IEEE P802.11
Wireless LANs

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| Minutes for TGbn MAC Ad-Hoc teleconferences from March to May 2024 |
| Date: 2024-04-03 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Srinivas Kandala | Samsung |  |  |  |
| Xiaofei Wang | Interdigital |  |  |  |
| Jeongki Kim | Offino |  |  |  |

Abstract

This document contains the meeting minutes for the TGbn MAC ad hoc teleconferences held between March 2024 and May 2024 meetings.

Revisions:

* Rev0: Added the minutes from the telephone conference held on March 28

Abbreviations:

* C: Comment.
* A: Answer.

# Thursday, 28 March 2024, 10:00am – 12:00noon ET (TGbn MAC ad hoc conference call)

Chairman: Xiaofei Wang (Interdigital)

Secretary: Srinivas Kandala (Samsung)

This meeting took place using a webex session.

**Introduction**

1. The Chair (Xiaofei, Interdigital) calls the meeting to order at 10:01am EDT. The Chair introduces himself and the Secretary, Srini (Samsung)
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 and no comments received on the floor
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 “TGbn <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 Jeongki Kim (jeongki.kim.ieee@gmail.com), Xiaofei Wang (xiaofei.wang@interdigital.com) and Srinivas Kandala (srini.k1@samsung.com)

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

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbn (MAC) | 3/28 | Aio, Kosuke | Sony Corporation |
| TGbn (MAC) | 3/28 | Ajami, Abdel Karim | Apple Inc. |
| TGbn (MAC) | 3/28 | Akhmetov, Dmitry | Intel Corporation |
| TGbn (MAC) | 3/28 | Baek, SunHee | LG ELECTRONICS |
| TGbn (MAC) | 3/28 | Bredewoud, Albert | Broadcom Corporation |
| TGbn (MAC) | 3/28 | Byeon, Seongho | SAMSUNG ELECTRONICS |
| TGbn (MAC) | 3/28 | Carney, William | Sony Group Corporation |
| TGbn (MAC) | 3/28 | Cha, Dongju | LG ELECTRONICS |
| TGbn (MAC) | 3/28 | Chaturvedi, Abhishek | Samsung Electronics |
| TGbn (MAC) | 3/28 | Chen, Junbin | TP-Link Corporation Limited |
| TGbn (MAC) | 3/28 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| TGbn (MAC) | 3/28 | Chng, Baw | BAWMAN LLC |
| TGbn (MAC) | 3/28 | Choi, JinHo | SAMSUNG ELECTRONICS |
| TGbn (MAC) | 3/28 | Chu, Liwen | NXP Semiconductors |
| TGbn (MAC) | 3/28 | Chung, Chulho | SAMSUNG |
| TGbn (MAC) | 3/28 | Ciochina, Dana | Sony Corporation |
| TGbn (MAC) | 3/28 | Das, Subir | Peraton Labs |
| TGbn (MAC) | 3/28 | Dong, Xiandong | Xiaomi Communications Co., Ltd. |
| TGbn (MAC) | 3/28 | Ekkundi, Manasi | SAMSUNG ELECTRONICS |
| TGbn (MAC) | 3/28 | Erkucuk, Serhat | Ofinno |
| TGbn (MAC) | 3/28 | Fan, Shuang | Sanechips Technology Co., Ltd. |
| TGbn (MAC) | 3/28 | Fang, Yonggang | MediaTek Inc. |
| TGbn (MAC) | 3/28 | Fischer, Matthew | Broadcom Corporation |
| TGbn (MAC) | 3/28 | Fujimori, Yuki | Canon Research Centre France |
| TGbn (MAC) | 3/28 | Ghosh, Chittabrata | Apple Inc. |
| TGbn (MAC) | 3/28 | Gu, Jaheon | Samsung Electronics Co., Ltd. |
| TGbn (MAC) | 3/28 | Gu, Junrong | Clourney Semiconductor |
| TGbn (MAC) | 3/28 | Gu, Xiangxin | Spreadtrum Communications (Shanghai) Co., Ltd. |
| TGbn (MAC) | 3/28 | GUIGNARD, Romain | Canon Research Centre France |
| TGbn (MAC) | 3/28 | Ha, Taeyoung | Samsung Electronics Co., Ltd. |
| TGbn (MAC) | 3/28 | Haider, Muhammad Kumail | Meta Platforms, Inc. |
| TGbn (MAC) | 3/28 | Handte, Thomas | Sony Group Corporation |
| TGbn (MAC) | 3/28 | Hasabelnaby, Mahmoud | Huawei Technologies Canada; Huawei Technologies Co., Ltd |
| TGbn (MAC) | 3/28 | Hervieu, Lili | CableLabs |
| TGbn (MAC) | 3/28 | Hsu, Yung Lin | National Taiwan University |
| TGbn (MAC) | 3/28 | HUANG, CHIHAN | MediaTek Inc. |
| TGbn (MAC) | 3/28 | Huang, Po-Kai | Intel Corporation |
| TGbn (MAC) | 3/28 | Jang, Insun | LG ELECTRONICS |
| TGbn (MAC) | 3/28 | Kalamkar, Sanket | Qualcomm Incorporated; Qualcomm Technologies, Inc |
| TGbn (MAC) | 3/28 | Kandala, Srinivas | Samsung |
| TGbn (MAC) | 3/28 | Karthik, S. G. | SAMSUNG ELECTRONICS |
| TGbn (MAC) | 3/28 | Kim, Sang Gook | LG ELECTRONICS |
| TGbn (MAC) | 3/28 | Kim, Sanghyun | WILUS Inc. |
| TGbn (MAC) | 3/28 | Kishida, Akira | NTT |
| TGbn (MAC) | 3/28 | Klein, Arik | Huawei Technologies Co., Ltd |
| TGbn (MAC) | 3/28 | Koo, Jonghoe | SAMSUNG ELECTRONICS |
| TGbn (MAC) | 3/28 | Koundourakis, Michail | Samsung Cambridge Solution Center |
| TGbn (MAC) | 3/28 | Kuo, Chih-Chun | MediaTek Inc. |
| TGbn (MAC) | 3/28 | Lee, Hong Won | LG ELECTRONICS |
| TGbn (MAC) | 3/28 | LEE, JOONSOO | Newracom Inc. |
| TGbn (MAC) | 3/28 | Levy, Joseph | InterDigital, Inc. |
| TGbn (MAC) | 3/28 | Li, Weiyi | Spreadtrum Communication USA, Inc |
| TGbn (MAC) | 3/28 | Lou, Hanqing | InterDigital, Inc. |
| TGbn (MAC) | 3/28 | Lu, kaiying | MediaTek Inc. |
| TGbn (MAC) | 3/28 | Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd. |
| TGbn (MAC) | 3/28 | LU, Yuxin | TCL Industries |
| TGbn (MAC) | 3/28 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| TGbn (MAC) | 3/28 | Luo, Hui | Infineon Technologies |
| TGbn (MAC) | 3/28 | Ma, Yongsen | SAMSUNG ELECTRONICS |
| TGbn (MAC) | 3/28 | Magrin, Davide | Meta Platforms Inc. |
| TGbn (MAC) | 3/28 | Max, Sebastian | Ericsson AB |
| TGbn (MAC) | 3/28 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbn (MAC) | 3/28 | Naik, Gaurang | Qualcomm Technologies, Inc |
| TGbn (MAC) | 3/28 | Nayak, Peshal | Samsung Research America |
| TGbn (MAC) | 3/28 | Neishaboori, Azin | General Motors Company |
| TGbn (MAC) | 3/28 | Nezou, Patrice | Canon Research Centre France |
| TGbn (MAC) | 3/28 | Noh, Si-Chan | Newracom Inc. |
| TGbn (MAC) | 3/28 | Park, Sungjin | Senscomm |
| TGbn (MAC) | 3/28 | Patil, Abhishek | Qualcomm Incorporated |
| TGbn (MAC) | 3/28 | Petrick, Albert | InterDigital, Inc. |
| TGbn (MAC) | 3/28 | Quan, Yingqiao | Spreadtrum Communications (Shanghai) Co., Ltd.; Unisoc (Shanghai) Technologies Co., Ltd. |
| TGbn (MAC) | 3/28 | Rosenzweig Arbel, Gil | Renesas Electronics Corporation |
| TGbn (MAC) | 3/28 | Roy, Rishabh | SAMSUNG ELECTRONICS |
| TGbn (MAC) | 3/28 | Ryu, Kiseon | NXP Semiconductors |
| TGbn (MAC) | 3/28 | Sato, Takuhiro | SHARP CORPORATION |
| TGbn (MAC) | 3/28 | Seo, Sangho | Broadcom Corporation |
| TGbn (MAC) | 3/28 | Son, Ju-Hyung | WILUS Inc. |
| TGbn (MAC) | 3/28 | Talarico, Salvatore | Sony Corporation |
| TGbn (MAC) | 3/28 | Tseng, Yen Hsiung | MediaTek Inc. |
| TGbn (MAC) | 3/28 | Tsujimaru, Yuki | Canon |
| TGbn (MAC) | 3/28 | Urabe, Yoshio | Panasonic Holdings Corporation |
| TGbn (MAC) | 3/28 | Wang, Lei | Futurewei Technologies/Huawei Technologies |
| TGbn (MAC) | 3/28 | Wang, Xiaofei | InterDigital, Inc. |
| TGbn (MAC) | 3/28 | Wullert, John | Peraton Labs |
| TGbn (MAC) | 3/28 | Xia, Qing | Sony Corporation |
| TGbn (MAC) | 3/28 | Xu, Yanchao | Amlogic |
| TGbn (MAC) | 3/28 | Xu, Yue | Huawei Technologies Co., Ltd |
| TGbn (MAC) | 3/28 | Yan, Zhongjiang | Northwestern Polytechnical University |
| TGbn (MAC) | 3/28 | Yang, Jay | ZTE Corporation |
| TGbn (MAC) | 3/28 | Yang, Jimmy | Moxa Inc. |
| TGbn (MAC) | 3/28 | Yee, James | MediaTek Inc. |
| TGbn (MAC) | 3/28 | Yoon, Yelin | LG ELECTRONICS |
| TGbn (MAC) | 3/28 | Zhang, John | GuangDong OPPO Mobile Telecommunications Corp., Ltd. |
| TGbn (MAC) | 3/28 | Zhao, Yue | Huawei Technologies Co., Ltd |

1. The Chair reminds that the agenda can be found in [11-24/0633r1](https://mentor.ieee.org/802.11/dcn/24/11-24-0633-01-00bn-mar-may-tgbn-teleconference-agenda.docx). The Chair asks for the comments about the agenda.
* No comments
1. Technical submissions – Channel Access plus Coexistence:
2. [24/0090](https://mentor.ieee.org/802.11/dcn/24/11-24-0090-01-00bn-protected-low-latency-communications-for-mlo.pptx) Protected Low Latency Communications for MLO Serhat Erkucuk (Offino)

Discussion:

* C: what happems to NAV at other STAs if no CTS but get the RTS? No CF-End?
* A: If there is no CTS then there would be a timeout after which they reset their NAV
* C: what new is being proposed here relative to baseline 11be ?
* A: We are talking about possibilities based on baseline. But just want to make sure that the signaling is available. The baseline may need slight modification
* C: Go to option 1, slide 6. Is this already possible in .11be or is there a need for modification in .11bn?
* A: Yes, it is possible in baseline
* C: Why is the CTS NAV is much longer than the Data?
* A: The AP may set it longer depending on the situation
1. [24/0119](https://mentor.ieee.org/802.11/dcn/24/11-24-0119-00-00bn-enhanced-hcca-for-controlled-uhr-scenarios.pptx) Enhanced HCCA for Controlled UHR Scenarios Salvatore Talarico (Sony)
* C: How do you manage this?
* A: There will be a coordinator and the control will given to the AP. We dont claim the scenario works for all environments but works for controlled environment with periodic traffic. The conditions will be set such that no collision swill happen
* C: So the starting STA will have better chance of access
* A: Yes, to avoid it, it is better to give controlling position, with the AP having the starting. But we can discuss details. The main goal is to reduce congestion. It doesnt matter who starts but every STA will have the fair share of the access
1. [24/0467](https://mentor.ieee.org/802.11/dcn/24/11-24-0467-00-00bn-hip-edca-follow-up-legacy-impact.pptx) Hip edca follow up legacy impact Dmitry Akhmetov (Intel)
* C: The first signal is the way for the LL STAs to preempt to adjust the access. This may be agressive. Is there any way of overarching way to limit the agressiveness
* A: Yes, we will need to have some rules otherwise it wont work. Since the DS signal is sent only after a collision and since it is only used for LL. It appears that if it fails once then it appears to be fair. Based on the traffic characteristics even LL can wait for one or two transmissions
* A: This is indeed preemption but different from TXOP preemption. The issue is not preemption but latency handling. But if TXOP is not preemptable then you will fall back to latency. But if you are getting delayed then you have to find another way to improve access
* C: Slide 13: It says half is VO, then the other one uses DS?
* A: Yes
* C: DS will always beat VO
* A: Yes
* C: For longer frame sizes how to explain the difference
* A: For longer frame sizes with higher number of BSS, the network is close to capacity. But VO 99% percentle is much higher than DS.
* A: if we introduce DS then the performance of VO is improved compared to only VO
* C: What is the throughput impact when DS is introduced?
* A: Nothing comes for free. If you start prioritizing some traffic the other gets impacted. For lighter load the impact is not much but for higher loads it will start affecting best effort
* C: After certain number of collisions can the AP adjust the windows to improve
* A: It is not quite that way. After the first collision you will be eligible to send DS. If you want to extend the mechanism to best effort, for a high value of CW and after successful transmission will reset the CW. We are also looking at further to understand how the parameters should be set
* C: No effect on legacy?
* A: Yes, that is what we see
* C: How does it happen if some are accessing the channel more frequently
* A: It is not really frequent. If the network is close to saturation then VO will start getting affected
* C: But use of exponential backoff may be overcompensating for the collisions
* C: The full-buffer best-effort traffic, what is the reason for choosing TXOP to be uniformly distributed
* A: Just to introduce randomness. If all TXOPs are 5 ms then the effects may be different
* C: But whenever best effort traffic, there will be large number of frames, but we should look at 5 ms and look at th eperformance
1. [24/0094](https://mentor.ieee.org/802.11/dcn/24/11-24-0094-00-00bn-probe-before-talk-and-unsolicited-unavailability-announcement-for-co-ex-management.pptx) Probe-before-Talk and Unsolicited Unavailability Announcement for Co-ex Management Qi Wang (Apple, Inc.)
* C: Have you thought about how to scale this for MU transmissions? Is the assumption that the coex will occupy the entire bandwidth? If it is only partial, can we do something about it?
* A: For MU, details need to be work up. Yes, coex does not have to be entire bandwidth and we can extend to others. But our experience is that the impact is on full band, but we can study further
* C: When you are sending PBT-RTS you may be aware of the truncated txop, but AP may not know this value
* A: here the model is that the AP has data to send you and STA based on its coex scenarios, it knows that when it will not be available
* C: So, this is not event based but scheduled-based
* A: Yes, you dont know too-advanced but sometime before
* C: if you know in advance, you can use the second proposal
* A: yes
* C: You said that there are two types of traffic: periodic and aperiodic. How can the STA knows the time and duration of the coex event caused by the aperiodic traffic
* A: The STA does not know the probing time. But if the AP has data then the STA will encode accordingly
* A: on the question of how the STA know about the upcoming coex event, there will be internal device communication which will let STA know about the event
* C: In the simulation, if you fail, you try to retransmit to this STA again and again until successful?
* A: Subject to the retry limit
* C: You switch to another STA after reaching the retry limit. If the STA can inform the AP about possible coexistence events and if a smarter AP can switch to another STA and get back to this STA. This can improve the performance
* A: This is what we are saying. If the STA can indicate of the event to the AP then performance can be improved
* C: But if all STAs indicatig of the upcoming event then the AP can have smarter scheduling
* C: There is a possibility that the STA may not be able to provide it since the channel is busy
* A: If you cannot send it, you cannot
* C: But this will have the AP transmitting even if the STA is not available
1. [23/2078](https://mentor.ieee.org/802.11/dcn/23/11-23-2078-04-00bn-coex-enhancement-for-xr-use-cases.pptx) Coex Enhancement for XR Use Cases Guoqing Li (Meta)
* Delayed to the next meeting
1. AoB: No time for it
2. Adjourn: Adjourned at 12:00 noon

**References:**