.
* Li, Jialing Qualcomm Technologies, Inc.
* Lim, Dong Guk LG ELECTRONICS
* Lin, Zinan InterDigital, Inc.
* Liu, Jianhan MediaTek Inc.
* Lorgeoux, Mikael Canon Research Centre France
* Lou, Hanqing InterDigital, Inc.
* Lu, Liuming Guangdong OPPO Mobile Telecommunications Corp.,Ltd
* Montemurro, Michael Huawei Technologies Co., Ltd
* Montreuil, Leo Broadcom Corporation
* Moon, Juseong Korea National University of Transportation
* Naik, Gaurang Qualcomm Incorporated
* NANDAGOPALAN, SAI SHANKAR Synaptics
* Nayak, Peshal Samsung Research America
* Nezou, Patrice Canon Research Centre France
* Ng, Boon Loong Samsung Research America
* Ouchi, Masatomo Canon
* OZDEN ZENGIN, OZLEM Vestel
* Palayur, Saju Maxlinear Inc
* Pare, Thomas MediaTek Inc.
* Park, Eunsung LG ELECTRONICS
* Patil, Abhishek Qualcomm Incorporated
* Patwardhan, Gaurav Hewlett Packard Enterprise
* Pushkarna, Rajat Panasonic Asia Pacific Pte Ltd.
* Ratnam, Vishnu Samsung Research America
* Rosdahl, Jon Qualcomm Technologies, Inc.
* Ryu, Kiseon Ofinno
* Schelstraete, Sigurd MaxLinear
* Sethi, Ankit NXP Semiconductors
* Sevin, Julien Canon Research Centre France
* Shilo, Shimi Huawei Technologies Co., Ltd
* Shirakawa, Atsushi SHARP CORPORATION
* Srivatsa, Veena Synaptics
* 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
* Sundman, Dennis Ericsson AB
* Taori, Rakesh Infineon Technologies
* Tian, Bin Qualcomm Incorporated
* Torab Jahromi, Payam Facebook
* Tsodik, Genadiy Huawei Technologies Co., Ltd
* Tugtekin, Omer Vestel Electronics Corp.
* Varshney, Prabodh Nokia
* 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, Tianyu Apple, Inc.
* 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 Spreadtrum Communication USA Inc.
* Yu, Jian Huawei Technologies Co., Ltd
* Zhang, Jiayi Ofinno
* Zhang, Yan NXP Semiconductors
* Zhou, Lei H3C Technologies Co., Limited
* Zhou, Pei Guangdong OPPO Mobile Telecommunications Corp.,Ltd
1. Announcements: None. The Chair wishes the group a happy new year!
2. Agenda.
	1. Can you add a straw poll for 1977r0. It was presented several weeks ago, but we didn’t have time to run the SP.
	2. Agenda approved with unanimous consent.
3. Teleconference Plan:
	1. Jan 26- Jan 27, can you consider only having one of them? They are within 24 hours and in middle of the night.
	2. I can make a suggestion so that no SPs are run on one of them.
4. Technical Submissions: CRs
	1. [1990r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1990-00-00be-simulation-evaluation-of-restricted-twt.pptx) Simulation Evaluation of Restricted TWT M. K. Haider [1 CID]

Discussion:

C: Several comments regarding simulation setup and assumptions.

C: This simulation does in fact not really compare r-TWT with HCCA, which is what the comment asks for.

A: Yes this is correct.

SP: Do you agree to resolve the following CIDs?

* 6497 with the following resolution:
	+ “Revised. The completion of the r-TWT specification is undergoing. Since D1.0, several contributions have been made and proposed changes are incorporated into the latest D1.31, e.g. 11-21/462, 11-21/683, 11-21/1224. Simulation work is progressing and initial results in 11-21/1990.”
	1. [2019r0](https://mentor.ieee.org/802.11/dcn/21/11-21-2019-00-00be-cc36-cr-for-cid-5675-7793.docx) CR for CID 5675 7793 Zinan Lin [2 CIDs]

Zinan presents the CRs. Some online modifications.

1. Technical Submissions:
	1. [1977r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1977-00-00be-ndpa-for-future-amendments.pptx) NDPA for Future Amendments Junghoon Suh

SP: Which option do you prefer?

* Option 1
* Option 1-A
* Option 1-B
* Option 2
* Option 2-A
* Resolve it in 11bf
* Need further study
* Abstain

Discussion:

C: I don’t know how to vote because I don’t have all the information.

Result:

* Option 1 1
* Option 1-A 16
* Option 1-B 1
* Option 2 3
* Option 2-A 0
* Resolve it in 11bf 23
* Need further study 33
* Abstain 28
1. Adjourn at 12:03.