IEEE P802.11  
Wireless LANs

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| Minutes for TGbe MAC Ad-Hoc teleconferences in May and July 2021 | | | | |
| Date: 2021-05-19 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Liwen Chu | NXP |  |  |  |
| Jeongki Kim | Self |  |  |  |
|  |  |  |  |  |

Abstract

This document contains the meeting minutes for the TGbe MAC ad hoc teleconferences held in May 2021 and July 2021.

Revisions:

* Rev0: Added the minutes from the telephone conferences held on May 19.

**Wednesday 19 May 2021, 10:00am – 12:00pm ET (TGbe MAC ad hoc conference call)**

Chairman: Jeongki Kim (Self)

Secretary: Liwen Chu (NXP)

This meeting took place using a webex session.

**Introduction**

1. The Chair (Jeongki, Self) calls the meeting to order at 10:02am EDT. The Chair introduces himself and the Secretary, Liwen (NXP)
2. The Chair goes through the 802 and 802.11 IPR policy and procedures and asks if there is anyone that is aware of any potentially essential patents.
   1. Nobody responds.
3. The Chair goes through the IEEE copyright policy.
4. The Chair recommends using IMAT for recording the attendance.
   * Please record your attendance during the conference call by using the IMAT system:
     1. 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 Liwen Chu ([liwen.chu@nxp.com](mailto:liwen.chu@nxp.com)) and Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))
5. The Chair asked whether there is comment about agenda in 11-21/785r4. Several changes are made per the comment. The modified agenda was approved.

**Recorded attendance through Imat and e-mail:**

**Submissions**

1. [80r7](https://mentor.ieee.org/802.11/dcn/21/11-21-0080-07-00be-twt-for-mld.docx) TWT for MLD Ming Gan [SP 10’]

Ming goes through the changes of the new version. Several questions are raised.

Discussion:

C: why same link bitmap in TWT request and response?

A: the TWT negotiation just negotiates the start time etc for simplifing the procedure.

C: link ID bitmap is new. How link ID bitmap is established?

A: link ID bitmap is not new. Examples about how to use it exist in the document.

C: the figure should clarify that the TWT agreements in different links should be indepent and link specific.

A: agree.

C: a clean version should be uploaded.

A: will upload a clean version.

SP:

* Do you agree to incorporate the proposed changes in 11-21/80r8 to the latest TGbe draft?

60Y, 14N, 32A.

1. [462r9](https://mentor.ieee.org/802.11/dcn/21/11-21-0462-09-00be-pdt-mac-restricted-twt-tbds-crs-part1.docx) PDT-MAC-Restricted-TWT-TBDs-CRs-Part1 Chunyu Hu [SP 10’]

Chunyu announced no changes since the last meeting.

SP

**Do you support to incorporate the proposed draft text in this document 11-21/462r9, to the latest TGbe Draft?**

No objection

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1. 514r9 CC34 Comment Resolution for Sync PPDU start time Dmitry Akhmetov [SP]

Dmity goes through the changes of the new version

Discussion:

C: Please highlight the changes.

A: the Tx time difference of 4us instead of slot time is added.

C: P14, bullet and number exist. Editor may be confused.

A: I can remove the dish.

C: this may create higher collision.

C: If you go with 4 us, collision may happen.

A: PIFS recovery already has same issue. This should be fine.

SP

Do you support to incorporate the changes proposed by the following CIDs in 11/0514r10:1439, 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.

53Y, 4N, 41A

1. [696r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0696-00-00be-pdt-mac-spec-text-for-motion-150-sp-372.docx) PDT-MAC-spec-text-for-motion-150\_SP-372 Abhishek Patil [15’]

Discussion:

C: AP of AP MLD will support legacy STAs. The legacy fragmentation should be supported in this case.

C: Why is the baseline feature disallowed?

A: fragmentation is not good in MLD.

C: it is better to provide simulation result.

C: change ”fragmentation” to ”non-dynamic fragmentation”.

A: ok.

SP

**Do you support to incorporate the proposed changes in 11-21/696r2, to the latest TGbe draft?**

65Y, 9N, 31A

1. [228r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0228-01-00be-legacy-addressing-in-mlo.pptx) Legacy Addressing in MLO Rojan Chitrakar [30’

The auther goes through the slides that discussed the MLO addressing issues from a legacy STA’s perspectives.

Discussion:

C: the affiliated AP does the proxy for the legacy STAs. B1 change may have some issue and need to check further.

A: I use B0.

C: It is even worse.

C: I agree that the affiliated AP does the proxy for the legacy STAs. It is not clear that how ARP/PARP works.

A: AP MLD will be the bridge.

The SP was deferred

1. [240r6](https://mentor.ieee.org/802.11/dcn/21/11-21-0240-06-00be-cc34-resolution-for-cids-related-to-tdls-handling.docx) CC34 resolution for CIDs related to TDLS handling Abhishek Patil [30’]

The author goes through the document.

The SP was deferred

The chair asked whether there are any other businesses before adjourning the meeting. No response was received.

The teleconference was adjourned at 12:00pm

**Monday 25 January 2021, 10:00am – 12:00pm ET (TGbe MAC ad hoc conference call)**

Chairman: Jeongki Kim (LG Electronics)

Secretary: Liwen Chu (NXP)

This meeting took place using a webex session.

**Introduction**

1. The Chair (Jeongki, LG) calls the meeting to order at 10:05am EDT. The Chair introduces himself and the Secretary, Liwen (NXP)
2. The Chair goes through the 802 and 802.11 IPR policy and procedures and asks if there is anyone that is aware of any potentially essential patents.
   1. Nobody responds.
3. The Chair goes through the IEEE copyright policy.
4. The Chair recommends using IMAT for recording the attendance.
   * Please record your attendance during the conference call by using the IMAT system:
     1. 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 Liwen Chu ([liwen.chu@nxp.com](mailto:liwen.chu@nxp.com)) and Jeongki Kim ([jeongki.kim@lge.com](mailto:jeongki.kim@lge.com))
5. The Chair asked whether there is comment about agenda in 11-20/1917r11. The revisions of some contributions were updated per the request. The modified agenda was approved.

**Recorded attendance through Imat and e-mail:**

|  |  |  |  |
| --- | --- | --- | --- |
| TGbe (MAC) | 1/25 | Ansley, Carol | IEEE member / Self Employed |
| TGbe (MAC) | 1/25 | Asterjadhi, Alfred | Qualcomm Incorporated |
| TGbe (MAC) | 1/25 | Baek, SunHee | LG ELECTRONICS |
| TGbe (MAC) | 1/25 | Bankov, Dmitry | IITP RAS |
| TGbe (MAC) | 1/25 | baron, stephane | Canon Research Centre France |
| TGbe (MAC) | 1/25 | Bravo, Daniel | Intel Corporation |
| TGbe (MAC) | 1/25 | Bredewoud, Albert | Broadcom Corporation |
| TGbe (MAC) | 1/25 | Cariou, Laurent | Intel Corporation |
| TGbe (MAC) | 1/25 | CHAN, YEE | Facebook |
| TGbe (MAC) | 1/25 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 1/25 | Chu, Liwen | NXP Semiconductors |
| TGbe (MAC) | 1/25 | Coffey, John | Realtek Semiconductor Corp. |
| TGbe (MAC) | 1/25 | Das, Dibakar | Intel Corporation |
| TGbe (MAC) | 1/25 | Das, Subir | Perspecta Labs Inc. |
| TGbe (MAC) | 1/25 | Derham, Thomas | Broadcom Corporation |
| TGbe (MAC) | 1/25 | de Vegt, Rolf | Qualcomm Incorporated |
| TGbe (MAC) | 1/25 | Dong, Xiandong | Xiaomi Inc. |
| TGbe (MAC) | 1/25 | Erceg, Vinko | Broadcom Corporation |
| TGbe (MAC) | 1/25 | Fischer, Matthew | Broadcom Corporation |
| TGbe (MAC) | 1/25 | Ghosh, Chittabrata | Intel Corporation |
| TGbe (MAC) | 1/25 | Gu, Xiangxin | Unisoc |
| TGbe (MAC) | 1/25 | GUIGNARD, Romain | Canon Research Centre France |
| TGbe (MAC) | 1/25 | Han, Zhiqiang | ZTE Corporation |
| TGbe (MAC) | 1/25 | Handte, Thomas | Sony Corporation |
| TGbe (MAC) | 1/25 | Hervieu, Lili | Cable Television Laboratories Inc. (CableLabs) |
| TGbe (MAC) | 1/25 | Ho, Duncan | Qualcomm Incorporated |
| TGbe (MAC) | 1/25 | Hong, Hanseul | WILUS Inc. |
| TGbe (MAC) | 1/25 | Hu, Chunyu | Facebook |
| TGbe (MAC) | 1/25 | Huang, Po-Kai | Intel Corporation |
| TGbe (MAC) | 1/25 | Inohiza, Hirohiko | Canon |
| TGbe (MAC) | 1/25 | Ji, Chenhe | Huawei Technologies Co. Ltd |
| TGbe (MAC) | 1/25 | Kain, Carl | USDoT |
| TGbe (MAC) | 1/25 | Kakani, Naveen | Qualcomm Incorporated |
| TGbe (MAC) | 1/25 | kamath, Manoj | Broadcom Corporation |
| TGbe (MAC) | 1/25 | Kandala, Srinivas | SAMSUNG |
| TGbe (MAC) | 1/25 | Kedem, Oren | Huawei Technologies Co. Ltd |
| TGbe (MAC) | 1/25 | kim, namyeong | LG ELECTRONICS |
| TGbe (MAC) | 1/25 | Kim, Sang Gook | LG ELECTRONICS |
| TGbe (MAC) | 1/25 | Kim, Sanghyun | WILUS Inc |
| TGbe (MAC) | 1/25 | Kim, Yongho | Korea National University of Transportation |
| TGbe (MAC) | 1/25 | Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) |
| TGbe (MAC) | 1/25 | Klein, Arik | Huawei Technologies Co. Ltd |
| TGbe (MAC) | 1/25 | Kneckt, Jarkko | Apple, Inc. |
| TGbe (MAC) | 1/25 | Ko, Geonjung | WILUS Inc. |
| TGbe (MAC) | 1/25 | Kwon, Young Hoon | NXP Semiconductors |
| TGbe (MAC) | 1/25 | Lalam, Massinissa | SAGEMCOM BROADBAND SAS |
| TGbe (MAC) | 1/25 | Levitsky, Ilya | IITP RAS |
| TGbe (MAC) | 1/25 | Levy, Joseph | InterDigital, Inc. |
| TGbe (MAC) | 1/25 | Li, Yiqing | Huawei Technologies Co. Ltd |
| TGbe (MAC) | 1/25 | Li, Yunbo | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 1/25 | Liu, Yong | Apple, Inc. |
| TGbe (MAC) | 1/25 | Lou, Hanqing | InterDigital, Inc. |
| TGbe (MAC) | 1/25 | Lu, kaiying | MediaTek Inc. |
| TGbe (MAC) | 1/25 | Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbe (MAC) | 1/25 | Lumbatis, Kurt | CommScope, Inc. |
| TGbe (MAC) | 1/25 | Martinez Vazquez, Marcos | MaxLinear Corp |
| TGbe (MAC) | 1/25 | Max, Sebastian | Ericsson AB |
| TGbe (MAC) | 1/25 | McCann, Stephen | Huawei Technologies Co.,  Ltd |
| TGbe (MAC) | 1/25 | Montemurro, Michael | Huawei Technologies Co. Ltd |
| TGbe (MAC) | 1/25 | NANDAGOPALAN, SAI SHANKAR | Cypress Semiconductor Corporation |
| TGbe (MAC) | 1/25 | Nezou, Patrice | Canon Research Centre France |
| TGbe (MAC) | 1/25 | Ng, Boon Loong | Samsung Research America |
| TGbe (MAC) | 1/25 | Palayur, Saju | Maxlinear Inc |
| TGbe (MAC) | 1/25 | Park, Minyoung | Intel Corporation |
| TGbe (MAC) | 1/25 | Patil, Abhishek | Qualcomm Incorporated |
| TGbe (MAC) | 1/25 | Patwardhan, Gaurav | Hewlett Packard Enterprise |
| TGbe (MAC) | 1/25 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 1/25 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbe (MAC) | 1/25 | Reshef, Ehud | Intel Corporation |
| TGbe (MAC) | 1/25 | RISON, Mark | Samsung Cambridge Solution Centre |
| TGbe (MAC) | 1/25 | Rosdahl, Jon | Qualcomm Technologies, Inc. |
| TGbe (MAC) | 1/25 | Sedin, Jonas | Ericsson AB |
| TGbe (MAC) | 1/25 | Sevin, Julien | Canon Research Centre France |
| TGbe (MAC) | 1/25 | Shaari, Firas | Comcast |
| TGbe (MAC) | 1/25 | Solaija, Muhammad Sohaib | Istanbul Medipol University; Vestel |
| TGbe (MAC) | 1/25 | Sun, Li-Hsiang | Sony Corporation |
| TGbe (MAC) | 1/25 | Tolpin, Alexander | Intel Corporation |
| TGbe (MAC) | 1/25 | Torab Jahromi, Payam | Facebook |
| TGbe (MAC) | 1/25 | Verma, Sindhu | Broadcom Corporation |
| TGbe (MAC) | 1/25 | VIGER, Pascal | Canon Research Centre France |
| TGbe (MAC) | 1/25 | Wang, Huizhao | Quantenna Communications, Inc. |
| TGbe (MAC) | 1/25 | Wang, Lei | Futurewei Technologies |
| TGbe (MAC) | 1/25 | Wang, Qi | Apple, Inc. |
| TGbe (MAC) | 1/25 | Wullert, John | Perspecta Labs |
| TGbe (MAC) | 1/25 | Xiao, Bo | ZTE Corporation |
| TGbe (MAC) | 1/25 | Yang, Jay | Nokia |
| TGbe (MAC) | 1/25 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbe (MAC) | 1/25 | Yee, James | MediaTek Inc. |
| TGbe (MAC) | 1/25 | yi, yongjiang | Futurewei Technologies |
| TGbe (MAC) | 1/25 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbe (MAC) | 1/25 | Zhou, Yifan | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 1/25 | Zuo, Xin | Tencent |

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**Submissions**

1. [1693r1](https://mentor.ieee.org/802.11/dcn/20/11-20-1693-01-00be-tspec-lite.pptx) TSPEC-lite Duncan Ho [2 SPs]

Discussion for SP1:

C: Are you also run SP2?

A: yes.

C: Since SP2 says “as is” and SP1 gives a broader scope, SP2’s approval will add the restriction on top of SP1?

A: yes.

C: when A-Control is used, A-Control will override TSPEC?

A: we can discuss it in R2.

C: What is the motivation for short term traffic characteristic?

A: short term traffic may change.

C: is short term traffic characteristic provided in application layer?

A: will be discussed in R2.

C: Why do we need TSPEC? TWT element has no room for such parameters. Some simple way should be ok.

A: TSPEC can provide more information. Some fields in TSPEC will be reserved.

SP1:

* **Do you agree to add the following to 11be R1:**
  + An AP or non-AP MLD shall use the TSPEC IE (either “as is” or with modification) as part of the QoS signaling to define the application-session level (long-term) characteristics and QoS expectations of a traffic flow

Note 1: traffic characteristics refer to description of the traffic that can be extracted from applications/higher layers

Note 2: whether to carry QoS signaling for short term characteristics in an A-control variant is TBD for R2.

43Y, 22N, 32A

1. [902r4](https://mentor.ieee.org/802.11/dcn/20/11-20-0902-04-00be-group-addressed-frames-delivery-for-mlo-follow-up.pptx) Group addressed frames delivery for MLO follow up Ming Gan [2 SPs]

Discussion for SP2A:

C: this one is associated with the previous SP, right?

A: yes.

C: have some concern about the indication in SP1. SP1 is not harmful since it is only about the indication. But this SP is for non-AP MLD’s link switch that doesn’t work.

A: this SP is not for link switch. The non-AP MLD will go to the notified link.

C: many things need to be clarified, e.g. what happens if the frame’s CRC is wrong?

The author decided to run SP2 per the discussion

SP2

* Do you agree that in R1, if an indication of buffered group addressed frames about an AP in an AP MLD is received by a non-AP MLD, the STA in the non-AP MLD that is associated with that AP shall decode all successfully received group addressed Management frames following the baseline if it is in awake state

29Y, 37N, 33A

1. [1965r0](https://mentor.ieee.org/802.11/dcn/20/11-20-1965-00-00be-pdt-mac-mlo-mandatory-optional.docx) PDT-MAC-MLO-mandatory-optional Laurent Cariou

Discussion:

C: first paragraph, what does the first sentence mean?

A: it is based on motion reference 1.

C: some non-AP EHT STA will not be part of non-AP MLD.

C: change “all pair” to “all pairs”.

A: ok.

C: question about soft AP MLD. It is better to add the description of normal AP MLD and soft AP MLD. WFA has the definition of soft AP MLD. It is better to refer to WFA’s definition.

A: although the definition of soft AP MLD wasn’t converged, the text reflects the passed motion.

The SP was deferred.

1. [0076r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0076-00-00be-pdt-tbd-mac-mlo-multi-link-setup-usage-and-rules-of-ml-ie.docx) MLO-multi-link-setup-usage-and-rules-of-ml-ie Insun Jang

Discussion:

C: sereval places mentioned ”by setting the Type subfield …”. You may remove it.

A: ok.

C: is there any place that mentions “the other fields in common info field are TBD”?

C: eMLSR, eMLMR subclause mentioned that the eMLSR/eMLMR capabilities will be in common info field.

C: subclause 9 should be changed accordingly. We don’t need to change here.

C: what is the value of link ID?

A: D0.3 mentioned that link ID is carried in RNR element of Beacon.

C: change “by setting the Complete Profile…” to “and shall set the Complete Profile…”

A: ok

SP (the updated text)

Do you support to incorporate the proposed text in 11-21/0076r1 into the latest version of TGbe Draft?

45Y, 1N, 34A

1. [0056r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0056-02-00be-mac-pdt-motion-146-sps-336-337.docx) Critical Updates (MBSSID case) Abhishek Patil

Discussion:

C: Capability field should be in Nontransmitted BSSID Profile.

A:no, Notransmitted BSSID Capability element should be in Nontransmitted BSSID Profile.

SP (the updated text)

Do you support to incorporate the proposed text in 11-21/0056r3 into the latest version of TGbe Draft?

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46Y, 3N, 24A

1. [0055r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0055-00-00be-mac-pdt-motion-137-sp-244.docx) MLO Power-save (WNM Sleep) Abhishek Patil

Discussion:

C: P4, WNM Sleep Response frame, you can just simply add optional subelements.

A: I see what you are saying. That is another way. This is the cleaner way. I am fine with either way.

C: agree with previous commenter.

The chair asked whether there are any other businesses before adjourning the meeting. No response was received.

The teleconference was adjourned at 11:59am