IEEE P802.11 Wireless LANs

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| --- | --- | --- | --- | --- |
| Minutes for TGbe MAC Ad-Hoc teleconferences in March and May 2021 | | | | |
| Date: 2021-03-17 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | Email |
| Jeongki Kim | LG Electronics |  |  |  |
| Liwen Chu | NXP |  |  |  |
|  |  |  |  |  |

Abstract

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

Revisions:

* Rev0: Added the minutes from the telephone conferences held on March 17, 18 2021.
* Rev1: Added the minute from the telephone conference held on March 22 2021.
* Rev2: Added the minute from the telephone conference held on March 25 2021.
* Rev3: Added the minute from the telephone conference held on March 29 2021.

### March 17 2021, 10:00 –12:00 ET (TGbe MAC ad hoc conference call)

Chairman: Liwen Chu (NXP)

Secretary: Jeongki Kim (LG Electronics)

This meeting took place using a webex session.

**Introduction**

1. The Chair (Liwen, NXP) calls the meeting to order at 10:02 EDT. The Chair introduces himself and the Secretary, Jeongki Kim (LG)
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. Nobody spoke up.
3. The Chair goes through the following Copyright Policy
   1. **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
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))

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

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbe (MAC) | 3/17 | AbidRabbu, Shaima' | Istanbul Medipol University; Vestel |
| TGbe (MAC) | 3/17 | Aboulmagd, Osama | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/17 | Akhmetov, Dmitry | Intel Corporation |
| TGbe (MAC) | 3/17 | Asterjadhi, Alfred | Qualcomm Incorporated |
| TGbe (MAC) | 3/17 | Aygul, Mehmet | Istanbul Medipol University; Vestel |
| TGbe (MAC) | 3/17 | Baek, SunHee | LG ELECTRONICS |
| TGbe (MAC) | 3/17 | Bankov, Dmitry | IITP RAS |
| TGbe (MAC) | 3/17 | baron, stephane | Canon Research Centre France |
| TGbe (MAC) | 3/17 | Bravo, Daniel | Intel Corporation |
| TGbe (MAC) | 3/17 | Bredewoud, Albert | Broadcom Corporation |
| TGbe (MAC) | 3/17 | Carney, William | Sony Corporation |
| TGbe (MAC) | 3/17 | Cavalcanti, Dave | Intel Corporation |
| TGbe (MAC) | 3/17 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 3/17 | Choi, Jinsoo | LG ELECTRONICS |
| TGbe (MAC) | 3/17 | Coffey, John | Realtek Semiconductor Corp. |
| TGbe (MAC) | 3/17 | Derham, Thomas | Broadcom Corporation |
| TGbe (MAC) | 3/17 | Dong, Xiandong | Xiaomi Inc. |
| TGbe (MAC) | 3/17 | Erceg, Vinko | Broadcom Corporation |
| TGbe (MAC) | 3/17 | Escuder, Francisco | Maxlinear Corp |
| TGbe (MAC) | 3/17 | Fischer, Matthew | Broadcom Corporation |
| TGbe (MAC) | 3/17 | Gu, Xiangxin | Unisoc |
| TGbe (MAC) | 3/17 | Guo, Yuchen | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/17 | Haider, Muhammad Kumail | Facebook |
| TGbe (MAC) | 3/17 | Han, Jonghun | SAMSUNG |
| TGbe (MAC) | 3/17 | Han, Zhiqiang | ZTE Corporation |
| TGbe (MAC) | 3/17 | Handte, Thomas | Sony Corporation |
| TGbe (MAC) | 3/17 | Hervieu, Lili | Cable Television Laboratories Inc. (CableLabs) |
| TGbe (MAC) | 3/17 | Ho, Duncan | Qualcomm Incorporated |
| TGbe (MAC) | 3/17 | Hu, Chunyu | Facebook |
| TGbe (MAC) | 3/17 | Huang, Po-Kai | Intel Corporation |
| TGbe (MAC) | 3/17 | Inohiza, Hirohiko | Canon |
| TGbe (MAC) | 3/17 | Izquierdo, Eduardo | Maxlinear Corp |
| TGbe (MAC) | 3/17 | Jang, Insun | LG ELECTRONICS |
| TGbe (MAC) | 3/17 | Kain, Carl | USDoT; Noblis, Inc. |
| TGbe (MAC) | 3/17 | Kakani, Naveen | Qualcomm Incorporated |
| TGbe (MAC) | 3/17 | kamath, Manoj | Broadcom Corporation |
| TGbe (MAC) | 3/17 | Kim, Jeongki | LG ELECTRONICS |
| TGbe (MAC) | 3/17 | kim, namyeong | LG ELECTRONICS |
| TGbe (MAC) | 3/17 | Kim, Sang Gook | LG ELECTRONICS |
| TGbe (MAC) | 3/17 | Kim, Sanghyun | WILUS Inc |
| TGbe (MAC) | 3/17 | Kim, Youn-Kwan | Sync Techno |
| TGbe (MAC) | 3/17 | Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) |
| TGbe (MAC) | 3/17 | Klein, Arik | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/17 | Klimakov, Andrey | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/17 | Kneckt, Jarkko | Apple, Inc. |
| TGbe (MAC) | 3/17 | Ko, Geonjung | WILUS Inc. |
| TGbe (MAC) | 3/17 | Kwon, Young Hoon | NXP Semiconductors |
| TGbe (MAC) | 3/17 | Levitsky, Ilya | IITP RAS |
| TGbe (MAC) | 3/17 | Li, Yiqing | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/17 | Lorgeoux, Mikael | Canon Research Centre France |
| TGbe (MAC) | 3/17 | Lou, Hanqing | InterDigital, Inc. |
| TGbe (MAC) | 3/17 | Lu, kaiying | MediaTek Inc. |
| TGbe (MAC) | 3/17 | Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbe (MAC) | 3/17 | LU, Yuxin | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/17 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbe (MAC) | 3/17 | Martinez Vazquez, Marcos | MaxLinear Corp |
| TGbe (MAC) | 3/17 | McCann, Stephen | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/17 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/17 | Naik, Gaurang | Qualcomm Incorporated |
| TGbe (MAC) | 3/17 | Ng, Boon Loong | Samsung Research America |
| TGbe (MAC) | 3/17 | Pare, Thomas | MediaTek Inc. |
| TGbe (MAC) | 3/17 | Park, Minyoung | Intel Corporation |
| TGbe (MAC) | 3/17 | Patil, Abhishek | Qualcomm Incorporated |
| TGbe (MAC) | 3/17 | Patwardhan, Gaurav | Hewlett Packard Enterprise |
| TGbe (MAC) | 3/17 | Petrick, Albert | InterDigital, Inc. |
| TGbe (MAC) | 3/17 | Pettersson, Charlie | Ericsson AB |
| TGbe (MAC) | 3/17 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 3/17 | Rosdahl, Jon | Qualcomm Technologies, Inc. |
| TGbe (MAC) | 3/17 | Sedin, Jonas | Ericsson AB |
| TGbe (MAC) | 3/17 | Shafin, Rubayet | Samsung Research America |
| TGbe (MAC) | 3/17 | Solaija, Muhammad Sohaib | Istanbul Medipol University; Vestel |
| TGbe (MAC) | 3/17 | Torab Jahromi, Payam | Facebook |
| TGbe (MAC) | 3/17 | Verenzuela, Daniel | Sony Corporation |
| TGbe (MAC) | 3/17 | VIGER, Pascal | Canon Research Centre France |
| TGbe (MAC) | 3/17 | Wang, Lei | Futurewei Technologies |
| TGbe (MAC) | 3/17 | Wang, Qi | Apple, Inc. |
| TGbe (MAC) | 3/17 | Wentink, Menzo | Qualcomm Incorporated |
| TGbe (MAC) | 3/17 | Yang, Jay | Nokia |
| TGbe (MAC) | 3/17 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbe (MAC) | 3/17 | yi, yongjiang | Futurewei Technologies |
| TGbe (MAC) | 3/17 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbe (MAC) | 3/17 | Zuo, Xin | Tencent |

The Chair reminds that the agenda can be found in 11-20/0385r8. The agenda is modified

**Submissions**

* 1. [221r7](https://mentor.ieee.org/802.11/dcn/21/11-21-0221-05-00be-pdt-mac-mlo-nstr-blindness-tbd.docx) MAC-MLO-NSTR-blindness-TBD Dibakar Das [SP]

Discussion:

C: Seems to be no value of mediumsyncdelay time. Maybe need the value.

A: I have another for signaling.

C: I see TBD in the document. I strongly advised not presenting TBD in the document.

A: Signaling is TBD  
C: we can do it at the next time. or prepare another PDT for it.

A: I prefer the SP.

C: how to decide the value need to be clarified.

A: Ok.

Defered.

* 1. [080r6](https://mentor.ieee.org/802.11/dcn/21/11-21-0080-04-00be-twt-for-mld.docx) pdt-mlo-TWT-for-MLD Ming Gan [SP]

Discussion:

C:If the reponse is different from the request what happens? For example, the request contains link 1 and 3 but the response accepts only link 1.

A: If multiple link elements are contained, each can be preset. If one element is used for multiple link, the same status is adjusted.

C: Figure 35-y is not considered in the motion.

A: The motion text can cover it generally and the refered document also contains it.

C: Using the same parameter in multiple links is not covered in motion as well.

C: Similar to the previous. I also have the concern on 35-y and related text. Not aligned with the motion.

A: Do You have a concern on only 35-y?

C: Why do you use the same parameter set for different links?

A: I don’t want to restrict any thing for this. We allowed two different cases.

C: What is ”a STA” in the first sentence? Need to specify it for clarification.

A: Got it. I’ll update it.

A: I can defer this.

* 1. [233r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0233-01-00be-pdt-mld-security-considerations.docx) PDT MLD security considerations Gaurav Patwardhan

Discussion:

C: AAD computation. A1, A2, subbullet 2 and 3, it’s MIB it’s local to the MLD. This is the transmitter side operation. ”the transmitter and intended receiver...”. STA only know own MIB value and does not know other’s MIB value.

A: this is descriptive language, normative, but descriptive, not action, so i think it is ok to use the MIB

C: the third bullet seems to be error. Maybe use otherwise instead of else.

A: Got it.

C: To DS is set to 1, what about From DS?

SP: Do you support to incorporate the proposed text in 11-21/233r3 to the latest version of Tgbe Draft?

No objection.

* 1. [335r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0335-00-00be-pdt-mac-mlo-emlmr-tbds.docx) PDT MAC MLO EMLMR TBDs Young H. Kwon

Discussion:

C: Two different documents mention the same EML Capabilities thing. How can you merge it?

A: There is no conflict. I just copy it from another document.

C: Fine if no confict.

C: In the behaviour section, why does it shall transmit?

A: it’s to enable or disable EMLMR mode.

C: I think the may is better.

A: In this condition, shall is better.

C: where is the condition?

A: to enable or disable

C: It’s just purpose.

C: The same as Jason. I think it’s not enough. Need to clarify.

C: EML capabilities. This is dynamic change?

A: Just capability. Not changing dynamically.

C: Need to resolve TBD in the document.

A: I have the CR document for it.

C: EMLMR support capability is common element of ML element?

I can defer this. I’ll bring back next

* 1. [336r3](https://mentor.ieee.org/802.11/dcn/21/11-21-0336-01-00be-pdt-mac-mlo-single-sta-trigger.docx) PDT MAC MLO single STA trigger Young H. Kwon

Discussion:

C: PPDU format is only HE SU and EHT MU.

A: includes?

C: Fine

C: Response Duration is PPDU duration ? Right.

A: Yes. Fine

C: PSDU length is greater... what does the accomodate mean? This is not the recommendation.

A: I’ll clarify it.

C: The last note should be normative text. Why is it note?

A: I’ll add the normative text related to duration

C: For SRS Support subfield, When shall AP set to 0? Clarify.

A: Will be updated.

C: What is the last text (35.3.15) about? EMLMR?

A: End time alignment.

C: Please check. Add the title there.

A: Got it.

A: PPDU duration response is fine

* 1. [1407r16](https://mentor.ieee.org/802.11/dcn/20/11-20-1407-15-00be-pdt-mac-mlo-soft-ap-mld-operation.docx) PDT-MAC-MLO-Soft-AP-MLD-Op. Kaiying Lu

Discussion:

C: Regarding Markup, do you add/delete any text from the draft?

A: Just deletion/addition is from the original version.

C: Then you can clean up the text for editor if you did not delete any from draft.

A: Ok, I can accept the deletion and addition.

C: Soft AP is not mandatory of AP MLD it’s not clear.

A: This is general description. We will discuss more.

C: when you do the sounding, how about ending time? Regarding the NSTR, do we need the ending time alignment?

A: No need.

C: Soft AP only has one NSTR link pair?

A: Yes.

The meeting is adjourned at 12:00

### March 18 2021, 10:00 –12:00 ET (TGbe MAC ad hoc conference call)

Chairman: Liwen Chu (NXP)

Secretary: Jeongki Kim (LG Electronics)

This meeting took place using a webex session.

**Introduction**

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

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbe (MAC) | 3/18 | Akhmetov, Dmitry | Intel Corporation |
| TGbe (MAC) | 3/18 | Bankov, Dmitry | IITP RAS |
| TGbe (MAC) | 3/18 | baron, stephane | Canon Research Centre France |
| TGbe (MAC) | 3/18 | Bravo, Daniel | Intel Corporation |
| TGbe (MAC) | 3/18 | Bredewoud, Albert | Broadcom Corporation |
| TGbe (MAC) | 3/18 | Carney, William | Sony Corporation |
| TGbe (MAC) | 3/18 | CHAN, YEE | Facebook |
| TGbe (MAC) | 3/18 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 3/18 | Ciochina, Dana | Sony Corporation |
| TGbe (MAC) | 3/18 | Das, Subir | Perspecta Labs Inc |
| TGbe (MAC) | 3/18 | de Vegt, Rolf | Qualcomm Incorporated |
| TGbe (MAC) | 3/18 | Dong, Xiandong | Xiaomi Inc. |
| TGbe (MAC) | 3/18 | Erceg, Vinko | Broadcom Corporation |
| TGbe (MAC) | 3/18 | Fischer, Matthew | Broadcom Corporation |
| TGbe (MAC) | 3/18 | Gu, Xiangxin | Unisoc |
| TGbe (MAC) | 3/18 | Guo, Yuchen | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/18 | Haider, Muhammad Kumail | Facebook |
| TGbe (MAC) | 3/18 | Han, Zhiqiang | ZTE Corporation |
| TGbe (MAC) | 3/18 | Hervieu, Lili | Cable Television Laboratories Inc. (CableLabs) |
| TGbe (MAC) | 3/18 | Ho, Duncan | Qualcomm Incorporated |
| TGbe (MAC) | 3/18 | Hu, Chunyu | Facebook |
| TGbe (MAC) | 3/18 | Kakani, Naveen | Qualcomm Incorporated |
| TGbe (MAC) | 3/18 | Khorov, Evgeny | IITP RAS |
| TGbe (MAC) | 3/18 | Kim, Jeongki | LG ELECTRONICS |
| TGbe (MAC) | 3/18 | kim, namyeong | LG ELECTRONICS |
| TGbe (MAC) | 3/18 | Kim, Sang Gook | LG ELECTRONICS |
| TGbe (MAC) | 3/18 | Kim, Sanghyun | WILUS Inc |
| TGbe (MAC) | 3/18 | Kim, Yongho | Korea National University of Transportation |
| TGbe (MAC) | 3/18 | Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) |
| TGbe (MAC) | 3/18 | Klein, Arik | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/18 | Ko, Geonjung | WILUS Inc. |
| TGbe (MAC) | 3/18 | Kwon, Young Hoon | NXP Semiconductors |
| TGbe (MAC) | 3/18 | Lee, Nancy | Signify |
| TGbe (MAC) | 3/18 | Levy, Joseph | InterDigital, Inc. |
| TGbe (MAC) | 3/18 | Li, Yiqing | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/18 | Li, Yunbo | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/18 | Lou, Hanqing | InterDigital, Inc. |
| TGbe (MAC) | 3/18 | Lu, kaiying | MediaTek Inc. |
| TGbe (MAC) | 3/18 | Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbe (MAC) | 3/18 | LU, Yuxin | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/18 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbe (MAC) | 3/18 | Martinez Vazquez, Marcos | MaxLinear Corp |
| TGbe (MAC) | 3/18 | McCann, Stephen | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/18 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/18 | Naik, Gaurang | Qualcomm Incorporated |
| TGbe (MAC) | 3/18 | Nezou, Patrice | Canon Research Centre France |
| TGbe (MAC) | 3/18 | Ng, Boon Loong | Samsung Research America |
| TGbe (MAC) | 3/18 | Patil, Abhishek | Qualcomm Incorporated |
| TGbe (MAC) | 3/18 | Patwardhan, Gaurav | Hewlett Packard Enterprise |
| TGbe (MAC) | 3/18 | Petrick, Albert | InterDigital, Inc. |
| TGbe (MAC) | 3/18 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 3/18 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbe (MAC) | 3/18 | RISON, Mark | Samsung Cambridge Solution Centre |
| TGbe (MAC) | 3/18 | Rosdahl, Jon | Qualcomm Technologies, Inc. |
| TGbe (MAC) | 3/18 | Shafin, Rubayet | Samsung Research America |
| TGbe (MAC) | 3/18 | Stacey, Robert | Intel Corporation |
| TGbe (MAC) | 3/18 | Stanley, Dorothy | Hewlett Packard Enterprise |
| TGbe (MAC) | 3/18 | Sun, Li-Hsiang | Sony Corporation |
| TGbe (MAC) | 3/18 | Tsujimaru, Yuki | Canon Inc. |
| TGbe (MAC) | 3/18 | Verma, Sindhu | Broadcom Corporation |
| TGbe (MAC) | 3/18 | VIGER, Pascal | Canon Research Centre France |
| TGbe (MAC) | 3/18 | Wang, Chao Chun | MediaTek Inc. |
| TGbe (MAC) | 3/18 | Wang, Lei | Futurewei Technologies |
| TGbe (MAC) | 3/18 | Wang, Qi | Apple, Inc. |
| TGbe (MAC) | 3/18 | Xiao, Bo | ZTE Corporation |
| TGbe (MAC) | 3/18 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbe (MAC) | 3/18 | Yee, James | MediaTek Inc. |
| TGbe (MAC) | 3/18 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbe (MAC) | 3/18 | Zhou, Yifan | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/18 | Zuo, Xin | Tencent |

The Chair reminds that the agenda can be found in 11-20/0385r9. The agenda is modified

**Submissions**

1. 1407r17, Kaiying

Discussion:

C: Can you clarify the first sentece like most two .... ? The wording is confusing to me. You’re try to limit the number of APs and NSTR pair links. Two AP is clear. How about three APs? Or what happen?

A: Only two APs

C: the primary link is defined for one of an NSTR pair of links?

C: This is based on the current SFD.

C: affiliated to, we usually use affiliated with in most cases.

SP: Do you support to incorporate the proposed draft text in this document 11-20/1407r18 to the latest Tgbe draft?

35 Y/27 N/14 A

1. [373r4](https://mentor.ieee.org/802.11/dcn/21/11-21-0373-02-00be-cr-mac-str-capability-signaling.docx) CR MAC STR Capability signaling Yunbo Li [10 CIDs]

Discussion:

C: Instead of the first sentence, you can say that if the presence field is set to 1, AP shall set the Maximum number of ...

C: which is the maximum number of links... part can be deleted because it’s already mentioned.

C: requiring the presence field

C: MLD capability is better name.

C: suggesting not defining new terms like multi-radion MLD.

A: If we define this, MLD has a single radion MLD or others. Not clear.

I’ll update this. Next time will run SP.

1. [222r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0222-04-00be-pdt-mac-common-info-ml-element.docx) CR-MAC-Common Info-ML element Dibakar Das [3 CIDs]

Discussion:

C: MLD information element is 2 octect. You need 0 there if it’s optionally present.

C: In the figure, there are TBDs . Instead of many TBDs, you can say it’s x, x+1, x+2, ...

C: For bitmap part, we have offline discussion. This is based on STA profiles. The bitmap should be link ID. It’s more natural. You don’t know which STA profile carries which link ID.

A: The other part is complexity in case of link ID. STA profiles are in ML element.

C: ML element is in two subclause. ML element usage discovery and ML element link setup. NO need new.

C: Number of STA profiles is 4 bits.

Need more discussion.

C: Check the chat window. A bunch of editorials.

Upload the r5

1. [340r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0340-02-00be-cr-for-cid-1977.docx) CR for CID 1977 Dibakar Das [1 CID]

Discussion

C: Is those texts new? Or Deleted text? Clarify.

C: STA sends TSPEC to AP and AP sends TSPEC to STA.

C: The direction is 0 for UL. Is it TID setting?

C: SCS carries the TSPEC. Why SCS has to be used in particular? Many other existing things.

C: traffic is usually not symetric.

A: If there are different traffic, different SCSID is used.

1. [283r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0283-00-00be-cc34-cr-emlsr-part1.docx) CC34-CR-EMLSR-part1 Minyoung Park [7 CIDs]

Discussion:

C: Regarding enabling or disabling EMLSR mode, why do you consider another mode? (two CIDs)

A: Although there are multi-radio, the STA can choose a EMRSR mode

The meeting is adjourned at 12:00

### March 22 2021, 19:00 –22:00 ET (TGbe MAC ad hoc conference call)

Chairman: Liwen Chu (NXP)

Secretary: Jeongki Kim (LG Electronics)

This meeting took place using a webex session.

**Introduction**

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4. The Chair recommends using IMAT for recording the attendance.
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     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))

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| TGbe (MAC) | 3/22 | Aboulmagd, Osama | Huawei Technologies Co., Ltd |
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| TGbe (MAC) | 3/22 | Akhmetov, Dmitry | Intel Corporation |
| TGbe (MAC) | 3/22 | Asterjadhi, Alfred | Qualcomm Incorporated |
| TGbe (MAC) | 3/22 | Baek, SunHee | LG ELECTRONICS |
| TGbe (MAC) | 3/22 | Bahn, Christy | IEEE STAFF |
| TGbe (MAC) | 3/22 | Baik, Eugene | Qualcomm Incorporated |
| TGbe (MAC) | 3/22 | Bankov, Dmitry | IITP RAS |
| TGbe (MAC) | 3/22 | Cariou, Laurent | Intel Corporation |
| TGbe (MAC) | 3/22 | Carney, William | Sony Corporation |
| TGbe (MAC) | 3/22 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 3/22 | Chu, Liwen | NXP Semiconductors |
| TGbe (MAC) | 3/22 | Das, Subir | Perspecta Labs Inc |
| TGbe (MAC) | 3/22 | de Vegt, Rolf | Qualcomm Incorporated |
| TGbe (MAC) | 3/22 | Dong, Xiandong | Xiaomi Inc. |
| TGbe (MAC) | 3/22 | Fischer, Matthew | Broadcom Corporation |
| TGbe (MAC) | 3/22 | Gu, Xiangxin | Unisoc |
| TGbe (MAC) | 3/22 | Haider, Muhammad Kumail | Facebook |
| TGbe (MAC) | 3/22 | Han, Jonghun | SAMSUNG |
| TGbe (MAC) | 3/22 | Han, Zhiqiang | ZTE Corporation |
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| TGbe (MAC) | 3/22 | Inohiza, Hirohiko | Canon |
| TGbe (MAC) | 3/22 | Jang, Insun | LG ELECTRONICS |
| TGbe (MAC) | 3/22 | Jung, hyojin | Hyundai Motor Company |
| TGbe (MAC) | 3/22 | Kain, Carl | USDoT; Noblis, Inc. |
| TGbe (MAC) | 3/22 | Kakani, Naveen | Qualcomm Incorporated |
| TGbe (MAC) | 3/22 | Kandala, Srinivas | SAMSUNG |
| TGbe (MAC) | 3/22 | Khorov, Evgeny | IITP RAS |
| TGbe (MAC) | 3/22 | kim, namyeong | LG ELECTRONICS |
| TGbe (MAC) | 3/22 | Kim, Sang Gook | LG ELECTRONICS |
| TGbe (MAC) | 3/22 | Kim, Yongho | Korea National University of Transportation |
| TGbe (MAC) | 3/22 | Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) |
| TGbe (MAC) | 3/22 | Kneckt, Jarkko | Apple, Inc. |
| TGbe (MAC) | 3/22 | Kwon, Young Hoon | NXP Semiconductors |
| TGbe (MAC) | 3/22 | Levitsky, Ilya | IITP RAS |
| TGbe (MAC) | 3/22 | Levy, Joseph | InterDigital, Inc. |
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| TGbe (MAC) | 3/22 | Loginov, Vyacheslav | IITP RAS |
| TGbe (MAC) | 3/22 | Lou, Hanqing | InterDigital, Inc. |
| TGbe (MAC) | 3/22 | Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbe (MAC) | 3/22 | LU, Yuxin | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/22 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbe (MAC) | 3/22 | Ma, Mengyao | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/22 | Mehrnoush, Morteza | Facebook |
| TGbe (MAC) | 3/22 | Mohanty, Bibhu | Qualcomm Incorporated |
| TGbe (MAC) | 3/22 | Monajemi, Pooya | Cisco Systems, Inc. |
| TGbe (MAC) | 3/22 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/22 | Naik, Gaurang | Qualcomm Incorporated |
| TGbe (MAC) | 3/22 | NANDAGOPALAN, SAI SHANKAR | Infineon Technologies |
| TGbe (MAC) | 3/22 | Nezou, Patrice | Canon Research Centre France |
| TGbe (MAC) | 3/22 | Ng, Boon Loong | Samsung Research America |
| TGbe (MAC) | 3/22 | Ouchi, Masatomo | Canon |
| TGbe (MAC) | 3/22 | Park, Minyoung | Intel Corporation |
| TGbe (MAC) | 3/22 | Patil, Abhishek | Qualcomm Incorporated |
| TGbe (MAC) | 3/22 | Patwardhan, Gaurav | Hewlett Packard Enterprise |
| TGbe (MAC) | 3/22 | Petrick, Albert | InterDigital, Inc. |
| TGbe (MAC) | 3/22 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 3/22 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbe (MAC) | 3/22 | Rosdahl, Jon | Qualcomm Technologies, Inc. |
| TGbe (MAC) | 3/22 | Shafin, Rubayet | Samsung Research America |
| TGbe (MAC) | 3/22 | Srinivasan, Shree Raman | Qualcomm Incorporated |
| TGbe (MAC) | 3/22 | Strauch, Paul | Qualcomm Incorporated |
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| TGbe (MAC) | 3/22 | Wang, Lei | Futurewei Technologies |
| TGbe (MAC) | 3/22 | Wang, Qi | Apple, Inc. |
| TGbe (MAC) | 3/22 | Wullert, John | Perspecta Labs |
| TGbe (MAC) | 3/22 | Yang, Jay | Nokia |
| TGbe (MAC) | 3/22 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbe (MAC) | 3/22 | yi, yongjiang | Futurewei Technologies |
| TGbe (MAC) | 3/22 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

The Chair reminds that the agenda can be found in 11-20/0385r11. The agenda is modified

**Technical Submissions:**

1. [082r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0082-01-00be-pdt-mac-mlo-power-save-listen-interval.docx) pdt-mac-mlo-power save listen interval Ming Gan [SP]

Discussion:

C: the Listen Interval should be included in ML element?

A: 254 covers the Listen Interval is included in the ML element

C: For the power saving operation related sentence, use at least a STA

C: Different beacon intervals depending on different APs?

A: I don’t mention it.

C: The longer value is used. What if a link of links does not accepted?

A: The last part is originated from baseline 802.11 spec

C: The original motion text has technical holes. I’m fine with the text that Ming added.

C: What do you do once a STA is awake and the other STAs are in power saving? Do you follow the default PS mode?

A: That is TID-to-link mapping?

C: You need to make sure this operation for the last paragraph.

1. [257r3](https://mentor.ieee.org/802.11/dcn/21/11-21-0257-03-00be-proposed-draft-specification-for-multi-link-group-addressed-frame-reception.docx) PDT for multi-link group addressed frame RX Po-Kai Huang [SP]

Discussion:

C: what change it from the previous version?

A: item (e)

C: MLD has many links but you refer the single link text. Clarify.

A: This is the non-AP STA affiliated with the MLD.

**Straw Poll: Do you support to incorporate the proposed draft text in 11-21-0257r3 to the latest TGbe Draft?**

No objection.

1. 349r3 PDT Group address frame RX for non-AP MLD Ming Gan [SP]

Discussion:

C: The sentence means that the STA has to be awake?

A: No, that’s the condition, The STA shall elect to receive..

C: Is the one sentece from the baseline?

A: Yes.

**Straw Poll: Do you support to incorporate the proposed draft text in 11-21-0349r3 to the latest TGbe Draft?**

No objection.

1. 335r34 PDT MAC MLO EMLMR TBDs Young H. Kwon [SP]>5PM

Discussion:

C: The capabilities field, Minyoung has it. You uses the same wording.

A: Minyoung has only EML Capabilities, I added EMLMR Support and EMLMR Delay.

C: Can you delete Operating mode in EML Operating Mode Notification?

A: Fine.

C: The Action frame is good to be proctected.

A: For example, the baseline OM Notification frame is already not protected. If the group agree that the baseline OMN frame is changed to the protected OMN, then we can change this as well.

C: I think EML capability is STA level not MLD level.

A: EMLMR mode is MLD level. EMLMR mode happens only when MLDMR links exist.

C: NSS or other parameters should be included for EMLSR

A: I have comments on that. I’ll handle it later

1. [160r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0160-01-00be-pdt-mac-mlo-emlsr-tbds.docx) PDT MAC MLO eMLSR TBDs Duncan Ho [SP]

Discussion:

C: What do you remove in the Note?

C: I think it’s too early that BSRP Trigger frame is mandatory. For Line 7, the group did not agree that both MU-RTS and BSRP Trigger frame are mandatory.

C: BSRP uses TB PPDU. I think whether MU-RTS and BSRP Trigger are mandatory should be discussed more.

A:

**Straw Poll: Do you support to incorporate the proposed draft text in 11-21-0160r1 to the latest TGbe Draft for addressing** 1582, 1704, 2339?

27/21/28

1. [397r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0397-02-00be-pdt-ml-element-for-transmitting-ap.docx) PDT ML element for transmitting AP Ming Gan

Discussion:

C: I think you consider the D0.4.

A: I don’t change the big here. Only two paragraphs.

C: The first part is fine. The second part is not related to motion for MLD ID Transmitting AP ID.

C: Regarding the use case in the draft, there is no text that you added.

A: I can strike out this text and come back later.

C: You wanna add that part in ML Probe Request.

A: I will remove this.

C: Generally you need to have the same format of ML element.

C: Why do you add those three parts as shall? Why do you mandate the MLD MAC address?

1. [373r6](https://mentor.ieee.org/802.11/dcn/21/11-21-0373-05-00be-cr-mac-str-capability-signaling.docx) CR MAC STR Capability signaling Yunbo Li [9 CIDs-SP]

Discussion:

C: Editorial, what does it mean simultaneous links?

A: We used the number of radios. Now we use the links instead of it. We can change it anytime.

C: MLD capabilities has 0 or 2. How can you indicate it?

A: It has a present bit in the other document.

C: Why do you include the number of them?

A: AP does not include all links in the response but enabled links.

C: For non-overlapping channels, you don’t need the.

**Straw Poll: Do you support to incorporate the proposed draft text in 11-21-0373r7 to the latest TGbe Draft for addressing** 1759, 2719, 2139, 1465, 2887, 1466, 1656, 3392, 1796, 1217?

41/5/24

1. [222r8](https://mentor.ieee.org/802.11/dcn/21/11-21-0222-08-00be-pdt-mac-common-info-ml-element.doc) PDT-MAC-Common Info-ML element Dibakar Das [3 CIDs-SP]

Discussion:

C: Why do you include those parameters in the Per-STA Profile?

C: What is the susggest and where do you include it? I suggest to prepare the PDT document.

C: Editorial, the present bit is 1 bit but use several bits.

1. [1780r1](https://mentor.ieee.org/802.11/dcn/20/11-20-1780-01-00be-reduced-blockack.pptx) Reduced-BlockAck Sanghyun Kim

Discussion:

C: Do you have any results to show how efficient this feature is?

A: if some MPDUs are failed, the efficiency will be high in low data rate

C: who decides whether it is used or not?

A: The recipeint can do it based on the failed MPDUs.

1. [1897r2](https://mentor.ieee.org/802.11/dcn/20/11-20-1897-02-00be-obss-edca-parameter-sets-for-rta.pptx) OBSS EDCA Parameter Sets for RTA Evgeny Khorov

Discussion:

C: slide 9, why do you change Cwmin from 3 to 7 for RTA?

A: If there are many RTA STAs and Cwmin is 3, the collision probability will be high. Want to reduce high collision probability.

C: What is your expectation of RTA friendly AP? If there is ESS, we don’t need this mechanism.

The meeting is adjourned at 22:00

### March 25 2021, 10:00 –12:00 ET (TGbe MAC ad hoc conference call)

Chairman: Liwen Chu (NXP)

Secretary: Jeongki Kim (LG Electronics)

This meeting took place using a webex session.

**Introduction**

1. The Chair (Liwen, NXP) calls the meeting to order at 10:02 EDT. The Chair introduces himself and the Secretary, Jeongki Kim (LG)
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. Nobody spoke up.
3. The Chair goes through the following Copyright Policy
   1. **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
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))

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

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| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbe (MAC) | 3/25 | AbidRabbu, Shaima' | Istanbul Medipol University; Vestel |
| TGbe (MAC) | 3/25 | Baek, SunHee | LG ELECTRONICS |
| TGbe (MAC) | 3/25 | Bankov, Dmitry | IITP RAS |
| TGbe (MAC) | 3/25 | baron, stephane | Canon Research Centre France |
| TGbe (MAC) | 3/25 | Bredewoud, Albert | Broadcom Corporation |
| TGbe (MAC) | 3/25 | Carney, William | Sony Corporation |
| TGbe (MAC) | 3/25 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 3/25 | Coffey, John | Realtek Semiconductor Corp. |
| TGbe (MAC) | 3/25 | Das, Subir | Perspecta Labs Inc |
| TGbe (MAC) | 3/25 | Dong, Xiandong | Xiaomi Inc. |
| TGbe (MAC) | 3/25 | Erceg, Vinko | Broadcom Corporation |
| TGbe (MAC) | 3/25 | Fischer, Matthew | Broadcom Corporation |
| TGbe (MAC) | 3/25 | Gu, Xiangxin | Unisoc |
| TGbe (MAC) | 3/25 | Haider, Muhammad Kumail | Facebook |
| TGbe (MAC) | 3/25 | Han, Jonghun | SAMSUNG |
| TGbe (MAC) | 3/25 | Han, Zhiqiang | ZTE Corporation |
| TGbe (MAC) | 3/25 | Handte, Thomas | Sony Corporation |
| TGbe (MAC) | 3/25 | Hervieu, Lili | Cable Television Laboratories Inc. (CableLabs) |
| TGbe (MAC) | 3/25 | Ho, Duncan | Qualcomm Incorporated |
| TGbe (MAC) | 3/25 | Hu, Chunyu | Facebook |
| TGbe (MAC) | 3/25 | Huang, Guogang | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/25 | Huang, Po-Kai | Intel Corporation |
| TGbe (MAC) | 3/25 | Jang, Insun | LG ELECTRONICS |
| TGbe (MAC) | 3/25 | Kakani, Naveen | Qualcomm Incorporated |
| TGbe (MAC) | 3/25 | Kandala, Srinivas | SAMSUNG |
| TGbe (MAC) | 3/25 | Khorov, Evgeny | IITP RAS |
| TGbe (MAC) | 3/25 | Kim, Jeongki | LG ELECTRONICS |
| TGbe (MAC) | 3/25 | kim, namyeong | LG ELECTRONICS |
| TGbe (MAC) | 3/25 | Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) |
| TGbe (MAC) | 3/25 | Klein, Arik | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/25 | Kneckt, Jarkko | Apple, Inc. |
| TGbe (MAC) | 3/25 | Kwon, Young Hoon | NXP Semiconductors |
| TGbe (MAC) | 3/25 | Lalam, Massinissa | SAGEMCOM BROADBAND SAS |
| TGbe (MAC) | 3/25 | Levitsky, Ilya | IITP RAS |
| TGbe (MAC) | 3/25 | Li, Yiqing | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/25 | Li, Yunbo | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/25 | Lorgeoux, Mikael | Canon Research Centre France |
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| TGbe (MAC) | 3/25 | Lu, kaiying | MediaTek Inc. |
| TGbe (MAC) | 3/25 | Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbe (MAC) | 3/25 | LU, Yuxin | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/25 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbe (MAC) | 3/25 | Martinez Vazquez, Marcos | MaxLinear Corp |
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| TGbe (MAC) | 3/25 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/25 | Naik, Gaurang | Qualcomm Incorporated |
| TGbe (MAC) | 3/25 | Nezou, Patrice | Canon Research Centre France |
| TGbe (MAC) | 3/25 | Ng, Boon Loong | Samsung Research America |
| TGbe (MAC) | 3/25 | Ouchi, Masatomo | Canon |
| TGbe (MAC) | 3/25 | Park, Minyoung | Intel Corporation |
| TGbe (MAC) | 3/25 | Patil, Abhishek | Qualcomm Incorporated |
| TGbe (MAC) | 3/25 | Patwardhan, Gaurav | Hewlett Packard Enterprise |
| TGbe (MAC) | 3/25 | Petrick, Albert | InterDigital, Inc. |
| TGbe (MAC) | 3/25 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 3/25 | RISON, Mark | Samsung Cambridge Solution Centre |
| TGbe (MAC) | 3/25 | Shafin, Rubayet | Samsung Research America |
| TGbe (MAC) | 3/25 | Sun, Li-Hsiang | Sony Corporation |
| TGbe (MAC) | 3/25 | Torab Jahromi, Payam | Facebook |
| TGbe (MAC) | 3/25 | VIGER, Pascal | Canon Research Centre France |
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| TGbe (MAC) | 3/25 | Yang, Jay | Nokia |
| TGbe (MAC) | 3/25 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
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| TGbe (MAC) | 3/25 | yi, yongjiang | Futurewei Technologies |
| TGbe (MAC) | 3/25 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbe (MAC) | 3/25 | Zhou, Yifan | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/25 | Zuo, Xin | Tencent |

The Chair reminds that the agenda can be found in 11-20/0385r13.

**Technical Submissions:**

1. [336r4](https://mentor.ieee.org/802.11/dcn/21/11-21-0336-04-00be-pdt-mac-mlo-single-sta-trigger.docx) PDT MAC MLO single STA trigger Young hoon Kwon [SP]

Discussion:

C:Is this only limiting AP or AP MLD?

A: Yes

**SP: Do you support to incorporate the proposed draft text in 11-21-0336r5 to the latest TGbe Draft?**

No objection.

1. [283r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0283-00-00be-cc34-cr-emlsr-part1.docx) CC34-CR-EMLSR-part1 Minyoung Park [7 CIDs]

Discussion:

C: Regarding the active mode, need to delete the STA awake state??

A: In baseline, the active mode means the awake or available state.

C: After successful transmission, the STA can be unavailable state?

A: Yes

C: In last two paragraph, shall transition to PS mode and to doze state. But I think it should be shall transition to PS mode and may enter the doze state. What do you think? It should not be shall.

A: Ok, let me try to modify the text.

1. [260r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0260-04-00be-cr-for-12-4.docx) CR for 12.4 Po-Kai Huang [6 CIDs]

Discussion:

C: is there any definition of SAE entity somewhere? When you use new term like SAE entities, need the defintion anywhere.

A: I just add the meaning of it here.

C: You can add it into 3.1

A: Ok

The definition of SAE entity is added on the fly.

C: If we change to the SAE entity, do we change the STA or MLD ?

C: page 5, the last paragraph, you change the STA to entity. I’m thinking whether we miss the case. For device case, clear. What about AP case?

C: I was considering the non-AP side. But I’m ok.

**SP: Do you support to accept the resolution for the following CIDs in Document 11-21/260r6?2864, 2284, 2285, 2286, 2487, 2576**

No objection.

1. [320r3](https://mentor.ieee.org/802.11/dcn/21/11-21-0320-03-00be-cr-for-35-3-11.docx) CR for 35.3.11 Po-Kai Huang [17 CIDs]

Discussion:

C: EDCAMSDULifetime is local variable?

A: Yes it’s local variable. The baseline has it.

C: is this value a singe value, per TID.

A: This is per MSDU. LifeTime? I don’t change anything.

C: This is per TID.

C: that is not a QoS(+)Null frame

C: sequence number space is MLD level. EDCA...Lifetime is STA level?

A: EDCA is STA level.

C: Tthe MSDU is passed to the MAC. It should be lower MAC.

A: timer is interval variable.

C: MLD SNS2? Individually addressed management frame. Link specific although it’s MLD SNS?

1. 41r4 Group addressed frame delivery methods for MLO Qi Wang (Apple Inc.)

Presented by author. No discussion due to time over.

The meeting is adjourned at 12:00

### March 29 2021, 19:00 –22:00 ET (TGbe MAC ad hoc conference call)

Chairman: Liwen Chu (NXP)

Secretary: Jeongki Kim (LG Electronics)

This meeting took place using a webex session.

**Introduction**

1. The Chair (Liwen, NXP) calls the meeting to order at 19:02 EDT. The Chair introduces himself and the Secretary, Jeongki Kim (LG)
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. Nobody spoke up.
3. The Chair goes through the following Copyright Policy
   1. **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;
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**Recorded attendance through Imat and e-mail:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Breakout | Timestamp | | Name | Affiliation |
| TGbe (MAC) | 3/29 | Aboulmagd, Osama | | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/29 | Abushattal, Abdelrahman | | Istanbul Medipol university ;Vestel |
| TGbe (MAC) | 3/29 | Adachi, Tomoko | | TOSHIBA Corporation |
| TGbe (MAC) | 3/29 | Akhmetov, Dmitry | | Intel Corporation |
| TGbe (MAC) | 3/29 | Asterjadhi, Alfred | | Qualcomm Incorporated |
| TGbe (MAC) | 3/29 | Baek, SunHee | | LG ELECTRONICS |
| TGbe (MAC) | 3/29 | Bahn, Christy | | IEEE STAFF |
| TGbe (MAC) | 3/29 | baron, stephane | | Canon Research Centre France |
| TGbe (MAC) | 3/29 | Cheng, Paul | | MediaTek Inc. |
| TGbe (MAC) | 3/29 | Chitrakar, Rojan | | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 3/29 | Das, Subir | | Perspecta Labs Inc |
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| TGbe (MAC) | 3/29 | de Vegt, Rolf | | Qualcomm Incorporated |
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| TGbe (MAC) | 3/29 | Fischer, Matthew | | Broadcom Corporation |
| TGbe (MAC) | 3/29 | Haider, Muhammad Kumail | | Facebook |
| TGbe (MAC) | 3/29 | Hamilton, Mark | | Ruckus/CommScope |
| TGbe (MAC) | 3/29 | Han, Jonghun | | SAMSUNG |
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| TGbe (MAC) | 3/29 | Kakani, Naveen | | Qualcomm Incorporated |
| TGbe (MAC) | 3/29 | Kim, Jeongki | | LG ELECTRONICS |
| TGbe (MAC) | 3/29 | kim, namyeong | | LG ELECTRONICS |
| TGbe (MAC) | 3/29 | Kim, Sang Gook | | LG ELECTRONICS |
| TGbe (MAC) | 3/29 | Kim, Sanghyun | | WILUS Inc |
| TGbe (MAC) | 3/29 | Kim, Yongho | | Korea National University of Transportation |
| TGbe (MAC) | 3/29 | Kishida, Akira | | Nippon Telegraph and Telephone Corporation (NTT) |
| TGbe (MAC) | 3/29 | Kneckt, Jarkko | | Apple, Inc. |
| TGbe (MAC) | 3/29 | Kwon, Young Hoon | | NXP Semiconductors |
| TGbe (MAC) | 3/29 | Lalam, Massinissa | | SAGEMCOM BROADBAND SAS |
| TGbe (MAC) | 3/29 | Li, Yunbo | | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/29 | Lou, Hanqing | | InterDigital, Inc. |
| TGbe (MAC) | 3/29 | Lu, kaiying | | MediaTek Inc. |
| TGbe (MAC) | 3/29 | Lu, Liuming | | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbe (MAC) | 3/29 | LU, Yuxin | | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/29 | Lumbatis, Kurt | | CommScope, Inc. |
| TGbe (MAC) | 3/29 | Monajemi, Pooya | | Cisco Systems, Inc. |
| TGbe (MAC) | 3/29 | Montemurro, Michael | | Huawei Technologies Co., Ltd |
| TGbe (MAC) | 3/29 | Naik, Gaurang | | Qualcomm Incorporated |
| TGbe (MAC) | 3/29 | NANDAGOPALAN, SAI SHANKAR | | Infineon Technologies |
| TGbe (MAC) | 3/29 | Ng, Boon Loong | | Samsung Research America |
| TGbe (MAC) | 3/29 | Ouchi, Masatomo | | Canon |
| TGbe (MAC) | 3/29 | Palayur, Saju | | Maxlinear Inc |
| TGbe (MAC) | 3/29 | Park, Minyoung | | Intel Corporation |
| TGbe (MAC) | 3/29 | Patil, Abhishek | | Qualcomm Incorporated |
| TGbe (MAC) | 3/29 | Petrick, Albert | | InterDigital, Inc. |
| TGbe (MAC) | 3/29 | Pushkarna, Rajat | | Panasonic Asia Pacific Pte Ltd. |
| TGbe (MAC) | 3/29 | Raissinia, Alireza | | Qualcomm Incorporated |
| TGbe (MAC) | 3/29 | Rosdahl, Jon | | Qualcomm Technologies, Inc. |
| TGbe (MAC) | 3/29 | Shafin, Rubayet | | Samsung Research America |
| TGbe (MAC) | 3/29 | Strauch, Paul | | Qualcomm Incorporated |
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| TGbe (MAC) | 3/29 | Tanaka, Yusuke | | Sony Corporation |
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| TGbe (MAC) | 3/29 | Tsujimaru, Yuki | | Canon Inc. |
| TGbe (MAC) | 3/29 | Wang, Chao Chun | | MediaTek Inc. |
| TGbe (MAC) | 3/29 | Wang, Huizhao | | Quantenna Communications, Inc. |
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| TGbe (MAC) | 3/29 | Wang, Qi | | Apple, Inc. |
| TGbe (MAC) | 3/29 | Wullert, John | | Perspecta Labs |
| TGbe (MAC) | 3/29 | Yang, Jay | | Nokia |
| TGbe (MAC) | 3/29 | Yano, Kazuto | | Advanced Telecommunications Research Institute International (ATR) |
| TGbe (MAC) | 3/29 | Zhou, Pei | | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

The Chair reminds that the agenda can be found in 11-20/0385r15.

**Technical Submissions:**

1. [082r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0082-05-00be-pdt-mac-mlo-power-save-listen-interval.docx) pdt-mac-mlo-power save listen interval Ming Gan [SP-5’]

**SP: Do you support to incorporate the proposed draft text in 11-21/82r5 to the latest TGbe Draft?**

No objection.

1. [397r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0397-04-00be-pdt-ml-element-for-transmitting-ap.docx) PDT ML element for transmitting AP Ming Gan [SP-5’]

Discussion:

C: Some typos.

C: Is this AP the reporting AP? Clarify.

A: having the condition.

C: For change sequence, it’s incremented if any non-transmitted BSSID is affiliated with the MLD. Is it for the reporting AP or MLD? How many CSs are included in the element?

A: Just one.

C: The text Need to be clarified.

**SP: Do you support to incorporate the proposed draft text in 11-21/397r6 to the latest TGbe Draft?**

No objection.

1. [1965r2](https://mentor.ieee.org/802.11/dcn/20/11-20-1965-02-00be-pdt-mac-mlo-mandatory-optional.docx) PDT-MAC-MLO-mandatory-optional Laurent Cariou [SP-5’]

Discussion:

C: all EHT STAs shall be able to support two STAs?

A: Yes

C: What is the multi-link single radio operation? What is the benefit?

A: We already discussed it.

C: shall be capable of 🡺 shall support

C: you need to separate the text for STR STA and non-STR STA.

1. [320r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0320-04-00be-cr-for-35-3-11.docx) CR for 35.3.11 Po-Kai Huang [17 CID-SP-5’]

Discussion:

C:Regarding QMF, why do you list it here? Per AC?

A: Yes

C: Per link, this may not be good approach.

C: If we have global SN, the management frame can be transmitted on one link and the other links. If we follow this rule, this operation may not be operated.

**SP: Do you support to accept the resolution of the following CIDs in 11-21/320r5?**

1162, 1163, 1174, 2914, 2328, 2913, 1632, 2056, 2751, 2496, 1077, 1842, 1845, 1101

34Y/4N/31A

1. [041r5](https://mentor.ieee.org/802.11/dcn/21/11-21-0041-04-00be-group-addressed-frame-delivery-methods-for-mlo.pptx) Group addressed frame delivery methods 4 MLO Qi Wang (cont.-20’ or 30’\*)
   * 1. [410r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0410-00-00be-proposed-resolution-to-11be-cc34-cids-on-group-addressed-data-frames-duplicate-detection.docx) Proposed resolution to 11be cc34 CIDs on group addressed data frames duplicate detection Qi Wang [4 CIDs
     2. [411r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0411-00-00be-proposed-resolution-to-11be-cc34-cids-on-gtk-for-mlo.docx) Prop. reso. to 11be cc34 CIDs on GTK 4 MLO Qi Wang [9 CIDs]

*\*If 410r0 and 411r0 are also discussed then 30’; otherwise 20’*

Discussion:

C: A single SN space, that’s quite wasteful.

A: you need to dupliciate it by AP MLD. Sometime the device can be legacy or MLD.

C:

A:Even if you don’t duplicate it, you can use this.

C: The current legacy device cannot decode it

C: cipher, we cannot handle this. Some cases are corner cases.

C: slide 7, group cast management frame is not duplicated

A: I just focus on the groupcast data frame.

C: There are some corner cases and some pros and cons. My suggestion is to do it later.

A: This is fundanmental thing. R2 is not proper.

C: I’m in favor of this.

1. [288r1](https://mentor.ieee.org/802.11/dcn/21/11-21-0288-01-00be-cc34-cr-emlsr-part3.docx) CC34 CR EMLSR part3 Minyoung Park [14 CIDs-15’]

Discussion:

C: "that intends to initiate a sounding sequence with a STA affiliated with the non-AP MLD that is in the awake state shall begin...

A: The baseline spec doesn’t specify the details. Not sure the 11ax.

C: I think it makes clear.

C: This is shall begin... however, during the TXOP if the AP initiates sounding sequence, we don’t need the inital frame exchange for this. Need to clarify it.

A: we can check it.

C: you can cosider other cases in the figure.

A: This is just example. We don’t draw all possible cases in the spec.

C: Similar. This should not be shall. We may need the static SM power saving. We don’t need the dynamic SM power saving.

1. [319r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0319-00-00be-cc34-cr-emlsr-part4.docx) CC34 CR EMLSR part4 Minyoung Park [8 CIDs-10’]

Discussion:

C:

A:

C: 2917, this is revised. You don’t have the instruction for editor.

A: Got it.

C: The delay field, you’re assuming the delay for the padding.

C: Similar to rojan. I’ll skip.

A: Come back later.

1. [387r2](https://mentor.ieee.org/802.11/dcn/21/11-21-0387-01-00be-cr-for-cids-2093-and-2094.docx) cr-for-2093 and 2094 Yiqing Li [2 CIDs-5’]

Discussion:

C: order of elements. Multi-link element is right?

A: Yes. It’s from the draft.

C: This is always present, Not optional present?

A: You need to include the MLD address even if the MLD rejects it.

C: It can accepted the ML setup just for a single STA.

A: Not related to one link or two link..

**SP: Do you agree to the resolutions provided in doc 11-21/0387r2 for the following CIDs?2093 and 2094**

No objection

1. [302r0](https://mentor.ieee.org/802.11/dcn/21/11-21-0302-00-00be-crs-for-d0-3-multi-link-retransmission-cids.docx) CRs for D0.3 Multi-link retransmission CIDs Rojan Chitrakar [8 CIDs-10’]

Discussion:

C: For retransmission on different link, instead of add the detailed text(subject to ...), you can add the reference 35.3.11

A: I agree. I will bring it back with your suggestion changes.

C: 2598, if we can consider reassociation request frame..., non-AP MLD transmits the request on another link.

A: You’re asking the management frame. But I don’t cover management frame. Data frame is different.

SP: Do you agree to incorporate the changes provided in doc 11-21/0302r2 for CIDs 1064, 1687, 2598, 2714, 2761, 2909, 3338, 3381, 3382 to the next revision of 802.11be draft?

No objection

The meeting is adjourned at 21:58.