IEEE P802.11  
Wireless LANs

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| Minutes for TGbe MAC Ad-Hoc teleconferences in March to May 2023 | | | | |
| Date: 2023-03-27 | | | | |
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| Liwen Chu | NXP |  |  |  |
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Abstract

This document contains the meeting minutes for the TGbe MAC ad hoc teleconferences in March to May 2023.

Revisions:

* Rev0: Added the minute from the MAC ad hoc teleconference held on March 27.
* Rev1: Added the minute from the MAC ad hoc teleconference held on March 29.
* Rev2: Added the minute from the MAC ad hoc teleconference held on April 6.

**March 27, 2023 (19:00 – 21:00 ET) (TGbe MAC ad hoc)**

Chairman: Liwen Chu (NXP)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex.

**Introduction**

1. The Chair (Liwen, NXP) calls the meeting to order at 19:00 ET. The Chair introduces himself and the Secretary.
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) 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))

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| Name | Affiliation |
| Adachi, Tomoko | TOSHIBA Corporation |
| Ajami, Abdel Karim | Qualcomm Technologies, Inc |
| Baek, SunHee | LG ELECTRONICS |
| Carney, William | Sony Group Corporation |
| CHENG, yajun | Xiaomi Communications Co., Ltd. |
| CHUN, JINYOUNG | LG ELECTRONICS |
| Dong, Xiandong | Xiaomi Communications Co., Ltd. |
| Fan, Shuang | Sanechips Technology Co., Ltd. |
| Fischer, Matthew | Broadcom Corporation |
| Gu, Xiangxin | Unisoc |
| Haider, Muhammad Kumail | Meta Platforms Inc. |
| Hamilton, Mark | Ruckus/CommScope |
| Ho, Duncan | Qualcomm Incorporated |
| Jang, Insun | LG ELECTRONICS |
| Kim, Geon Hwan | LG ELECTRONICS |
| Kim, Sanghyun | WILUS Inc |
| Kim, Youhan | Qualcomm Technologies, Inc. |
| Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) |
| Klein, Arik | Huawei Technologies Co., Ltd |
| Kuo, Chih-Chun | MediaTek Inc. |
| Lanante, Leonardo | Ofinno |
| Li, Weiyi | Spreadtrum |
| Lou, Hanqing | InterDigital, Inc. |
| Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| Montemurro, Michael | Huawei Technologies Co., Ltd |
| Nayak, Peshal | Samsung Research America |
| Ouchi, Masatomo | Canon |
| Palayur, Saju | Maxlinear Inc |
| Patil, Abhishek | Qualcomm Incorporated |
| Patwardhan, Gaurav | Hewlett Packard Enterprise |
| Qi, Yue | Samsung Research America |
| Quan, Yingqiao | Unisoc |
| Ratnam, Vishnu | Samsung Research America |
| Ryu, Kiseon | NXP Semiconductors |
| Seo, Sangho | Broadcom Corporation |
| Shafin, Rubayet | Samsung Research America |
| Sun, Bo | Sanechips |
| Wang, Qi | Apple, Inc. |
| Wullert, John | Peraton Labs |
| Xia, Qing | Sony Corporation |
| Yi, Yongjiang | Spreadtrum Communication USA, Inc |
| Yoon, Yelin | LG ELECTRONICS |
| Zhao, Yue | Huawei Technologies Co., Ltd |

1. The Chair asked whether there is comment about agenda in 11-23/0509r2. The agenda was approved.

**Submissions**

1. [501r3](https://mentor.ieee.org/802.11/dcn/23/11-23-0501-00-00be-lb271-cr-for-35-3-7-1-7-part-i.docx) lb271-cr-for-35.3.7.1.7-Part-I Jason Y. Guo [14C]

SP: Do you support to accept the resolution in 11-23/501r3 for the following CIDs?

15524 15526 15599 15823 15847 16009 16010 16112 16503 1650516507 17828 17944 18142

No objection

1. [308r1](https://mentor.ieee.org/802.11/dcn/23/11-23-0308-00-00be-lb271-cr-35-4-2.docx) LB271 CR 35.4.2 Liwen Chu [6C]

SP: Do you support to accept the resolution in 11-23/308r1 for the following CIDs?

15889, 17004, 17005, 15125, 15419, 15602

No objection

1. [357r0](https://mentor.ieee.org/802.11/dcn/23/11-23-0357-00-00be-lb271-cids-on-twt.docx) LB271 CIDs on TWT Rubayet Shafin [1C]

C: who transmit the ack frame? Any STA of non-AP MLD or other? Can you clarify it?

A: Yes, any STA. Will do

C: what does the deleted schedule mean for non-AP MLD? Instead of deleted, why not use like STA cannot use the link some like that?

A: This does not mean the schedule is suspended. I can make them better languages

C: You mentioned this is power saving. What’s the assumption of link disabled? Is it power saving?

A: Power saving is just one of motivation. DFS reason or regulatory reason. There is already the link disablement in the spec.

C: Before link 1 disabled, link 2 and link 3 are active?

A: Yes.

C: You assumed that 3 links are active and only 1 link is disabled?

C: Can you defer this SP?

A: Sure.

SP is deferred

1. [363r2](https://mentor.ieee.org/802.11/dcn/23/11-23-0363-00-00be-cr-for-lb271-cids-part2.docx) CR for LB271 CIDs – Part2 Rubayet Shafin [5C]

C: what about one of the other links rather than one of the links?

SP: Do you support to accept the resolution in 11-23/363r2 for the following CIDs?

16576, 15111, 15650, 15891, 17906

No objection

1. [443r1](https://mentor.ieee.org/802.11/dcn/23/11-23-0443-00-00be-lb271-cr-for-35-5-2-3-3.docx) CR for 35.5.2.3.3 Jason Y. Guo [5C]

C: You can add one more cross reference(35.5.2.3.1) in clause 9 for more clarification like general in 35. Current is not enough.

C: add Note please use ”filed” or ”subfiled’ based on the editor guideline.

SP: Do you support to accept the resolution in 11-23/443r1 for the following CIDs?

15247 15252 17027 17028 17235

No objection

1. [457r0](https://mentor.ieee.org/802.11/dcn/23/11-23-0457-00-00be-lb271-cr-for-9-2-4-7-1-trs-control-field.docx) CR for 9.2.4.7.1 TRS Control field Jason Y. Guo [8C]

Some discussion on hardware capability

C: Change HE PPDU to the specific PPDU

SP: Do you support to accept the resolution in 11-23/457r2 for the following CIDs?

17306 17381 17382 17383 17384 17385 17386 18052

No objection

The teleconference was adjourned at 20:50 ET.

**March 29, 2023 (10:00 – 12:00 ET) (TGbe MAC ad hoc)**

Chairman: Liwen Chu (NXP)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex.

**Introduction**

1. The Chair (Liwen, NXP) calls the meeting to order at 10:02 ET. The Chair introduces himself and the Secretary.
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) 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))

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| Name | Affiliation |
| Ajami, Abdel Karim | Qualcomm Technologies, Inc |
| baron, stephane | Canon Research Centre France |
| Carney, William | Sony Group Corporation |
| CHENG, yajun | Xiaomi Communications Co., Ltd. |
| Chng, Shi Baw | BAWMAN LLC |
| CHUN, JINYOUNG | LG ELECTRONICS |
| Coffey, John | Realtek Semiconductor Corp. |
| Dong, Xiandong | Xiaomi Communications Co., Ltd. |
| Fujimori, Yuki | Canon Research Centre France |
| Gu, Xiangxin | Unisoc |
| Gupta, Binita | Meta Platforms, Inc. |
| Haider, Muhammad Kumail | Meta Platforms Inc. |
| Ho, Duncan | Qualcomm Incorporated |
| Huang, Po-Kai | Intel |
| Huq, Kazi Mohammed Saidul | Ofinno |
| Jang, Insun | LG ELECTRONICS |
| Kim, Geon Hwan | LG ELECTRONICS |
| Kim, Yongho | Korea National University of Transportation |
| Kim, Youhan | Qualcomm Technologies, Inc. |
| Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) |
| Klein, Arik | Huawei Technologies Co., Ltd |
| Koundourakis, Michail | Samsung Cambridge Solution Centre |
| Kuo, Chih-Chun | MediaTek Inc. |
| Lalam, Massinissa | SAGEMCOM BROADBAND SAS |
| Li, Weiyi | Spreadtrum |
| Lin, Zinan | InterDigital, Inc. |
| Lorgeoux, Mikael | Canon Research Centre France |
| Lou, Hanqing | InterDigital, Inc. |
| Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| McCann, Stephen | Huawei Technologies Co., Ltd |
| Nayak, Peshal | Samsung Research America |
| Ng, Boon Loong | Samsung Research America |
| Palayur, Saju | Maxlinear Inc |
| Park, Sungjin | Senscomm |
| Patil, Abhishek | Qualcomm Incorporated |
| Patwardhan, Gaurav | Hewlett Packard Enterprise |
| Quan, Yingqiao | Unisoc |
| Ratnam, Vishnu | Samsung Research America |
| Ryu, Kiseon | NXP Semiconductors |
| Shirakawa, Atsushi | SHARP CORPORATION |
| Sun, Bo | Sanechips |
| Wang, Qi | Apple, Inc. |
| Wullert, John | Peraton Labs |
| Yang, Jay | Nokia |
| Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| Yee, James | MediaTek Inc. |
| Yi, Yongjiang | Spreadtrum Communication USA, Inc |
| Yoon, Yelin | LG ELECTRONICS |
| Zhang, Jiayi | Ofinno |
| Zhao, Yue | Huawei Technologies Co., Ltd |

1. The Chair asked whether there is comment about agenda in 11-23/0509r3. The agenda was approved.

**Submissions**

1. [354r2](https://mentor.ieee.org/802.11/dcn/23/11-23-0354-02-00be-cr-for-some-clauses-in-9-4.docx) CR for Some Clauses in 9.4 Po-Kai Huang [3C-SP]

C: you may want to remove the duplication one in clause 9 and clause 35.

C: The resolution for CID 17538 creates instances where the same rule is duplicated in clause 9.4.2.26 and subclauses of 35.3. Either in the current round (preferred) or the next round, the TG should review the text in these subclauses to identify and address the duplication. (e.g., ‘If an AP MLD supports Proxy ARP service, then all affiliated APs of the AP MLD shall set the Proxy ARP field to 1 in their Extended Capabilities elements.’)

SP: Do you support to accept the resolution in 11-23/354r3the following CIDs?

17538, 15928, 16435

No objection

1. [335r4](https://mentor.ieee.org/802.11/dcn/23/11-23-0335-03-00be-cr-for-4-5-3-and-11-3.docx) CR for 4.5.3 and 11.3 Po-Kai Huang [1C-SP]

SP: Do you support to accept the resolution in 11-23/335r4 for the following CIDs?

18067

No objection

1. [323r4](https://mentor.ieee.org/802.11/dcn/23/11-23-0323-04-00be-cr-for-35-3-5.docx) CR for 35.3.5 Po-Kai Huang [1C-SP]

C: What’s the functionalities in the paragraph?

A: services like TWT, BA. I’m ok with change to services.

C: suggestion: “NOTE – A certain functionality that applies between a non-AP STA and its associated AP (where either or both are not affiliated with an MLD) will also apply, unless otherwise specified, to a non-AP STA and its associated AP where both are affiliated with their respective MLDs and the MLDs have performed ML setup.”

C: does the term "service" capture rules and requirements?

C: having a couple days of reflector discussions might help on this item.

A: This is almost done. I also reflect abhi’s comments.

C: Do we have definition of service?

A: Yeah we have security services, BSS services, etc. 4.5 Overview of the services.

SP: Do you support to accept the resolution in 11-23/323r5 for the following CIDs?

17892

No objection

1. [310r2](https://mentor.ieee.org/802.11/dcn/23/11-23-0310-00-00be-lb271-cr-35-3-18-part-1.docx) LB271 CR 35.3.18 part 1 Liwen Chu [14C]

C: eMLMR->EMLMR

C:

C: what is the initial frame exchanges?

A: initial frame exchange cover initial frame and response.

C: what is a frame exchange? Any further frame exchange except initial frame exchange?

C: Can you clarify the initial frame exchange in the below paragraph( third line)? We don’t have the definition of it.

16936 is deferred.

C: only initiated by AP affiliated with AP MLD? What about non-AP MLD? The text is confused.

16383, 16935, 16623, 15418 are deferred.

SP: Do you support to accept the resolution in 11-23/310r2 for the following CIDs?

~~16383, 16935, 15623,~~ 16558, 15624, ~~16936~~, 17865, ~~15418,~~ 15648, 16937,

15625, 16938, 15829, 16939

No objection

1. [340r3](https://mentor.ieee.org/802.11/dcn/23/11-23-0340-03-00be-lb271-cr-cl35-emlsr.docx) LB 271 CR CL35 EMLSR Minyoung Park [35C ]

C: I had another suggestion on the text. We can add the text ”The AP MLD and non-AP MLD shall follow the parameters in the most recent EML OMN frame exchange between the AP MLD and the non-AP MLD”.

A: This is enabling and disabling related text. We can add the related text in the next document. Is it ok? I have a comment on your suggested text. It’s hard to add it now.

C: ok, i want to hear other options.

C: either applied to whole paragraph or part after and?

A: Whole text?

C: what is the SigExt for time out interval?

A: It is Brian’s comment from REVme. It covers both case (ext and none)

C: regarding d), why are we adding this rule?

A: we had discussion at the last round by Gaurang. We can have more offline discussion with this CID if you want.

C: For the last paragraph, you can add ”whichever comes first”

C: d) , change from shall to should.

A: We will have more offline discussion on d).

A: I want to SP for enabling and disabling except 17877,

C: do you defer the single link as well?

A: yes, (s) related CID will be deferred.

A: 15655 diagram related is deferred.

SP: Do you support to accept the resolution in 11-23/340r5 for the following CIDs?

15075 15077 15563 15645 16055 ~~16676~~ 16675 16555 16469 15109 16917 15562 15591 15884 16259 15590 15592 16554 16918 16232 15483 15112 16616 16919 15885 15080 16056 15076 16260 16556 16920 16921 16557 16617 15078 16470 18059

No objection

NOTE: changes related to ”(S)” for multiple links are not part of the SP.

1. [545r0](https://mentor.ieee.org/802.11/dcn/23/11-23-0545-00-00be-lb271-clause-6-and-clause-10-resolutions.docx) lb271-clause-6-and-clause-10-resolutions Stephen McCann [3C]

SP: Do you support to accept the resolution in 11-23/545r0 for the following CIDs?

16233, 16251, 16252

No objection

The teleconference was adjourned at 11:57 ET.

**April 6, 2023 (10:00 – 12:00 ET) (TGbe MAC ad hoc)**

Chairman: Liwen Chu (NXP)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex.

**Introduction**

1. The Chair (Liwen, NXP) calls the meeting to order at 10:02 ET. The Chair introduces himself and the Secretary.
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.
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5. The Chair asked whether there is comment about agenda in 11-23/0509r5. The agenda was approved.

**Submissions**

1. [437r2](https://mentor.ieee.org/802.11/dcn/23/11-23-0437-00-00be-lb271-cr-cl35-emlsr-part2.docx) LB 271 CR CL35 EMLSR - part 2 Minyoung Park [37C -16GT]

C: What is the motivation of this operation on 15658? What is the challenge of MU-RTS TXS trigger?

A: Addtional types of Trigger frame may be transmitted by implementation.

C: I don’t need to call out this restriction. I don’t see the challenge of it.

A: Both are two different frame between MU-RTS Trigger frame and MU-RTS TXS Trigger frame.

The indicated CID and related CIDs were deferred

C: How about the EMLMR?

A: It can be discussed in EMLMR section.

C: What’s the limitation or reason of one spatial stream? STA or AP?

A: This is STA side’s constraints.

C: For Disabled link and listening mode, we may need listening on the disabled link? The spec allows that the STA transmits a few frame on disabled link.

A: This is when a link among EMLSR link set is disabled

C: ok

C: You can use different document 307 to address the CID 15564 instead of rejected.

C:

SP: Do you support to accept the resolution in 11-23/437r3 for the following CIDs?

16923 16924 16927 15886 16929 16930 16931 17857 16926 1502616680 16620 16679 16621 16932 15105 1692518058 15622 15230 15618 15730 16922 1562115061 15451 15611 16933 16934

No objection

1. [387r1](https://mentor.ieee.org/802.11/dcn/23/11-23-0387-00-00be-lb271-cr-for-subclause-35-3-12-6.docx) LB271 CR for subclause 35.3.12.6 Ming Gan [8C-6GT]

C: What if the maximum value of beacon intervals of the link corresponding to the removal link? If link is removed and other STA joins, then they will understand differently.

A: This depends on the STA’s request links.

C: We can restructure a sentence.

C: Same comment as Vishnu. When the AP remove the link, the Listen Interval does not change? Can you add the note for clarification? Like If the link is removed, the Listen Interval will remain.

A: Ok, I will do later.

SP: Do you support to accept the resolution in 11-23/387r1 for the following CIDs?

16828 15056 16603 16604 17962 16605 16606

No objection

1. [504r1](https://mentor.ieee.org/802.11/dcn/23/11-23-0504-00-00be-lb271-cr-cl35-mlti-part1.docx) cr cl35 mlti part1 Minyoung Park [26C -11GT]

C: Is there any case that there is only ML TI element without TIM?

A: TIM is always in beacon.

C: is TIM optional when there is no buffered traffic?

A: TIM element can indicate DTIM.

C: I perfer to keep the link ID offset.

C: The original text works already with the smallest ID value. How does it work without this text?

A: It starts from 0.

C:Before deleting, how does it work?

C: we have different option on this.

A: Do you want to defer this?

C: Yes, thanks

C: If we decide to keep the 'should', then the text needs to be fixed: It should be the Max (Highest link ID - Lowest Link ID) for each indicated non-AP MLD.

A: Ok, I will defer the 16824 related to that.

C: What does it mean the last text that you added on the last CID? That text is the same meaning as the previous text for default mapping.

A: I will defer this.

SP: Do you support to accept the resolution in 11-23/504r1 for the following CIDs?

15083 16040 15544 16528 16529 17745 15091 17740 15376 17741 16531 17292 1826715545 16532 16533 16534

No objection

1. 541r0 CR for 35.3.14 Po-Kai Huang [24C]
2. [546r5](https://mentor.ieee.org/802.11/dcn/23/11-23-0546-00-00be-lb271-clause-35-3-16-8-3-resolutions.docx) lb271-clause-35-3-16-8-3-resolutions Stephen McCann [4C-3GT]

SP: Do you support to accept the resolution in 11-23/546r5 for the following CIDs?

16228,16213, 16214, 16229, 16230 and 16254.

No objection

1. [552r0](https://mentor.ieee.org/802.11/dcn/23/11-23-0552-00-00be-cr-for-some-clauses-in-10-and-11.docx) CR for Some Clauses in 10 and 11 Po-Kai Huang [8C]

16687 is deferred after discussion.

Not finished.

The teleconference was adjourned at 12:00 ET.