IEEE P802.11  
Wireless LANs

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| Minutes for TGbn MAC Ad-Hoc teleconferences from September to November 2024 | | | | |
| Date: 2024-09-27 | | | | |
| Author(s): | | | | |
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| Srinivas Kandala | Samsung Electronics |  |  | [srini.k1@samsung.com](mailto:srini.k1@samsung.com) |
| Jeongki Kim | Offino |  |  |  |

Abstract

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

Revisions:

* Rev0: Added the minutes from the telephone conference held on September 23rd
* Rev1: Added the minutes from the telephone conference held on September 26th
* Rev2: Added the minutes from the telephone conference held on October 7th
* Rev3: Added the minutes from the telephone conferences held on October 14th, 17th, 21st, 24th , and 28th

Abbreviations:

* C: Comment.
* A: Answer.

# Monday, 23 September 2024, 07:00pm – 09:00pm 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 7:01pm 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.
   * 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 Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.coma)), Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com)), and Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))

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

**Name Affiliation**

|  |  |
| --- | --- |
| Ajami, Abdel Karim | Apple Inc. |
| Zhang, Lyutianyang | Huawei Technologies Co., Ltd. |
| Zhang, Jiayi | Ofinno |
| Yee, James | MediaTek Inc. |
| Yang, Jimmy | Moxa Inc. |
| Yang, Jay | ZTE Corporation |
| Yang, Haorui | China Mobile |
| Yang, Hang | Ruijie Networks Co., Ltd. |
| Yan, Zhongjiang | Northwestern Polytechnical University |
| Xu, Yanchao | Amlogic |
| Xiao, Tong | Xiaomi Communications Co., Ltd. |
| Xia, Qing | Sony Corporation |
| Wullert, John | Peraton Labs |
| Wee, Gaius | Panasonic Holdings Corporation |
| Zhang, Maolin | Huawei Technologies Co., Ltd |
| Wang, Xiaofei | InterDigital, Inc. |
| VIGER, Pascal | Canon Research Centre France |
| Urabe, Yoshio | Panasonic Holdings Corporation |
| Talarico, Salvatore | Sony Corporation |
| Sung, Hyeonjun | WILUS Inc. |
| Shirakawa, Atsushi | SHARP CORPORATION |
| Shi, Zhenpeng | Huawei Technologies Co., Ltd |
| Shafin, Rubayet | Samsung Electronics |
| Sato, Takuhiro | SHARP CORPORATION |
| Sakamoto, Ryunosuke | SHARP CORPORATION |
| Sadiq, Bilal | Samsung Research America |
| Ryu, Kiseon | NXP Semiconductors |
| Quan, Yingqiao | Spreadtrum Communications (Shanghai) Co., Ltd.... |
| Quan, Li | ZTE Corporation |
| Wang, Qi | Apple Inc. |
| Qi, Yue | Samsung Research America |
| Zhao, Yue | Huawei Technologies Co., Ltd |
| Zhou, Pei | TCL |
| Zhou, Huixuan | OPPO |
| Petrick, Albert | InterDigital, Inc. |
| Perez, Javier | Ofinno |
| Patwardhan, Gaurav | Hewlett Packard Enterprise |
| Hart, Brian | Cisco Systems, Inc. |
| Hamilton, Mark | CommScope |
| Haider, Muhammad Kumail | Meta Platforms, Inc. |
| Ha, Taeyoung | Samsung Electronics Co., Ltd. |
| Gupta, Binita | Cisco Systems, Inc. |
| Gu, Xiangxin | Spreadtrum Communications (Shanghai) Co., Ltd. |
| Gu, Jaheon | Samsung Electronics Co., Ltd. |
| Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.... |
| Fu, Qingwei | TP-Link Systems Inc. |
| Fischer, Matthew | Broadcom Corporation |
| Fang, Yonggang | MediaTek Inc. |
| Fan, Shuang | Sanechips Technology Co., Ltd. |
| Erkucuk, Serhat | Ofinno |
| Hasabelnaby, Mahmoud | Huawei Technologies Canada; Huawei Technologie... |
| Doppler, Klaus | Nokia |
| Dezfouli, Behnam | Nokia |
| Das, Subir | Peraton Labs |
| Cui, Yaoshen | TP-Link Systems Inc. |
| Coffey, John | Realtek Semiconductor Corp. |
| Chu, Liwen | NXP Semiconductors |
| Choi, JinHo | SAMSUNG ELECTRONICS |
| Chisci, Giovanni | Qualcomm Technologies, Inc |
| CHENG, yajun | Xiaomi Communications Co., Ltd. |
| Chen, Wei-Han | Mediatek Inc |
| Cha, Dongju | LG ELECTRONICS |
| Carney, William | Sony Group Corporation |
| Byeon, Seongho | SAMSUNG ELECTRONICS |
| Baykas, Tuncer | Ofinno |
| Dong, Xiandong | Xiaomi Communications Co., Ltd. |
| Hedayat, Ahmadreza | Apple Inc. |
| Helwa, Sherief | Qualcomm Incorporated; Qualcomm Technologies, Inc |
| Ho, Duncan | Qualcomm Technologies, Inc |
| Park, Sungjin | Senscomm |
| Ouchi, Masatomo | Canon |
| Noh, Si-Chan | Newracom Inc. |
| Nayak, Peshal | Samsung Research America |
| Naik, Gaurang | Qualcomm Technologies, Inc |
| Motozuka, Hiroyuki | Panasonic Holdings Corporation |
| Montemurro, Michael | Huawei Technologies Co., Ltd |
| Minotani, Jun | Panasonic Holdings Corporation |
| Mehrnoush, Morteza | Apple Inc. |
| Ma, Yongsen | SAMSUNG ELECTRONICS |
| Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| LU, Yuxin | TCL Industries |
| Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.... |
| Lou, Hanqing | InterDigital, Inc. |
| Li, Weiyi | Spreadtrum Communication USA, Inc |
| Lee, Hong Won | LG ELECTRONICS |
| Lanante, Leonardo | Ofinno |
| Kuo, Chih-Chun | MediaTek Inc. |
| Klein, Arik | Huawei Technologies Co., Ltd |
| Kim, Suhwook | SAMSUNG ELECTRONICS |
| Kim, Sang Gook | LG ELECTRONICS |
| Kim, Jungjun | Samsung Electronics |
| Kim, Geon Hwan | LG ELECTRONICS |
| Kandala, Srinivas | Samsung |
| Kalamkar, Sanket | Qualcomm Incorporated; Qualcomm Technologies, Inc |
| Kain, Carl | Noblis, Inc.; USDoT |
| Johnsson, Kerstin | Nokia |
| Inoue, Kyosuke | SHARP CORPORATION |
| Huang, Po-Kai | Intel Corporation |

1. The Chair reminds that the agenda can be found in [11-24/1643r2](https://mentor.ieee.org/802.11/dcn/24/11-24-1643-02-00bn-sept-nov-tgbn-teleconference-agenda.docx). The Chair asks for the comments about the agenda.
   * Document 24/1452 author coud not attend the meeting and has been removed from agenda
   * Document 24/1473 will be presented by Qisheng Huang
   * No comments from the participantd
   * Agenda approved by unanimous consent
2. Annoucements:

The chair made the following announcement:

* + - Presentations to be uploaded at least 24 hours prior to the scheduled meeting. Those not uploaded in time will be removed from the queues.
    - Topics with many contributions and they might discuss similar concepts/issues. Please check with other members to harmonize/consolidate (co-authoring, harmonized SPs, etc).
    - Time allocated for each presentation is limited to 15 mins (20 if planned SP run). Make sure that contribution is presented well within this time limit and that you leave enough room for any Q&As (preferred). If no time left for Q&As then please use TGbn reflector.

1. Technical Submissions-MAP:
   1. [24/1467](https://mentor.ieee.org/802.11/dcn/24/11-24-1467-00-00bn-framework-of-multi-ap.pptx) Framework of Multi-AP Suhwook Kim (Samsung)

Discussion

* + - C: In agreement that both residential and enterprise should be addressed. On slide 5, it is stated that enterprise does not need much information over the air as it can be done otherwise. Also, having over-the DS to be in 11bn scope with a light touch is helpful
    - A: We agree that we need to consider the enterprise situation
    - C: Slide 5, agree with other commneter that we have coordination in both residential and enterprise. In the table, you say that there may be privacy issues, can you comment on it?
    - A: But if there is multi-AP sharing, there will be privacy issues
    - C: Last row of the table, what is CSN?
    - A: Coordinated Spatial Nulling
    - C: Is it different from CBF?
    - A: they are similar
    - C: It is said that there is no controller in residential. In the future I expect that there would be APs that can fulfill the coordinator function. So, we should not exclude the case.
    - A: Agreed
  1. [24/1473](https://mentor.ieee.org/802.11/dcn/24/11-24-1473-01-00bn-map-co-edca-to-improve-the-performance-of-edging-sta-follow-up.pptx) MAP co-EDCA to improve the perf. of edging STA Follow up Li Quan

Discussion

* + - C: Slide 5, looks like you are using saturated traffic models. How does this look when you have some thing like video, which is more periodic and not saturated?
    - A: We use saturated traffic model because this exposes the problem. For other models, this problem exists but not as severe, so showing the most important case here
    - C: I understand, but I dont expect saturated traffic models usually do well with VO
    - A: Do you mean that the real video would perform well in saturated traffic model and we have this issue in our simulation
    - C: It seem that AC\_VO is not a good way to have saturated traffic model
    - C: Trying to understand what the new item that are you are trying to address in the Straw Poll
    - A: The new feature is that the STA will provide new information and the associated AP will share this information with the other BSS and we will allow the STA to recommend the desired EDCA parameters for other STAs
    - C: It appears that some of these are already in the spec. May be good to double check
    - C: Slide 4. How does STA 1 know whether it is hidden or not? Is it a hidden node or channel access problem? If it is hidden, you want the AP to adjust the parameters for STA2 to STA3 and it seems that the AP needs to determine the edging and non-edging STAs then we may end up reducing the system throughput and probably not an efficient network decision to make
    - A: We are still digging out the most important statistic, which can derive the solution to the hidden node problem. I think this is an implementation problem and we are considering some prediction models and trying to judge whether we are able to solve the hidden node problem. The AP can just apply the recommendation from STA1 and it may know most of the statistic and the AP can consider the recommendation and may use the statistic measured by itself
    - C: Slide 6, what is the definition of channel access time
    - A: STA will contend for the channel and has one PPDU to transmit and time take to accessi the channel and the PPDU transmission
  1. [24/1595](https://mentor.ieee.org/802.11/dcn/24/11-24-1595-00-00bn-scope-of-mapc-and-roaming-standardization.pptx) Scope of MAPC and Roaming Standardization Brian Hart

Discussion

* + - C: Before defining the interfaces, we should decide on framework and architecture is and we need to understand them before we have the definitions
    - A: Understand the comment on dependency on architecture
    - C: not necessarily not complementary, we should just figure them out
    - A: Yes
    - C: One question on AP interfaces, slide 5 and slide 6, what are the main functions of the SME in the interfaces:
    - A: SME typically represents the AP vendor; enabling/disabling, policy, request/response, agreeing/disagreeing coming from policy engine and then the scheduler. Interface 3 is just trying to get this information securely to the peer entity
    - C: What is your understanding of mimumum set (lowest common denominator). While doing this it may preclude some other class of solutions
    - A: That is not the intention. Lowest common denominator still needs to show value to customer. To the earlier discussion, we want to solve both residential and enterprisee
    - C: Slide 5, step 3 – these two APs can only share the management frame and not the control frame?
    - A: My opinion is that there will be latency in this path and there will be encryption etc and I am not relying the interface to be fast. The control information would be sent over the wireless interface. Still it is a management and you should be able to handle low latency. However for C-TDMA, it should go over the air
  1. [24/1596](https://mentor.ieee.org/802.11/dcn/24/11-24-1596-01-00bn-consideration-of-map-coordination-on-npca-channel.pptx) Consideration of MAP coordination on NPCA channel Li Yan

Discussion

* + - C: Generally agree with the line of thinking. When NPCA is jointly involved with multi-AP, NPCA should be involved in the set up. However, in slide 5, each coordination sequence should be discussed separately, since in some cases, there may be some overlap, it may not be an issue for some coordination sequence
    - A: We have not given the detailed information on how a coordinated mechanism should work with NPCA. Yes, we should have more specific discussion for each of the mechanisms. In my thinking C-TDMA would work with NPCA and we can talk more about other groups
    - C: In case we have two APs with different NPCA primary channels. In your proposal, you want these NPCA primary channels to be aligned. Question is if two APs have two different NPCA primary channels do we need coordination? It is better to have them separate and not have coordination
    - A: In some examples, two APs have the same primary channel then it may not be easy to have different NPCA primary channels and keep them non-overlapping. However, in the case where the APs have wide bandwidth, then we can easily separate them out
    - C: Slide 6. It seems that the RNR carries only the basic information, TBTT offset etc. Do you want to add other information to RNR?
    - A: Yes, we need to add bandwidth information in RNR
    - C: If we have the two APs to have to address NPCA rules, we may want to add these rules here
    - A: Yes, we can decide on further coordination or not
    - C: In NPCA, the TXOP on the NPCA primary channel can be taken only if the peers see the same OBSS. Taking that view, the two APs and the two STAs should be the same OBSS, only then the NPCA transmissions will be successful. Any thoughts on that and what can be provided?
    - A: If I understand the question, AP1 may detect OBSS PPDU and AP2 may not. In this situation, the APs can exchange the AP list and for the same neighboring AP if they observe OBSS they can switch the channel. If the AP1 detects OBSS PPDU from neighboring AP but is not detected by AP2, we should not consider coordination. So the APs should exchange the list and then they have to coordinate

1. Technical Submissions-NPCA Part 1:
   1. [24/0868](https://mentor.ieee.org/802.11/dcn/24/11-24-0868-00-00bn-additional-considerations-on-non-primary-channel-access.pptx) Additional Considerations on NPCA Leonardo Lanante

Discussion

* + - C: Slide 5, if the STA detects transmission on NPCA primary channel, it will switch back to primary channel. In this case how does the STA set the NAV timer on the NPCA primary channel?
    - A: Our thinking is that it is a different time in the secondary channel, which is only relevant if it is in the NPCA, is that your question? Or you are thinking of using the same NAV timer?
    - C: For simplicity, it is better to have same timer. Do you think that they have to be different?
    - A: That is our initial thinking but we can consider same. But we do not want the STA that does not use NPCA performs better than NPCA
    - C: Slide 3, elaborate on physical CS
    - A: I mean that the CS can be detected from the PPDU, either a physical transmission or virtual
    - C: How do you know that the PPDU is covered by the NPCA primary channel
    - A: Based on the energy detection
    - C: But it may not be from the same source?
    - A: We can discuss further – for example check the bandwidth in the primary channel or high energy occuring in the secondary channel
  1. [24/1125](https://mentor.ieee.org/802.11/dcn/24/11-24-1125-01-00bn-considerations-on-switching-for-npca.pptx) Considerations on switching for NPCA Dongju Cha

Discussion

* + - C: On second bullet in slide 8, it feels like DSO scope. If we agree on DSO, we can think about this case
    - A: Yes
    - C: But we have not agreed about DSO. We can consider the case with DSO
    - C: Slide 4, for pre-HE PPDU, do you have any feel if the bandwidth is sigaled and if it is widely signaled in legacy implementations?
    - A: From my knowledge we can get the bandwith from HT-SIG and VHT-SIG-A field
    - C: So you are saying that sufficient information is available
    - A: Yes
    - C: Regarding DSO, I dont think we should mix NPCA and DSO as different devices have different bandwidths. I dont think we should a restriction that NPCA primary should be in operating bandwidth
    - C: Agree with the other commenter, then NPCA priary outside the operating bandwidth it is like DSO on which we do not have an agreement
    - C: Slide 7, channel switch delay from primary to NPCA primary, can you give an example? In EMLSR, there is only one switch delay, why are there two?
    - A: It can be dependent on the channel conditions, but I need to think on the details. Can i get back after thinking?
    - C: Sure, we can discuss further. But it will not be dependent on channel conditions and they would be same
    - C: The channel switch is a hardware capability and is known in advance and can be set. However, due to the differences to NAV timers, the channel switch time could be different
    - A: For pre-11ax, the switch delay can be hardware limited

1. There is no other business
2. Session adjourned at 9:00 PM ET

# Thursday, 26 September 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.
   * 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 Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.coma)), Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com)), and Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))

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

**Name Affiliation**

|  |  |
| --- | --- |
| Zhou, Huixuan | OPPO |
| Zhao, Yue | Huawei Technologies Co., Ltd |
| Yahya, Salim | VESTEL,IMU |
| Yan, Zhongjiang | Northwestern Polytechnical University |
| Xiao, Tong | Xiaomi Communications Co., Ltd. |
| Zhou, Lei | H3C Technologies Co., Limited |
| Sun, Bo | Sanechips Technology Co., Ltd. |
| Talarico, Salvatore | Sony Corporation |
| SUH, JUNG HOON | Huawei Technologies Canada; Huawei Technologie... |
| Zhong, Ke | Ruijie Networks Co.,Ltd. |
| Tanaka, Yusuke | Sony Corporation |
| Sung, Hyeonjun | WILUS Inc. |
| Tsujimaru, Yuki | Canon |
| Yang, Jay | ZTE Corporation |
| Urabe, Yoshio | Panasonic Holdings Corporation |
| Zhou, Pei | TCL |
| Zhang, Lyutianyang | Huawei Technologies Co., Ltd. |
| Val, Inaki | MaxLinear, Inc. |
| Verenzuela, Daniel | Sony Group Corporation |
| Wullert, John | Peraton Labs |
| Zhang, Jiayi | Ofinno |
| Yang, Haorui | China Mobile |
| Wang, Xiaofei | InterDigital, Inc. |
| Yee, James | MediaTek Inc. |
| Wee, Gaius | Panasonic Holdings Corporation |
| Yano, Kazuto | Advanced Telecommunications Research Institute... |
| Wang, Ying | InterDigital, Inc. |
| Zhao, Xuwen | TCL |
| Xu, Yanchao | Amlogic |
| AbidRabbu, Shaima' | VESTEL |
| Seo, Sangho | Broadcom Corporation |
| Fang, Yonggang | MediaTek Inc. |
| Fischer, Matthew | Broadcom Corporation |
| Fu, Qingwei | TP-Link Systems Inc. |
| Fujimori, Yuki | Canon Research Centre France |
| Ghosh, Chittabrata | Apple Inc. |
| Gu, Jaheon | Samsung Electronics Co., Ltd. |
| Gu, Xiangxin | Spreadtrum Communications (Shanghai) Co., Ltd. |
| Fan, Shuang | Sanechips Technology Co., Ltd. |
| Gupta, Binita | Cisco Systems, Inc. |
| Handte, Thomas | Sony Group Corporation |
| Hart, Brian | Cisco Systems, Inc. |
| Hasabelnaby, Mahmoud | Huawei Technologies Canada; Huawei Technologie... |
| Hu, Chunyu | Spreadtrum Communications US |
| huang, kaikai | Nokia |
| Huang, Po-Kai | Intel Corporation |
| kamath, Manoj | Broadcom Corporation |
| Ha, Taeyoung | Samsung Electronics Co., Ltd. |
| Erkucuk, Serhat | Ofinno |
| Ekkundi, Manasi | SAMSUNG ELECTRONICS |
| Dezfouli, Behnam | Nokia |
| Aio, Kosuke | Sony Corporation |
| Ajami, Abdel Karim | Apple Inc. |
| Bai, Jiyang | TCL |
| Baykas, Tuncer | Ofinno |
| Bredewoud, Albert | Broadcom Corporation |
| Byeon, Seongho | SAMSUNG ELECTRONICS |
| Carney, William | Sony Group Corporation |
| Che, Hui | Ruijie Networks Co., Ltd |
| Chen, Junbin | TP-Link Systems Inc. |
| Chen, Wei-Han | Mediatek Inc |
| CHENG, yajun | Xiaomi Communications Co., Ltd. |
| Chisci, Giovanni | Qualcomm Technologies, Inc |
| Choi, JinHo | SAMSUNG ELECTRONICS |
| Chung, Chulho | SAMSUNG |
| Coffey, John | Realtek Semiconductor Corp. |
| Cui, Yaoshen | TP-Link Systems Inc. |
| Das, Subir | Peraton Labs |
| Kandala, Srinivas | Samsung |
| Karthik, S. G. | SAMSUNG ELECTRONICS |
| Kedem, Oren | Maxlinear |
| Kim, Jungjun | Samsung Electronics |
| McCann, Stephen | Huawei Technologies Co., Ltd |
| Mutgan, Okan | Nokia |
| Nayak, Peshal | Samsung Research America |
| Neishaboori, Azin | General Motors Company |
| Nezou, Patrice | Canon Research Centre France |
| Park, Sungjin | Senscomm |
| Patil, Abhishek | Qualcomm Incorporated |
| Perez, Javier | Ofinno |
| Pettersson, Charlie | Ericsson AB |
| Quan, Li | ZTE Corporation |
| Quan, Yingqiao | Spreadtrum Communications (Shanghai) Co., Ltd.... |
| Ratnam, Vishnu | Samsung Research America |
| RISON, Mark | Samsung Cambridge Solution Centre |
| Roy, Rishabh | SAMSUNG ELECTRONICS |
| Sadiq, Bilal | Samsung Research America |
| Sato, Takuhiro | SHARP CORPORATION |
| Schelstraete, Sigurd | MaxLinear |
| Ma, Yongsen | SAMSUNG ELECTRONICS |
| Shi, Zhenpeng | Huawei Technologies Co., Ltd |
| Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.... |
| Kim, Sang Gook | LG ELECTRONICS |
| Kim, Sanghyun | WILUS Inc. |
| Kim, Suhwook | SAMSUNG ELECTRONICS |
| Kishida, Akira | NTT |
| Klein, Arik | Huawei Technologies Co., Ltd |
| Koo, Jonghoe | SAMSUNG ELECTRONICS |
| Koundourakis, Michail | Samsung Cambridge Solution Center |
| Kuo, Chih-Chun | MediaTek Inc. |
| Lalam, Massinissa | SAGEMCOM BROADBAND SAS |
| Lanante, Leonardo | Ofinno |
| Lee, Hong Won | LG ELECTRONICS |
| Li, Weiyi | Spreadtrum Communication USA, Inc |
| li, yan | ZTE Corporation |
| Lim, Dong Guk | LG ELECTRONICS |
| Lim, Yeon Geun | Newracom Inc. |
| LIU, QINGLAI | Panasonic Holdings Corporation |
| Lou, Hanqing | InterDigital, Inc. |
| LU, Yuxin | TCL Industries |
| Montemurro, Michael | Huawei Technologies Co., Ltd |

1. The Chair reminds that the agenda can be found in [11-24/1643r4](https://mentor.ieee.org/802.11/dcn/24/11-24-1643-04-00bn-sept-nov-tgbn-teleconference-agenda.docx). The Chair asks for the comments about the agenda.
   * No comments. Agenda is approved
2. Annoucements:
   * Chair reminds that presenters will have 15 minutes for presentations that do not have SPs associated, else 20 minutes if they have SPs associated
3. Technical Submissions-Security + Relay:
4. [24/0547](https://mentor.ieee.org/802.11/dcn/24/11-24-0547-00-00bn-secure-control-frames-follow-up.pptx) Secure Control frames - Follow Up Abhishek Patil

Discussion

* + C: I would like to understand the attack scenario. In slide 4, second bullet, if the attacker transmits then false information will be there. So I would like to understand when the attacker will transmit the frame as the BA frame will be sent withink SIFS after the soliciting frame.
  + A: When the BA frames are sent, the transmissions will be blocked and then the attacker will inject a such that originator will believe that all frames were received correctly

1. [24/0535](https://mentor.ieee.org/802.11/dcn/24/11-24-0535-00-00bn-trigger-ba-and-bar-protection-follow-up.pptx) Trigger, BA, and BAR Protection follow up Po-kai Huang

Discussion

* + C: Need to look at the impact of the vulnerability that you are trying to protect and the cost of protecting the vulnerability and if someone else can get around what you are protecting. My concerns are the encryption overhead for protecting control frames is huge. And if you start taking the protection it will start taking medium time. If the attacker can jam the channel and accomplsih the same thing, we can look at this and see ultimately what we are accomplishing. So we need to understand what we are gaining
  + A: It is only for control frames, so the overhead may not be much. Adding 28 bytes to the control frame for 4 ms. Comparing the attack vector to jamming is not the same. In jamming the frame is dropped but no negative effect otherwise
  + C: You mentioned that each key is at the MLD AP level. So how does this work for Multi-AP. Since the authentication is at the AP MLD level, i am not sure how this gets applied to Multi-AP
  + A: This presentation does not address Multi-AP level and focusses only on one BSS
  + C: Question regarding padding. Good thing to add padding after MIC, but however this may tighten the time to send the BAR
  + A: Why do you need to send BAR as an immediate response?
  + C: Some misunderstanding
  + A: Yes, for BA, we handle with the padding. BAR is not sent as an immediate response

1. [24/0820](https://mentor.ieee.org/802.11/dcn/24/11-24-0820-00-00bn-scs-proxy-for-relay.pptx) SCS proxy for relay Li Yan

Discussion

* + None

1. [24/1565](https://mentor.ieee.org/802.11/dcn/24/11-24-1565-00-00bn-further-considerations-on-data-unit-delivery-using-relaying.pptx) Further considerations on data unit delivery using relaying Serhat Erkucuk

Discussion

* + C: I am little bit perturbed with OOO delivery to upper layers. Part of it is to make sure that we are complying with 802.1 and the expectation is in-order delivery. If OOO delivery is done for the data that does not have sequence numbers, then there will be issues. It is better to have reordering buffer at STA 2
  + A: I agree with you in general. Then we have to change our approach with OOO delivery. Especially to be able to support low-latency traffic. I understand the complexity but there is a tradeoff

1. [24/1572](https://mentor.ieee.org/802.11/dcn/24/11-24-1572-00-00bn-enhancements-on-relaying-for-uhr.pptx) Enhancements on Relaying for UHR Tuncer Baykas

Discussion

* + None

1. [24/1578](https://mentor.ieee.org/802.11/dcn/24/11-24-1578-00-00bn-sounding-procedure-for-relay-operation.pptx) Sounding Procedure for Relay Operation Jiayi Zhang

Discussion

* + C: Why should the STA2 to sen feedback 2 to STA1
  + A: This is also like relay
  + C: What is the purpose as that is the feedback from STA3 to STA2? Why does STA1 need CSI between STA2 and STA3
  + A: AP1 may need the CSI between relay and destination. This is since relay will be moving, so getting the CSI may make AP to make decisions
  + C: You mentioned that the relay is a mobile device. So, when the relay moves both the channels change. Is this the typical case? If the relay is mobile the channels are not stable. If itmisnt a typical case, isnt relay stationary? If the relay is stationary then you will not need the CSI
  + A: But these days relays could be a cell phone in which case the channels may rapdly change
  + C: Here you mention relay STA, but you can use all the measurements to select the relay by checking the RSSI and CSI.
  + A: I agree
  + C: Slide 3, you probably do not need to have a report request and can be part of the trigger
  + A: Yes, this figure was from another contribution

1. Technical Submissions-NPCA Part 1:
2. [24/1155](https://mentor.ieee.org/802.11/dcn/24/11-24-1155-00-00bn-further-discussions-on-npca.pptx) Further discussions on NPCA Sanghyun Kim

Discussion

* + C: Slide 8, do you envision the specification to define these two modes that a STA can operate in mode 1 and mode 2? What is the motivation?
  + A: The two modes are proposed to provide enough degrees of freedom for implementer. This is because some implementers may only support mode 1
  + C: In that case, why not just the STAs do not enable NPCA mode if the NPCA primary is outside the operating channel
  + A: Yes, it could be that simple. But when an AP changes the NPCA primary channel, then the STA may or may not be able to follow it and having the two modes would help
  + C: Slide 3, third bullet. Can you clarify how the benefits are accomplished for mode 1?
  + A: For some cases, even if the STA support NPCA but may not be able to based on the NPCA primary channel location
  + C: Slide 3, STA2 and STA3 are hidden nodes for OBSS1. STA1 switches to NPCA priarmy channel and subsequently switched by STA2 and STA3. How does the AP know that STA2 and STA3 are switching?
  + A: AP does not know but these STAs may transmit frames to the AP when AP learns about their switch
  + C: But most of the transmissions will be downlink and they may not get a chance to transmit
  + A: Agree
  + C: Slide 5, NPCA primary channel location is somewhat implementation dependent, so I am wondering the rule in this slide may be in conflict with the channel measurement and the rule may not help
  + A: There might not be any rule for NPCA selection. This slide is merely trying to provide some guidance. AP can select any NPCA primary channel. But AP can use some conditions for selecting the primary channel.

1. [24/1218](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx) NPCA - next level discussions Gaurang Naik

Discussion

* + Discussion delayed to the next session, which will be on Oct. 7

1. AOB
   * Chair announced that the next meeting is on Oct. 7
   * There is no other business
2. Session adjourned at 12:00 PM ET

# Monday, 7 October 2024, 07:00pm – 09:00pm 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 7:01pm EDT. The Chair introduces himself and the Secretary, Srini (Samsung)
2. The Chair reminds that the agenda can be found in [11-24/1643r6](https://mentor.ieee.org/802.11/dcn/24/11-24-1643-06-00bn-sept-nov-tgbn-teleconference-agenda.docx). The Chair asks for the comments about the agenda. Receiving no comments or objections, the agenda is approved
   * No comments. Agenda is approved
3. 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 responds.
4. The Chair goes through the IEEE copyright policy and no comments received on the floor
5. 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 Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.coma)), Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com)), and Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Affiliation** | |  |
| Koo, Jonghoe | SAMSUNG ELECTRONICS | | |
| Byeon, Seongho | SAMSUNG ELECTRONICS | | |
| Zhang, Lyutianyang | Huawei Technologies Co., Ltd. | | |
| Fischer, Matthew | Broadcom Corporation | | |
| Klein, Arik | Huawei Technologies Co., Ltd | | |
| Kishida, Akira | NTT |  |  |
| Zhang, Jiayi | Ofinno |  |  |
| Kim, Sang Gook | LG ELECTRONICS | |  |
| Zhao, Yue | Huawei Technologies Co., Ltd | | |
| Yukawa, Mitsuyoshi | Canon |  |  |
| Chu, Liwen | NXP Semiconductors | | |
| Kuo, Chih-Chun | MediaTek Inc. | |  |
| Kim, Jungjun | Samsung Electronics | | |
| Lee, Gwangho | Korea National University of Transportation | | |
| Yee, James | MediaTek Inc. | |  |
| Lee, Hong Won | LG ELECTRONICS | |  |
| Yano, Kazuto | Advanced Telecommunications Research Institute... | | |
| Fang, Yonggang | MediaTek Inc. | |  |
| Yang, Jimmy | Moxa Inc. |  |  |
| Levy, Joseph | InterDigital, Inc. | |  |
| Li, Weiyi | Spreadtrum Communication USA, Inc | | |
| Yoon, Yelin | LG ELECTRONICS | |  |
| Kim, Geon Hwan | LG ELECTRONICS | |  |
| Jang, Insun | LG ELECTRONICS | |  |
| Fujimori, Yuki | Canon Research Centre France | | |
| Gupta, Binita | Cisco Systems, Inc. | |  |
| Hart, Brian | Cisco Systems, Inc. | |  |
| Hasabelnaby, Mahmoud | Huawei Technologies Canada; Huawei Technologie... | | |
| Hedayat, Ahmadreza | Apple Inc. | |  |
| Gu, Xiangxin | Spreadtrum Communications (Shanghai) Co., Ltd. | | |
| Hervieu, Lili | CableLabs | |  |
| Hsu, Yung Lin | National Taiwan University | | |
| HUANG, CHIHAN | MediaTek Inc. | |  |
| Huang, Po-Kai | Intel Corporation | |  |
| Adachi, Tomoko | TOSHIBA Corporation | | |
| Gu, Jaheon | Samsung Electronics Co., Ltd. | | |
| Ajami, Abdel Karim | Apple Inc. | |  |
| Inohiza, Hirohiko | Canon |  |  |
| Inoue, Kyosuke | SHARP CORPORATION | | |
| Asai, Yusuke | Nippon Telegraph and Telephone Corporation (NTT) | | |
| Bai, Jiyang | TCL |  |  |
| Yang, Jay | ZTE Corporation | |  |
| Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.... | | |
| Kamel, Mahmoud | Interdigital Inc. | |  |
| Baykas, Tuncer | Ofinno |  |  |
| Kandala, Srinivas | Samsung |  |  |
| Zhong, Ke | Ruijie Networks Co.,Ltd. | | |
| li, yan | ZTE Corporation | |  |
| Lim, Yeon Geun | Newracom Inc. | |  |
| Cha, Dongju | LG ELECTRONICS | |  |
| Norouzi, Sara | Huawei Technologies Canada; Huawei Technologie... | | |
| Tseng, Yen Hsiung | MediaTek Inc. | |  |
| Taori, Rakesh | Infineon Technologies | | |
| Ouchi, Masatomo | Canon |  |  |
| Tanaka, Yusuke | Sony Corporation | |  |
| Chisci, Giovanni | Qualcomm Technologies, Inc | | |
| Park, Minyoung | Apple Inc. | |  |
| Park, Sungjin | Senscomm | |  |
| Patil, Abhishek | Qualcomm Incorporated | | |
| Sung, Hyeonjun | WILUS Inc. | |  |
| Perez, Javier | Ofinno |  |  |
| Sun, Bo | Sanechips Technology Co., Ltd. | | |
| Cui, Yaoshen | TP-Link Systems Inc. | | |
| SUH, JUNG HOON | Huawei Technologies Canada; Huawei Technologie... | | |
| Son, Ju-Hyung | WILUS Inc. | |  |
| Quan, Yingqiao | Spreadtrum Communications (Shanghai) Co., Ltd.... | | |
| Shirakawa, Atsushi | SHARP CORPORATION | | |
| Choi, JinHo | SAMSUNG ELECTRONICS | | |
| Ha, Taeyoung | Samsung Electronics Co., Ltd. | | |
| Shi, Zhenpeng | Huawei Technologies Co., Ltd | | |
| Roy, Rishabh | SAMSUNG ELECTRONICS | | |
| Shafin, Rubayet | Samsung Electronics | | |
| Serizawa, Kazunobu | Advanced Telecommunications Research Institute... | | |
| Ryu, Kiseon | NXP Semiconductors | | |
| Sadiq, Bilal | Samsung Research America | | |
| Schelstraete, Sigurd | MaxLinear | |  |
| Sakamoto, Ryunosuke | SHARP CORPORATION | | |
| Urabe, Yoshio | Panasonic Holdings Corporation | | |
| Sato, Takuhiro | SHARP CORPORATION | | |
| Dezfouli, Behnam | Nokia |  |  |
| Nogami, Toshizo | SHARP CORPORATION | | |
| LIU, QINGLAI | Panasonic Holdings Corporation | | |
| Lou, Hanqing | InterDigital, Inc. | |  |
| Yamada, Ryota | SHARP CORPORATION | | |
| Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.... | | |
| Che, Hui | Ruijie Networks Co., Ltd | | |
| Fan, Shuang | Sanechips Technology Co., Ltd. | | |
| Xu, Yanchao | Amlogic |  |  |
| LU, Yuxin | TCL Industries | |  |
| Ma, Yongsen | SAMSUNG ELECTRONICS | | |
| Xiao, Tong | Xiaomi Communications Co., Ltd. | | |
| Erkucuk, Serhat | Ofinno |  |  |
| Xia, Qing | Sony Corporation | |  |
| Chen, Wei-Han | Mediatek Inc | |  |
| Mehrnoush, Morteza | Apple Inc. | |  |
| Wullert, John | Peraton Labs | |  |
| Wei, Dong | Guangdong OPPO Mobile Telecommunications Corp.... | | |
| Minotani, Jun | Panasonic Holdings Corporation | | |
| Montemurro, Michael | Huawei Technologies Co., Ltd | | |
| Wee, Gaius | Panasonic Holdings Corporation | | |
| Motozuka, Hiroyuki | Panasonic Holdings Corporation | | |
| Wang, Ying | InterDigital, Inc. | |  |
| Dong, Xiandong | Xiaomi Communications Co., Ltd. | | |
| Naik, Gaurang | Qualcomm Technologies, Inc | | |
| Wang, Xiaofei | InterDigital, Inc. | |  |
| CHENG, yajun | Xiaomi Communications Co., Ltd. | | |
| NANDAGOPALAN, SAI SHANKAR | Synaptics Inc | |  |
| Nayak, Peshal | Samsung Research America | | |
| Noh, Si-Chan | Newracom Inc. | |  |
| Coffey, John | Realtek Semiconductor Corp. | | |

1. Announcements
   * Chair reminds that presenters will have 15 minutes for presentations that do not have SPs associated, else 20 minutes if they have SPs associated
2. Technical Presentations -NPCA Part 2:
3. [24/1218](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx) NPCA - next level discussions Gaurang Naik [Q&A]

Discussion

* + C:Slide 8, there are some contributions are talking about their view of their problem. For example if a STA detects transmisison from OBSS, then the STA should switch to NPCA and if it detects from an AP that is not an OBSS then it shall not jump to the NPCA. So, why not just use this principle?
  + A: While I agree that your mechanism mitigates slightly it will not solve the problem completely since the STA has to track all APs and unless there is a way to monitor and enforce. The problem would still be there
  + C: Question on switch and switch back delay. Can you provide an example where these are different?
  + A: This is a very implementation-specific and it is not easy for me to say why this will be different. If the implementation is such that they are identical or different, you can indicate them accordingly. Also, in EMLSR and EMLMR, you have both switch and switch-back delay
  + C: I do not think that there will be too different and a single field may be sufficient

1. [24/1222](https://mentor.ieee.org/802.11/dcn/24/11-24-1222-01-00bn-npca-follow-up.pptx) NPCA Follow up Liwen Chu

Discussion

* + C: Slide 3, You have analyzed the NPCA primary channel does not cover the operation channel. This is like DSO. Do you think DSO is a mode of NPCA or will it be another mode?
  + A: This is NPCA.The STA may not use the full bandwidth as operational channel
  + C: if the other channel is not in the operating channel, then it would be DSO
  + A: We have different opinions on what is DSO
  + C: Question on NPCA Switch Threshold. Do you need to subtract the switch delay and switch back delay to see if it reches the NPCA switch threshold
  + A: Tthe switch and switch back should be included in the calculation of the time available and apply the threshold

1. [24/1259](https://mentor.ieee.org/802.11/dcn/24/11-24-1259-02-00bn-sp-based-non-primary-channel-access-follow-up.pptx) Sp-based non-primary channel access follow-up Yue Zhao

Discussion

* + C: You validate OBSS PPDU. In the PPDU you check the NAV. If the NAV is too short, will you wait until the end of the SP or switch sooner
  + A: Open to it, but switching when the shorter timer ends; either the TXOP ends or SP ends
  + C: It sounds like NPCA based TXOP
  + C: Slide 6, all scenarios have SP overlapping with R-TWT. From this, I feel that BSS2 and BSS3 are being penalized and they cannot use their SPs
  + A: There is no penalty and BSS 1 will be using primary and it is better for BSS2 and BSS# to switch their operating channels
  + C: You are considering the TXOP based NPCA. If the SP based NPCA, then how to support legacy device as legacy has no idea of the R-TWT. If TXOP based SPCA, then it is ok, but problem if it is SP based NPCA to support legacy
  + A: There are beneficial scenarios for SP based NPCA. If the primary is occupied, then legacy may be affected. But if primary channel is too busy legacy would be still affected and there would not be any more impact on legacy

1. [24/1260](https://mentor.ieee.org/802.11/dcn/24/11-24-1260-00-00bn-further-considerations-on-npca.pptx) Further considerations on NPCA Liuming Lu

Discussion

* + No time for discussion

1. [24/1093](https://mentor.ieee.org/802.11/dcn/24/11-24-1093-00-00bn-special-scenarios-in-non-primary-channel-access.pptx) Special scenarios in Non-Primary Channel Access Sindhu Verma

* Postponed to a subsequent meeting as the presenter was not available

1. [24/1104](https://mentor.ieee.org/802.11/dcn/24/11-24-1104-01-00bn-some-details-on-npca.pptx) Some details on NPCA Seongho Byeon

Discussion

* + C: Slide 9, third bullet, is it same as the NPCA duration
  + A: No, it is not. It is a shorter duration if the STA does not receive the ICF, it will switch back to the primary channel
  + C: If the OBSS is still ongoing on the primary channel, why switch back?
  + A: That is because it is possinle that the AP is doing something else on the primary channel without any OBSS interference
  + C: Slide 9, you state that the STA and AP can be triggered by different OBSS. That means the STA may switch to NPCA channel later than the AP and may miss the AP transmisison. Does it mean that the STA will miss the entire NPCA duration
  + A: This is an interesting problem and may need to be solved. How to recover and initiate transmission is TBD and will need to discuss further

1. [24/1192](https://mentor.ieee.org/802.11/dcn/24/11-24-1192-01-00bn-selective-non-primary-channel-access.pptx) Selective non-primary channel access Jonghoe Koo

Discussion

* + C: Slide 7, you propose two groups and they transmit at different times. What is the motivation for this scheme? Do you think there will be lot of OBSS interference affecting one group over the other
  + A: This is to handle scheduling. Even though there are many OBSS inteference sources, the motivation is not to move all the STAs to be moved. Maybe based on the type of OBSS, we can set one group to transmit

1. [24/1394](https://mentor.ieee.org/802.11/dcn/24/11-24-1394-00-00bn-npca-operation-issues.pptx) NPCA Operation Issues Seongho Byeon

Discussion

* + C: Slide 6, for this particular case, when the STA1 is hiddden and sends RTS and the AP sends CTS in the legacy format, since there is no identifier, there is no way to tell who sent it.
  + A: That is correct

1. AOB
   * Chair announced that he will not be available for some future meetings and will be covered by other MAC ad hoc chairs and the TG leadership.
   * There is no other business
2. Session adjourned at 8:59 PM ET

# Monday, 14 October 2024, 07:00pm – 09:00pm ET (TGbn MAC ad hoc conference call)

Chairman: Alfred Asterjadhi (Qualcomm)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex session.

**Introduction**

1. The Chair (Alfred) calls the meeting to order at 7:01pm EDT. The Chair introduces himself and the Secretary, Jeongki.
2. The Chair reminds that the agenda can be found in [11-24/1643r8](https://mentor.ieee.org/802.11/dcn/24/11-24-1643-08-00bn-sept-nov-tgbn-teleconference-agenda.docx). The Chair asks for the comments about the agenda. Receiving no comments or objections, the agenda is approved
   * No comments. Agenda is approved
3. 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 responds.
4. The Chair goes through the IEEE copyright policy and no comments received on the floor
5. 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 Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.coma)), Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com)), and Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))

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

             Timestamp                          Name                                        Affiliation  
Breakout                                                                                                
TGbn (MAC)  10/14/2024                    Wee, Gaius                     Panasonic Holdings Corporation  
TGbn (MAC)  10/14/2024                Kuo, Chih-Chun                                      MediaTek Inc.  
TGbn (MAC)  10/14/2024                 huang, kaikai                                              Nokia  
TGbn (MAC)  10/14/2024                  Zhang, Jiayi                                             Ofinno  
TGbn (MAC)  10/14/2024                     Wei, Dong  Guangdong OPPO Mobile Telecommunications Corp....  
TGbn (MAC)  10/14/2024                   Yoon, Yelin                                     LG ELECTRONICS  
TGbn (MAC)  10/14/2024            Yukawa, Mitsuyoshi                                              Canon  
TGbn (MAC)  10/14/2024                     Zhou, Pei                                                TCL  
TGbn (MAC)  10/14/2024              Fischer, Matthew                               Broadcom Corporation  
TGbn (MAC)  10/14/2024                    Wang, Ying                                 InterDigital, Inc.  
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TGbn (MAC)  10/14/2024                    Gu, Jaheon                      Samsung Electronics Co., Ltd.  
TGbn (MAC)  10/14/2024                 Wullert, John                                       Peraton Labs  
TGbn (MAC)  10/14/2024              Kalamkar, Sanket  Qualcomm Incorporated; Qualcomm Technologies, Inc  
TGbn (MAC)  10/14/2024                      Wang, Qi                                         Apple Inc.  
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TGbn (MAC)  10/14/2024            Zhang, Lyutianyang                      Huawei Technologies Co., Ltd.  
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TGbn (MAC)  10/14/2024              Chisci, Giovanni                         Qualcomm Technologies, Inc  
TGbn (MAC)  10/14/2024                 Zhang, Maolin                       Huawei Technologies Co., Ltd  
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TGbn (MAC)  10/14/2024                Kamel, Mahmoud                                  Interdigital Inc.  
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TGbn (MAC)  10/14/2024                Adachi, Tomoko                                TOSHIBA Corporation  
TGbn (MAC)  10/14/2024                   Bai, Jiyang                                                TCL  
TGbn (MAC)  10/14/2024                 Kim, Sanghyun                                         WILUS Inc.  
TGbn (MAC)  10/14/2024                 Yamada, Ryota                                  SHARP CORPORATION  
TGbn (MAC)  10/14/2024                  Kim, Jeongki                                             Ofinno  
TGbn (MAC)  10/14/2024                Inoue, Kyosuke                                  SHARP CORPORATION  
TGbn (MAC)  10/14/2024                       Xu, Yue                       Huawei Technologies Co., Ltd  
TGbn (MAC)  10/14/2024                    Chu, Liwen                                 NXP Semiconductors  
TGbn (MAC)  10/14/2024                  Kim, Suhwook                                SAMSUNG ELECTRONICS  
TGbn (MAC)  10/14/2024                Kim, Geon Hwan                                     LG ELECTRONICS  
TGbn (MAC)  10/14/2024                   Yang, Jimmy                                          Moxa Inc.  
TGbn (MAC)  10/14/2024                   Aio, Kosuke                                   Sony Corporation  
TGbn (MAC)  10/14/2024             Gaeremynck, Robbe                                               IMEC  
TGbn (MAC)  10/14/2024                   Xu, Yanchao                                            Amlogic  
TGbn (MAC)  10/14/2024                  Yano, Kazuto  Advanced Telecommunications Research Institute...  
TGbn (MAC)  10/14/2024                Kishida, Akira                                                NTT  
TGbn (MAC)  10/14/2024                  CHENG, yajun                    Xiaomi Communications Co., Ltd.  
TGbn (MAC)  10/14/2024            Ajami, Abdel Karim                                         Apple Inc.  
TGbn (MAC)  10/14/2024                   Klein, Arik                       Huawei Technologies Co., Ltd  
TGbn (MAC)  10/14/2024                     Gao, Ning  Guangdong OPPO Mobile Telecommunications Corp....  
TGbn (MAC)  10/14/2024                     Xia, Qing                                   Sony Corporation  
TGbn (MAC)  10/14/2024                  Baek, SunHee                                     LG ELECTRONICS  
TGbn (MAC)  10/14/2024                   Jang, Insun                                     LG ELECTRONICS  
TGbn (MAC)  10/14/2024                  Kim, Jungjun                                Samsung Electronics  
TGbn (MAC)  10/14/2024             Johnsson, Kerstin                                              Nokia  
TGbn (MAC)  10/14/2024                  Cui, Yaoshen                               TP-Link Systems Inc.  
TGbn (MAC)  10/14/2024                 Naik, Gaurang                         Qualcomm Technologies, Inc  
TGbn (MAC)  10/14/2024                  Ha, Taeyoung                      Samsung Electronics Co., Ltd.  
TGbn (MAC)  10/14/2024           Sakamoto, Ryunosuke                                  SHARP CORPORATION  
TGbn (MAC)  10/14/2024                   Lu, Liuming  Guangdong OPPO Mobile Telecommunications Corp....  
TGbn (MAC)  10/14/2024                    Ho, Duncan                         Qualcomm Technologies, Inc  
TGbn (MAC)  10/14/2024                   Ryu, Kiseon                                 NXP Semiconductors  
TGbn (MAC)  10/14/2024           Talarico, Salvatore                                   Sony Corporation  
TGbn (MAC)  10/14/2024                Ratnam, Vishnu                           Samsung Research America  
TGbn (MAC)  10/14/2024                 Luo, Chaoming        Beijing OPPO telecommunications corp., ltd.  
TGbn (MAC)  10/14/2024                Quan, Yingqiao  Spreadtrum Communications (Shanghai) Co., Ltd....  
TGbn (MAC)  10/14/2024                   Luo, Sixian                                  SHARP CORPORATION  
TGbn (MAC)  10/14/2024                   Ma, Yongsen                                SAMSUNG ELECTRONICS  
TGbn (MAC)  10/14/2024               Petrick, Albert                                 InterDigital, Inc.  
TGbn (MAC)  10/14/2024                Fang, Yonggang                                      MediaTek Inc.  
TGbn (MAC)  10/14/2024              Manoharan, Jegan                                Cisco Systems, Inc.  
TGbn (MAC)  10/14/2024                 Perez, Javier                                             Ofinno  
TGbn (MAC)  10/14/2024                   Hart, Brian                                Cisco Systems, Inc.  
TGbn (MAC)  10/14/2024               Patil, Abhishek                              Qualcomm Incorporated  
TGbn (MAC)  10/14/2024                 Minotani, Jun                     Panasonic Holdings Corporation  
TGbn (MAC)  10/14/2024                Baykas, Tuncer                                             Ofinno  
TGbn (MAC)  10/14/2024                Byeon, Seongho                                SAMSUNG ELECTRONICS  
TGbn (MAC)  10/14/2024                Park, Minyoung                                         Apple Inc.  
TGbn (MAC)  10/14/2024                   Choi, JinHo                                SAMSUNG ELECTRONICS  
TGbn (MAC)  10/14/2024          Hasabelnaby, Mahmoud  Huawei Technologies Canada; Huawei Technologie...  
TGbn (MAC)  10/14/2024                 Norouzi, Sara  Huawei Technologies Canada; Huawei Technologie...  
TGbn (MAC)  10/14/2024               Monajemi, Pooya                                         Apple Inc.  
TGbn (MAC)  10/14/2024                Helwa, Sherief  Qualcomm Incorporated; Qualcomm Technologies, Inc  
TGbn (MAC)  10/14/2024                  Noh, Si-Chan                                      Newracom Inc.  
TGbn (MAC)  10/14/2024                   Fan, Shuang                     Sanechips Technology Co., Ltd.  
TGbn (MAC)  10/14/2024            Hedayat, Ahmadreza                                         Apple Inc.  
TGbn (MAC)  10/14/2024                  Lou, Hanqing                                 InterDigital, Inc.  
TGbn (MAC)  10/14/2024                   Cha, Dongju                                     LG ELECTRONICS  
TGbn (MAC)  10/14/2024                     LU, Yuxin                                     TCL Industries  
TGbn (MAC)  10/14/2024                Lim, Yeon Geun                                      Newracom Inc.  
TGbn (MAC)  10/14/2024                 Shi, Zhenpeng                       Huawei Technologies Co., Ltd  
TGbn (MAC)  10/14/2024                  Gu, Xiangxin     Spreadtrum Communications (Shanghai) Co., Ltd.  
TGbn (MAC)  10/14/2024               Erkucuk, Serhat                                             Ofinno  
TGbn (MAC)  10/14/2024            Shirakawa, Atsushi                                  SHARP CORPORATION  
TGbn (MAC)  10/14/2024               Shafin, Rubayet                                Samsung Electronics  
TGbn (MAC)  10/14/2024                      Che, Hui                           Ruijie Networks Co., Ltd  
TGbn (MAC)  10/14/2024                     Lijun, Yu                                        self-funded  
TGbn (MAC)  10/14/2024                 Gupta, Binita                                Cisco Systems, Inc.  
TGbn (MAC)  10/14/2024                 Hsu, Yung Lin                         National Taiwan University  
TGbn (MAC)  10/14/2024                   Seo, Sangho                               Broadcom Corporation  
TGbn (MAC)  10/14/2024            Serizawa, Kazunobu  Advanced Telecommunications Research Institute...  
TGbn (MAC)  10/14/2024                 Lim, Dong Guk                                     LG ELECTRONICS  
TGbn (MAC)  10/14/2024                   Stott, Noel                              Keysight Technologies  
TGbn (MAC)  10/14/2024              Lorgeoux, Mikael                       Canon Research Centre France  
TGbn (MAC)  10/14/2024                Sung, Hyeonjun                                         WILUS Inc.  
TGbn (MAC)  10/14/2024                  LIU, QINGLAI                     Panasonic Holdings Corporation

1. Announcements
   * Chair reminds that presenters will have 15 minutes for presentations that do not have SPs associated, else 20 minutes if they have SPs associated
   * Chair reminds TTT/PoC related things. You can send the email to Ross directly or email reflector for requesting it.
2. Technical Submissions-NPCA Part 3:
   * [24/1403](https://mentor.ieee.org/802.11/dcn/24/11-24-1403-00-00bn-some-thoughts-on-npca-operation.pptx) Some thoughts on NPCA Operation Si-Chan Noh

C: Agree with the general concept that we cannot ensure that all NPCA STA can get necessary information in MAC header. However, if AP and some STAs can get the information and switch to NPCA channel, they can do NPCA operation.

* + [24/1404](https://mentor.ieee.org/802.11/dcn/24/11-24-1404-00-00bn-discussion-on-channel-switching-for-npca.pptx) Discussion on Channel Switching for NPCA Si-Chan Noh

C: what do you think about multi-AP coordination?

A: During the multi-AP coordination, we can allow the MAP scheme and then we can consider NPCA operation in MAP coordination. Whole TXOP is not needed.

C: Initial NAV might not work in Multi-AP coordination.

A: If we consider NAV duraiton, ... we want to ensure enough time for NPCA operation.

C: including TXOP duration in UHR PPDU, do you mean including TXOP in PHY header? EHT PPDU HE PPDU? Do you want to reuse a existing field there?

A: If we define the UHR PPDU indicating whole TXOP, we can use only one field.

* + [24/1477](https://mentor.ieee.org/802.11/dcn/24/11-24-1477-00-00bn-operating-channel-validation-ocv-in-npca.pptx) Operating Channel Validation (OCV) in NPCA Jay Yang

No discussion.

* + [24/1563](https://mentor.ieee.org/802.11/dcn/24/11-24-1563-01-00bn-npca-follow-up.pptx) NPCA follow up Liwen Chu

C: In 320MHz, the NPCA Primary channel will be in Secondary 160MHz. In some case, the primary 160MHz may be more idle than the secondary 160MHz.

C: ICF cannot overlap with primary 20MHz. Do we need the explicit indication?

A: If primary channel is busy, it’s high chance of secondary 160 is idle while the primary 1600 is busy in 320MHz

C: I agree with Vishu’s 1st comment. Some frame can be transmitted on primary 20MHz channel.

* + [24/1585](https://mentor.ieee.org/802.11/dcn/24/11-24-1585-01-00bn-non-primary-channel-access-operation-npca-follow-up.pptx) Non-primary channel access operation (NPCA) follow-up Jeongki Kim

C: Invalid TXOP means STA get the TXOP in phy header. In that case, how can the STA operate on NPCA during the NAV?

A: In that case, STA can operate on NPCA during the remaining PPDU

C: How can STA decide switching time 1 or 2?

A: One example, AP can annouce it and the STA can follow the rule. Need more discussion on the details.

* + [24/1449](https://mentor.ieee.org/802.11/dcn/24/11-24-1449-00-00bn-a-flexible-extension-structure.pptx) A Flexible Extension Structure Yongsen Ma
  + No discussion
  + There is no other business

1. Session adjourned at 7:40 PM ET

# Thursday, 17 October 2024, 10:00am – 12:00pm ET (TGbn MAC ad hoc conference call)

Chairman: Alfred Asterjadhi (Qualcomm)

Secretary: Kiseon Ryu (NXP) & Jeongki Kim (Ofinno)

This meeting took place using a webex session.

**Introduction**

1. The Chair (Alfred) calls the meeting to order at 10:00am EDT. The Chair introduces himself. Kiseon Ryu (NXP) was secretary until Jeongki joined the call.
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 responds.
3. The Chair goes through the IEEE copyright policy and no comments received
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 Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.coma)), Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com)), and Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))

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

    Timestamp                          Name                                        Affiliation  
Breakout                                                                                                
TGbn (MAC)  10/17/2024                     Zhao, Yue                       Huawei Technologies Co., Ltd  
TGbn (MAC)  10/17/2024              Dezfouli, Behnam                                              Nokia  
TGbn (MAC)  10/17/2024                Fang, Yonggang                                      MediaTek Inc.  
TGbn (MAC)  10/17/2024               Erkucuk, Serhat                                             Ofinno  
TGbn (MAC)  10/17/2024               Ekkundi, Manasi                                SAMSUNG ELECTRONICS  
TGbn (MAC)  10/17/2024                    Chu, Liwen                                 NXP Semiconductors  
TGbn (MAC)  10/17/2024                Doppler, Klaus                                              Nokia  
TGbn (MAC)  10/17/2024                   Fan, Shuang                     Sanechips Technology Co., Ltd.  
TGbn (MAC)  10/17/2024                Kakani, Naveen  Qualcomm Incorporated; Qualcomm Technologies, Inc  
TGbn (MAC)  10/17/2024              Fischer, Matthew                               Broadcom Corporation  
TGbn (MAC)  10/17/2024              Lorgeoux, Mikael                       Canon Research Centre France  
TGbn (MAC)  10/17/2024                  Lou, Hanqing                                 InterDigital, Inc.  
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TGbn (MAC)  10/17/2024               Hirata, Ryuichi                                   Sony Corporation  
TGbn (MAC)  10/17/2024                 Luo, Chaoming        Beijing OPPO telecommunications corp., ltd.  
TGbn (MAC)  10/17/2024                 Hsu, Yung Lin                         National Taiwan University  
TGbn (MAC)  10/17/2024                   Ma, Yongsen                                SAMSUNG ELECTRONICS  
TGbn (MAC)  10/17/2024                 Hervieu, Lili                                          CableLabs  
TGbn (MAC)  10/17/2024               Monajemi, Pooya                                         Apple Inc.  
TGbn (MAC)  10/17/2024                Helwa, Sherief  Qualcomm Incorporated; Qualcomm Technologies, Inc  
TGbn (MAC)  10/17/2024                  Mutgan, Okan                                              Nokia  
TGbn (MAC)  10/17/2024             Bredewoud, Albert                               Broadcom Corporation  
TGbn (MAC)  10/17/2024                  Noh, Si-Chan                                      Newracom Inc.  
TGbn (MAC)  10/17/2024  Nurani Krishnan, Neelakantan                                         Apple Inc.  
TGbn (MAC)  10/17/2024            Mehrnoush, Morteza                                         Apple Inc.  
TGbn (MAC)  10/17/2024                   Li, Yanchun                       Huawei Technologies Co., Ltd  
TGbn (MAC)  10/17/2024               baron, stephane                       Canon Research Centre France  
TGbn (MAC)  10/17/2024                     Li, Weiyi                  Spreadtrum Communication USA, Inc  
TGbn (MAC)  10/17/2024              Kalamkar, Sanket  Qualcomm Incorporated; Qualcomm Technologies, Inc  
TGbn (MAC)  10/17/2024                 kamath, Manoj                               Broadcom Corporation  
TGbn (MAC)  10/17/2024                Karthik, S. G.                                SAMSUNG ELECTRONICS  
TGbn (MAC)  10/17/2024                Kim, Geon Hwan                                     LG ELECTRONICS  
TGbn (MAC)  10/17/2024                   Aio, Kosuke                                   Sony Corporation  
TGbn (MAC)  10/17/2024                Inoue, Kyosuke                                  SHARP CORPORATION  
TGbn (MAC)  10/17/2024          Adhikari, Shubhodeep                               Broadcom Corporation  
TGbn (MAC)  10/17/2024                Kim, Sang Gook                                     LG ELECTRONICS  
TGbn (MAC)  10/17/2024                 Kim, Sanghyun                                         WILUS Inc.  
TGbn (MAC)  10/17/2024                  Kim, Suhwook                                SAMSUNG ELECTRONICS  
TGbn (MAC)  10/17/2024                Kishida, Akira                                                NTT  
TGbn (MAC)  10/17/2024                  Koo, Jonghoe                                SAMSUNG ELECTRONICS  
TGbn (MAC)  10/17/2024         Koundourakis, Michail                  Samsung Cambridge Solution Center  
TGbn (MAC)  10/17/2024                Kuo, Chih-Chun                                      MediaTek Inc.  
TGbn (MAC)  10/17/2024                 huang, kaikai                                              Nokia  
TGbn (MAC)  10/17/2024                 Lee, Hong Won                                     LG ELECTRONICS  
TGbn (MAC)  10/17/2024                 HUANG, CHIHAN                                      MediaTek Inc.  
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TGbn (MAC)  10/17/2024                 Zhang, Maolin                       Huawei Technologies Co., Ltd  
TGbn (MAC)  10/17/2024                Park, Minyoung                                         Apple Inc.  
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TGbn (MAC)  10/17/2024                 Wang, Zisheng                                    ZTE Corporation  
TGbn (MAC)  10/17/2024                    Wee, Gaius                     Panasonic Holdings Corporation  
TGbn (MAC)  10/17/2024                     Genc, Eda                                              Nokia  
TGbn (MAC)  10/17/2024                 Wullert, John                                       Peraton Labs  
TGbn (MAC)  10/17/2024                     Xia, Qing                                   Sony Corporation  
TGbn (MAC)  10/17/2024                     Gao, Ning  Guangdong OPPO Mobile Telecommunications Corp....  
TGbn (MAC)  10/17/2024                   Xu, Yanchao                                            Amlogic  
TGbn (MAC)  10/17/2024                    Gu, Jaheon                      Samsung Electronics Co., Ltd.  
TGbn (MAC)  10/17/2024                       Xu, Yue                       Huawei Technologies Co., Ltd  
TGbn (MAC)  10/17/2024                     Yang, Jay                                    ZTE Corporation  
TGbn (MAC)  10/17/2024                Fujimori, Yuki                       Canon Research Centre France  
TGbn (MAC)  10/17/2024                   Yang, Jimmy                                          Moxa Inc.  
TGbn (MAC)  10/17/2024                  CHENG, yajun                    Xiaomi Communications Co., Ltd.  
TGbn (MAC)  10/17/2024                  Yano, Kazuto  Advanced Telecommunications Research Institute...  
TGbn (MAC)  10/17/2024                    Yee, James                                      MediaTek Inc.  
TGbn (MAC)  10/17/2024                   Yoon, Yelin                                     LG ELECTRONICS  
TGbn (MAC)  10/17/2024                  Yang, Haorui                                       China Mobile  
TGbn (MAC)  10/17/2024                 Urabe, Yoshio                     Panasonic Holdings Corporation  
TGbn (MAC)  10/17/2024               Tsujimaru, Yuki                                              Canon  
TGbn (MAC)  10/17/2024                  Chen, Junbin                               TP-Link Systems Inc.  
TGbn (MAC)  10/17/2024                 Perez, Javier                                             Ofinno  
TGbn (MAC)  10/17/2024               Petrick, Albert                                 InterDigital, Inc.  
TGbn (MAC)  10/17/2024                Quan, Yingqiao  Spreadtrum Communications (Shanghai) Co., Ltd....  
TGbn (MAC)  10/17/2024                Handte, Thomas                             Sony Group Corporation  
TGbn (MAC)  10/17/2024                Ratnam, Vishnu                           Samsung Research America  
TGbn (MAC)  10/17/2024                  Roy, Rishabh                                SAMSUNG ELECTRONICS  
TGbn (MAC)  10/17/2024                  Carty, Clark                             Juniper Networks, Inc.  
TGbn (MAC)  10/17/2024                   Ryu, Kiseon                                 NXP Semiconductors  
TGbn (MAC)  10/17/2024                   Cha, Dongju                                     LG ELECTRONICS  
TGbn (MAC)  10/17/2024                  Ha, Taeyoung                      Samsung Electronics Co., Ltd.  
TGbn (MAC)  10/17/2024                 Au, Kwok Shum  Huawei Technologies Canada; Huawei Technologie...  
TGbn (MAC)  10/17/2024                Smith, Malcolm                                Cisco Systems, Inc.  
TGbn (MAC)  10/17/2024                Sung, Hyeonjun                                         WILUS Inc.  
TGbn (MAC)  10/17/2024                  Gu, Xiangxin     Spreadtrum Communications (Shanghai) Co., Ltd.  
TGbn (MAC)  10/17/2024           Talarico, Salvatore                                   Sony Corporation  
TGbn (MAC)  10/17/2024                Tanaka, Yusuke                                   Sony Corporation  
TGbn (MAC)  10/17/2024                   Gu, Junrong                             Clourney Semiconductor  
TGbn (MAC)  10/17/2024                 Park, Sungjin                                           Senscomm

TGbn (MAC)  10/17/2024               Shafin, Rubayet                                Samsung Electronics

1. Announcements

The chair made the following announcement regarding POC/TTT assignment:

* + - POC/TTT assigment. Deadline for request was 10/15. Continued receiving requests for POC/TTT. POC to be added today the latest during the call and TTT will continue to be processed as they come.

Discussion

* + - C: Members are requesting POC/TTT volunteers for various topics. Any guideline such as based on SFD?
    - A: Guidelines are for writing the spec text. There are three types of topics (i.e., topics that have motions, topics that do not have motions, topics that do not need motions). For topics that have motions in the SFD, the group discusses and considers for approval the written spec text. For topics that do not have in the SFD, the topics will be in gray text in the list until we have motions. For topics that do not need motions e.g., annex, PICS, etc., we populate them and this will be determined by TG.
    - C: How to handle the topic only with high level motions but no technical details?
    - A: It’s upto the task group and will be determined based on the discussion.

1. The Chair went through the agenda found in [11-24/1643r8](https://mentor.ieee.org/802.11/dcn/24/11-24-1643-08-00bn-sept-nov-tgbn-teleconference-agenda.docx). The Chair asks for the comments about the agenda.
   * Document 24/1449 has been already presented and removed from agenda
   * Agenda approved by unanimous consent
2. POC/TTT assignment discussion:
   1. [11-24/1698r2](https://mentor.ieee.org/802.11/dcn/24/11-24-1698-02-00bn-tgbn-d0-1-spec-text-volunteers-and-status.docx) TGbn D0.1 Spec Text Volunteers and Status

Discussion

* + - C: What about new topics not listed in the current document?
    - A: Any missing topic can be added later.
    - C: What is the role of multiple POCs for big topics subdivided by several sub-topics? How is that different from TTT role?
    - A: For example, power save can be divided by several sub-topics like AP power save, cross-link power save, dynamic power save that are independent each other and can have multiple POCs for each sub-topics. POC for each sub-topic can work/coordinate with TTT members on particular sub-topic independently. TTT is allowed to contribute to the spec text as well.
    - C: If a new topic/sub-topic needs to be added, do we need a new POC for that?
    - A: If it does not fall in any of the existing topic/sub-topic, we need another POC.
    - C: Who is going to coordinate among multiple POCs for sub-topics that are interdependent?
    - A: POCs for sub-topics are all experts on the topic and should provide their expertise in writing the spec text that there is no conflict and harmonization across the boarder.
    - C: If we can’t reach a consensus on the single POC, how to resolve it?
    - A: Will try to minimize it. But, if any, we can take it as a follow-up discussion to finalize via email. I’ll expect from those members to send the chair and the editor a notification so that we can update the list.
    - For Roaming docussion:
    - C: Roaming is a big topic, so it could be subdivided into different sub-topics. Suggest to subdivide the roaming topic into the following sub-topics:
      1. Architecture/framework - Duncan
      2. Security - Mike
      3. Discovery - Yelin
      4. Preparation – Giovanni/Binita
      5. Roaming – Binita/Giovanni
      6. Context transfer – Po-Kai
      7. FT enhancements - Guogang
      8. Data plane UL/DL delivery - Jay
* C: Roaming architecture has not reached consensus. It is difficult to prepare the PDT text without consensus on the architecture/framework. Suggest to have technical discussion before drafting spec text.
* C: Agreed to subdivide the topic into sub-topics. Suggested sub-topics are reasonable.
* C: Suggested to include all TTT members in this discussion (i.e., POC division for sub-topics).
* A: All TTT members are going to be part of all the interactions.
* C: Don’t want delay. We can start with some common parts that we already have motions.
* C: The security is important part of the roaming, so I suggest Mike who is a security expert as the POC of the roaming topic.
* C: It’s good to include TTT in this POC division discussion.
* C: It’s hard to start the spec text writing without consensus on the framework/architecture.
* A: We’re doing now is nothing to do with technical discussion. We have point of contacts for spec text writing that we have to prepare. If there are things that are not settled from a technical perspective, we will follow the traditional procedure. We need POCs for sub-topics here and those POCs are going to coordinate to ensure that even for those particular sub-topics everything that needs to be taken care of aligned with the SFD.
* C: Suggested alternative sub-topic division and POCs with Mike for the POC for the framework/architecture sub-topic.
* C: Agreed to the subdivision, but disagreed to the POCs for sub-topics. POCs for sub-topics should be open to all TTT members.
* A: Extend the email thread for this discussion to the TTT. We can schedule the follow-up discussion the next Thursday.
* Added Gabor and Brian to the list of TTT.
* For power save discussion:
* C: Suggested to divide sub-topics to AP power save, cross-link power save and dynamic power save (low/high capability).
* C: Regarding POC assignment for sub-topics, we don’t have email exchanges.
* A: POC that maintains the main draft for the particular topic is going to incorporate and coordinate the efforts between the TTT members to make sure that the draft is stable and consistent for presentation to the task group. So, please use the reflector for all this interactions and that is the purpose of providing feedback from the members.
* Some members volunteered for the POC for some sub-topics.
* C: Suggested to allocate the POC later.
* C: No regular AP power save that has motion. Suggested to limit the mobile AP power save.
* A: We have AP power save that have motion, which is general.
* C: ICF/ICR topic is related to dynamic power save.
* A: Added the note ”Maybe merge/include in their respective topics” to the Control (ICF/ICR) topic.

1. Technical Submissions-NPCA Part 3:
   * 24/0815 Dynamic bandwidth selection signaling details Binita Gupta

C: what kind of over the air DBS signaling is exchanged? What coordination are you anticipating between the Aps for this to work?

A: channel load information is minimum

C: slide 10, do they have setting on the secondary channel on what kind of channel access?

A: The same rule. I don’t change it.

C: Deep sleep mode, How do you aware of it?

A: AP announces in advanced. It may be missed. It’s similar behavior as CSA.

C: We can make simpler. Aware of the change of the AP bandwdiths.

A: It’s not long time. notify the STA for how long this would last instead of notifying indivuidaul STA.

C: for AP to use a different NPCA channel if most STA do DBS and most STA can expand their operation to 160.

C: it’s the negotiaiton between several neight Aps or this whole network? Different Aps could do.

A: multiple AP should be coordinated. AP does not consider other AP ’s bandwdith extension

C: will the communication be done over the primary channel or each STA has to switch to different channel within this bandwidth?

A:Primary channel cannot be changed

* + [24/1276](https://mentor.ieee.org/802.11/dcn/24/11-24-1276-00-00bn-transmission-enhancement-for-xr-use-case.pptx) Transmission Enhancement for XR Use Case Guogang Huang

C: transparent is data transfer? Transition from direct link to AP relay link? This need only for transition when you moves from the direct ot the relay link. Do you have to do it or after that you have flushed out the packets that were pending for direct link , do you still keep doing?

A: we don’t need to flush scoreboard or reorder

C: how do you support the multiple QoS flows insdie the same TID

C: slide 3, motivation, we already have multipath TCP or something. VPN on top of that to switch between different links quickly. The direction/link can be changed quickly based on it. What/how much is different?

A: Simliar to multi-link.

1. AOB
   * There is no other business

Session adjourned at 12:00 PM ET

# Monday, 21 October 2024, 07:00pm – 09:00pm ET (TGbn MAC ad hoc conference call)

Chairman: Alfred Asterjadhi (Qualcomm)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex session.

**Introduction**

1. The Chair (Alfred) calls the meeting to order at 7:01pm EDT. The Chair introduces himself and the Secretary, Jeongki.
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 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 Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.coma)), Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com)), and Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))

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

|  |  |
| --- | --- |
| Name | Affiliation |
| Park, Minyoung | Apple Inc. |
| Norouzi, Sara | Huawei Technologies Canada; Huawei Technologie... |
| Nezou, Patrice | Canon Research Centre France |
| Lijun, Yu | self-funded |
| Quan, Yingqiao | Spreadtrum Communications (Shanghai) Co., Ltd.... |
| Carney, William | Sony Group Corporation |
| LIU, QINGLAI | Panasonic Holdings Corporation |
| Aio, Kosuke | Sony Corporation |
| Wang, Qi | Apple Inc. |
| Tanaka, Yusuke | Sony Corporation |
| Lim, Dong Guk | LG ELECTRONICS |
| Cha, Dongju | LG ELECTRONICS |
| Minotani, Jun | Panasonic Holdings Corporation |
| Wang, Lei | Futurewei Technologies/Huawei Technologies |
| Talarico, Salvatore | Sony Corporation |
| Lou, Hanqing | InterDigital, Inc. |
| Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| Shi, Zhenpeng | Huawei Technologies Co., Ltd |
| Perez, Javier | Ofinno |
| Bai, Jiyang | TCL |
| Naik, Gaurang | Qualcomm Technologies, Inc |
| Serizawa, Kazunobu | Advanced Telecommunications Research Institute... |
| Montemurro, Michael | Huawei Technologies Co., Ltd |
| Baykas, Tuncer | Ofinno |
| Patil, Abhishek | Qualcomm Incorporated |
| Ma, Yongsen | SAMSUNG ELECTRONICS |
| Adachi, Tomoko | TOSHIBA Corporation |
| Seo, Sangho | Broadcom Corporation |
| Sun, Bo | Sanechips Technology Co., Ltd. |
| Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.... |
| Schelstraete, Sigurd | MaxLinear |
| Sung, Hyeonjun | WILUS Inc. |
| Manoharan, Jegan | Cisco Systems, Inc. |
| Park, Sungjin | Senscomm |
| Asai, Yusuke | Nippon Telegraph and Telephone Corporation (NTT) |
| Ptasinski, Henry | Element78 Communications LLC |
| Ryu, Kiseon | NXP Semiconductors |
| Mehrnoush, Morteza | Apple Inc. |
| LU, Yuxin | TCL Industries |
| Ratnam, Vishnu | Samsung Research America |
| Wang, Ying | InterDigital, Inc. |
| Zhong, Ke | Ruijie Networks Co.,Ltd. |
| Kim, Geon Hwan | LG ELECTRONICS |
| Erkucuk, Serhat | Ofinno |
| Zhao, Yue | Huawei Technologies Co., Ltd |
| Kim, Jungjun | Samsung Electronics |
| Zhang, Maolin | Huawei Technologies Co., Ltd |
| Khorov, Evgeny | IITP RAS |
| Zhang, Lyutianyang | Huawei Technologies Co., Ltd. |
| Yoon, Yelin | LG ELECTRONICS |
| Kim, Sanghyun | WILUS Inc. |
| Dezfouli, Behnam | Nokia |
| Yano, Kazuto | Advanced Telecommunications Research Institute... |
| Das, Subir | Peraton Labs |
| Kishida, Akira | NTT |
| Kim, Sang Gook | LG ELECTRONICS |
| Karamyshev, Anton | IITP RAS |
| Fan, Shuang | Sanechips Technology Co., Ltd. |
| Fang, Yonggang | MediaTek Inc. |
| Hart, Brian | Cisco Systems, Inc. |
| Ha, Taeyoung | Samsung Electronics Co., Ltd. |
| Gupta, Binita | Cisco Systems, Inc. |
| Helwa, Sherief | Qualcomm Incorporated; Qualcomm Technologies, Inc |
| Gu, Xiangxin | Spreadtrum Communications (Shanghai) Co., Ltd. |
| Ho, Duncan | Qualcomm Technologies, Inc |
| HUANG, CHIHAN | MediaTek Inc. |
| huang, kaikai | Nokia |
| Gu, Jaheon | Samsung Electronics Co., Ltd. |
| Huang, Po-Kai | Intel Corporation |
| Inohiza, Hirohiko | Canon |
| Inoue, Kyosuke | SHARP CORPORATION |
| Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.... |
| Jang, Insun | LG ELECTRONICS |
| Fischer, Matthew | Broadcom Corporation |
| Yang, Jimmy | Moxa Inc. |
| Coffey, John | Realtek Semiconductor Corp. |
| Zhang, Jiayi | Ofinno |
| Lee, Hong Won | LG ELECTRONICS |
| LEE, JOONSOO | Newracom Inc. |
| Xiao, Tong | Xiaomi Communications Co., Ltd. |
| Wullert, John | Peraton Labs |
| Kuo, Chih-Chun | MediaTek Inc. |
| Wei, Dong | Guangdong OPPO Mobile Telecommunications Corp.... |
| Cheng, Nan | Xidian University,China |
| Choi, JinHo | SAMSUNG ELECTRONICS |
| Xia, Qing | Sony Corporation |
| Yamada, Ryota | SHARP CORPORATION |
| Chen, Wei-Han | Mediatek Inc |
| Chu, Liwen | NXP Semiconductors |
| Yang, Jay | ZTE Corporation |
| Wee, Gaius | Panasonic Holdings Corporation |
| CHENG, yajun | Xiaomi Communications Co., Ltd. |
| Xu, Yanchao | Amlogic |

1. Announcements
   * PoC assignmenet underway. We will have the second part of the discussion on Oct. 24th.
2. Discussion on technical submissions and agenda: Some modifications on 24/1643r11.
3. Technical Submissions-Miscellaneous Part 2:
   * [24/1505](https://mentor.ieee.org/802.11/dcn/24/11-24-1505-00-00bn-txop-bandwidth-expansion-follow-up.pptx) TXOP bandwidth expansion - Follow up Sanghyun Kim

C: You’re doing the channel contention before extension. In that case, it’s a new TXOP. Right?

A: we have PIFS CCA or invoking new backoff.

C: regarding PIFS CCA, how can you prevent the collision? If two BSS are trying to access the same secondary forty at the same time after the end of the busy period, both are try to send ICF at the same time and collisde

C: I wonder if we need CF-End before the EDCA access?

A: If you transmit CF-End then enxt frame exchange will be the next TXOP. Leveraging the already setting up value. On primary channel, the others have no zero value during this time period. So, contending the primary channel will get this channel again usually

* + [24/1157](https://mentor.ieee.org/802.11/dcn/24/11-24-1157-00-00bn-discussions-on-dynamic-subchannel-operation.pptx) Discussions on Dynamic Subchannel Operation Hyeonjun Sung

C: slide 4, BSRP ..no NAV protection from legacy STA is not accurate. 11n and 11ac, its correct but, it can protect 11ax and beyond device. They are still legacy protection. Right?  
A: For TB PPDU, 11be device cannot decode the TB PPDU.

C: AP can solicit RTS and CTS befor this.

C: MU-RTS is used for DSO. You change the MU-RTS behavior. Non-HT dup PPDU. This is issue of MU-RTS.

C: slide 10, DSP primary channel is for MU-RTS/CTS. Not BSRP.

A: We can use it for BSRP as well as MU-RTS.

C: The comparison of MU-RTS and BSRP is good. There are a few other aspects to consider as well like CFO requirements.

* + [24/1414](https://mentor.ieee.org/802.11/dcn/24/11-24-1414-00-00bn-channel-measurement-based-on-control-frame-exchange.pptx) Channel Measurement Based on Control Frame Exchange Guogang Huang

C: We could get some estimation of the error of RSSI from the AP based on the RTS/CTS signaling. Would that be enough?

C: NDP and NPDA exchange is post association right? You wantto move it to pre association? Worried about the trust model between the STA and AP because not associated with the target AP, NDPA is the data frame right? I don’t think it’s control frame I think.

C: frame format, repetition num, how does the STA get what number to use it? You use B24-26. This number is used in Ranging and sensing after some management frame based on capability exchange. You don’t have a capability exhange.

A:

* + [24/1474](https://mentor.ieee.org/802.11/dcn/24/11-24-1474-00-00bn-some-thoughts-on-dso.pptx) Some thoughts on DSO Li Quan

C: If you ask the ST to remain on a subband beyond the TXOP, what is the gurantee that the AP can win the TXOP again? What is the incentive for the STA toi remain there when there is no gurantee that the AP can’t get channel acces there. Can you elaborate a bit more on the kind of calibrations? I see the point of indicating a lower MCS if calibrations are needed.

C: I agree with your point and analysis. The calibration is a very important issue for this. Initial calibration you can send some basic rate.

* + [24/1553](https://mentor.ieee.org/802.11/dcn/24/11-24-1553-00-00bn-dso-follow-up.pptx) DSO follow up Gaurang Naik

C: Why do you consider the different switching delay and switching back delay?

A: I don’t think both are different. But the implementation specific, we can have two values for them. You can have flexibility in the standard. Note that we do this same thing for EMLSR also.

C: slide 6, AP does not need to change the operation channel. Non AP STA is going to switch from primary to DSO band. You mean AP continue if AP continue transission only on the DSO, then AP may lose medium sync. Is that case AP is transmitting so AP cannot hear or monitor the primary channel and then lost the sync.

A: That’s my understanding.

* + [24/1564](https://mentor.ieee.org/802.11/dcn/24/11-24-1564-01-00bn-dso-follow-up.pptx) DSO follow up Liwen Chu

C: Do you want all the STA to be capble of meeting that CFO requirement after switching or you want to relax the CFO requirment after swithcing or some other mechanism?

A: BSRP trigger plus reasonalbe finding time is ok

C: Puncturing, ICF using BSRP. What do you mean like dynamic channel puncuring? Dynamic puncture is only at the begining sending ICF?

* + [24/1589](https://mentor.ieee.org/802.11/dcn/24/11-24-1589-00-00bn-dynamic-subband-operation-follow-up.pptx) Dynamic Subband Operation, follow up Morteza Mehrnoush

C: Are you suggesting the STA which are lower than 80 should not be performing DSO? Why do you want to restrict it? In dense environment, you have stations which AP may want to move?

C: STA store calibration data of DSO subband, how much delay would STA acheive?

A: It depends on implementation.

C: Concern on disallowing 20MHz STA . Not clear what’s the complexity?

A: we are seeing the DSO as a feature which is kind of helping for kind of high priority traffics. We don’t think that the twenty regards.

C: Low latency traffic will not occur for 20MHz only STA?

A: This would our vision.

C: We should not let someting like, IEEE determine what is allowed for market needs and what is not. The specs should be open and then Wi-Fi alliance can decide whether it makes senses or not. But disallowing it at the IEEE really blocks certain market segment for trying to get certain benefits from standards.

1. There is no other business
2. Session adjourned at 7:50 PM ET

# Thursday, 24 October 2024, 10:00am – 12:00pm ET (TGbn MAC ad hoc conference call)

Chairman: Alfred Asterjadhi (Qualcomm)

Secretary: Srinivas Kandala (Samsung)

This meeting took place using a webex session.

**Introduction**

1. The Chair (Alfred) calls the meeting to order at 10:00am EDT. The Chair introduces himself and the secretary, Srini (Samsung)
2. The Chair reminds that the agenda can be found in [11-24/1643r14](https://mentor.ieee.org/802.11/dcn/24/11-24-1643-14-00bn-sept-nov-tgbn-teleconference-agenda.docx). The Chair asks for the comments about the agenda. Receiving no comments or objections, the agenda is approved
   * No comments. Agenda is approved
3. 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 responds.
4. The Chair goes through the IEEE copyright policy and no comments received
5. 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 Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.coma)), Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com)), and Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))

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

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| Wu, Tianyu | Apple Inc. |
| Norouzi, Sara | Huawei Technologies Canada; Huawei Technologie... |
| Wang, Qi | Apple Inc. |
| Park, Minyoung | Apple Inc. |
| Ratnam, Vishnu | Samsung Research America |
| Wang, Lei | Futurewei Technologies/Huawei Technologies |
| Wei, Dong | Guangdong OPPO Mobile Telecommunications Corp.... |
| Tota, Kazuyuki | Canon |
| Quan, Yingqiao | Spreadtrum Communications (Shanghai) Co., Ltd.... |
| Park, Sungjin | Senscomm |
| Patil, Abhishek | Qualcomm Incorporated |
| Varshney, Prabodh | Nokia |
| Wilhelmsson, Leif | Ericsson AB |
| Patwardhan, Gaurav | Hewlett Packard Enterprise |
| Perez, Javier | Ofinno |
| Wullert, John | Peraton Labs |
| Petrick, Albert | InterDigital, Inc. |
| Wu, Kanke | Apple Inc. |
| Val, Inaki | MaxLinear, Inc. |
| Sun, Bo | Sanechips Technology Co., Ltd. |
| Roy, Rishabh | SAMSUNG ELECTRONICS |
| SUH, JUNG HOON | Huawei Technologies Canada; Huawei Technologie... |
| Yang, Jay | ZTE Corporation |
| Yang, Jimmy | Moxa Inc. |
| Son, Ju-Hyung | WILUS Inc. |
| Yang, Hang | Ruijie Networks Co., Ltd. |
| Singh, Aditi | Charter Communications |
| Yano, Kazuto | Advanced Telecommunications Research Institute... |
| Yan, Zhongjiang | Northwestern Polytechnical University |
| Shi, Zhenpeng | Huawei Technologies Co., Ltd |
| Sung, Hyeonjun | WILUS Inc. |
| Yee, James | MediaTek Inc. |
| Shabdanov, Samat | Mediatek |
| Xu, Yue | Huawei Technologies Co., Ltd |
| Zhang, Jiayi | Ofinno |
| Wang, Ying | InterDigital, Inc. |
| Zhang, Lyutianyang | Huawei Technologies Co., Ltd. |
| Seo, Sangho | Broadcom Corporation |
| Talarico, Salvatore | Sony Corporation |
| Zhang, Maolin | Huawei Technologies Co., Ltd |
| Schelstraete, Sigurd | MaxLinear |
| Xu, Yanchao | Amlogic |
| Zhao, Yue | Huawei Technologies Co., Ltd |
| Zhong, Ke | Ruijie Networks Co.,Ltd. |
| Xiao, Tong | Xiaomi Communications Co., Ltd. |
| Tanaka, Yusuke | Sony Corporation |
| Ryu, Kiseon | NXP Semiconductors |
| Zhou, Lei | H3C Technologies Co., Limited |
| Xia, Qing | Sony Corporation |
| Zhou, Pei | TCL |
| Zuniga, Juan Carlos | Cisco Systems, Inc. |
| Noh, Si-Chan | Newracom Inc. |
| Hart, Brian | Cisco Systems, Inc. |
| Bankov, Dmitry | IITP RAS |
| Dong, Xiandong | Xiaomi Communications Co., Ltd. |
| Carney, William | Sony Group Corporation |
| McCann, Stephen | Huawei Technologies Co., Ltd |
| Di Taranto, Rocco | Ericsson AB |
| Ajami, Abdel Karim | Apple Inc. |
| Inohiza, Hirohiko | Canon |
| LIU, QINGLAI | Panasonic Holdings Corporation |
| Genc, Eda | Nokia |
| Kim, Sanghyun | WILUS Inc. |
| Gu, Jaheon | Samsung Electronics Co., Ltd. |
| Huang, Po-Kai | Intel Corporation |
| Montemurro, Michael | Huawei Technologies Co., Ltd |
| Aio, Kosuke | Sony Corporation |
| Kim, Geon Hwan | LG ELECTRONICS |
| Kim, Suhwook | SAMSUNG ELECTRONICS |
| Lim, Yeon Geun | Newracom Inc. |
| huang, kaikai | Nokia |
| Motozuka, Hiroyuki | Panasonic Holdings Corporation |
| Adhikari, Shubhodeep | Broadcom Corporation |
| HUANG, CHIHAN | MediaTek Inc. |
| Kishida, Akira | NTT |
| Jang, Insun | LG ELECTRONICS |
| Cui, Yaoshen | TP-Link Systems Inc. |
| Loginov, Vyacheslav | IITP RAS |
| Johnsson, Kerstin | Nokia |
| Kim, Jeongki | Ofinno |
| Batra, Anuj | Apple Inc. |
| Bao, Zhanjing | TCL |
| Bredewoud, Albert | Broadcom Corporation |
| Khorov, Evgeny | IITP RAS |
| Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.... |
| Fan, Shuang | Sanechips Technology Co., Ltd. |
| Karamyshev, Anton | IITP RAS |
| Lovison, Federico | Cisco Systems, Inc. |
| Kandala, Srinivas | Samsung |
| Kim, Jungjun | Samsung Electronics |
| Ekkundi, Manasi | SAMSUNG ELECTRONICS |
| CHENG, yajun | Xiaomi Communications Co., Ltd. |
| Kamel, Mahmoud | Interdigital Inc. |
| Ma, Yongsen | SAMSUNG ELECTRONICS |
| Byeon, Seongho | SAMSUNG ELECTRONICS |
| Lou, Hanqing | InterDigital, Inc. |
| Bai, Jiyang | TCL |
| Baek, SunHee | LG ELECTRONICS |
| Kim, Sang Gook | LG ELECTRONICS |
| Manoharan, Jegan | Cisco Systems, Inc. |
| Campiglio, Ugo | Cisco Systems, Inc. |
| Lim, Dong Guk | LG ELECTRONICS |
| LU, Yuxin | TCL Industries |
| Chaturvedi, Abhishek | Samsung Electronics |
| Kuo, Chih-Chun | MediaTek Inc. |
| Chen, Junbin | TP-Link Systems Inc. |
| Cheng, Nan | Xidian University,China |
| Gu, Junrong | Clourney Semiconductor |
| Choi, Jinsoo | LG ELECTRONICS |
| Neishaboori, Azin | General Motors Company |
| Lalam, Massinissa | SAGEMCOM BROADBAND SAS |
| Choi, JinHo | SAMSUNG ELECTRONICS |
| Hasabelnaby, Mahmoud | Huawei Technologies Canada; Huawei Technologie... |
| Che, Hui | Ruijie Networks Co., Ltd |
| Lanante, Leonardo | Ofinno |
| Levy, Joseph | InterDigital, Inc. |
| Lee, Gwangho | Korea National University of Transportation |
| Lee, Wookbong | Apple Inc. |
| LEE, Mingyu | Samsung Electronics Co., Ltd. |
| Haider, Muhammad Kumail | Meta Platforms, Inc. |
| Ng, Boon Loong | Samsung Electronics |
| Nogami, Toshizo | SHARP CORPORATION |
| Handte, Thomas | Sony Group Corporation |
| Lee, Hong Won | LG ELECTRONICS |
| Nezou, Patrice | Canon Research Centre France |
| Hedayat, Ahmadreza | Apple Inc. |
| Ha, Taeyoung | Samsung Electronics Co., Ltd. |
| Lijun, Yu | self-funded |
| Ho, Duncan | Qualcomm Technologies, Inc |
| Coffey, John | Realtek Semiconductor Corp. |
| Chung, Chulho | SAMSUNG |
| Hervieu, Lili | CableLabs |
| Gu, Xiangxin | Spreadtrum Communications (Shanghai) Co., Ltd. |
| Chu, Liwen | NXP Semiconductors |
| Li, Yanchun | Huawei Technologies Co., Ltd |
| Mutgan, Okan | Nokia |
| Gupta, Binita | Cisco Systems, Inc. |

1. Announcements: PoC assignments in progress. To conclude on Monday 10/28. Jont call for 10/31 for any eventual leftovers
2. Agenda is approved with unanimous consent
3. Straw Polls (30’):
   * **SP1 (Laurent)-Coex:** Do you support that a non-AP STA that is a TXOP responder can indicate in a response frame 1) for how long it will be available, if known and/or 2) whether it will be unavailable after a specific point in time and, if known, for how long
     1. The response frame is a multi-STA BlockAck frame sent by the non-AP STA in response to the initial control frame or to MPDUs that solicit an immediate response
   * *Supporting documents: [23/2002, 23/1964, 24/054, 24/1558 24/1504r0, 094r0, 1558]*
   * Discussion:

C: Giving priority to non-Wi-Fi appears to be giving away too much. It also seems that ICF and ICR will include RTS/CTS

A: It is not yet decided if the mechanisms is optional or mandatory

C: Is this targeted for TDLS? If not, why can’t the AP transmit to the responder?

A: We can discuss in the future

C: There is some ambiguity with conditions 1 and 2. There are two points on (un) availability. What is the state between the two points. It seems we can choose condition 1 or condition 2 but not both

C: Second comment is that there is another SP on ICF/ICR and we can remove it from here

A: Indeed, you indicated that there is confusion. But there is no confusion and they are at different points in time and we could have alternate wording but this was a convergence within the group

C: Same concern as others. Why do we use and/or between the two conditions?

A: Same answer as before

C: Not very clear talking about response frame without the initial frame. Block ACK is supposed to be a response frame to Data frame, but now it is used as another response frame

A: We just need to define some frame, and we find BA to be a flexible frame. The frames that triggered would be a BSRP

SP has been run

Results : Y72, 64N, 24A

* + **SP2 (Laurent)-Coex:** Do you support that a non-AP STA can request its associated AP to initiate TXOPs/frame exchanges with the STA with an initial control frame that enables the non-AP STA to include unavailability feedback in the initial response frame?
  + **Discussion**

Proposer walked through the SP

C: Clarification question. You said that this frame can be sent by non-AP STA in an unsolicited manner or be triggered

A: No, non-AP STA cannot send it in an unsolicited manner. It is always solicited by the AP using initial control frame

C: I do not understand why the non-AP STA can not send it directly

A: Since this helps to have a CTS to have the feedback

C: How does this work with OFDMA? Is there an expectation that SU will be used?

A: For sure, it is straight-forward for SU, With MU, we can have responses from multiple devices and it can be had

C: The current straw poll text is not clear as it does not say if ICF is required all the time? For longerterm IDC even, since this is periodic, then ICF likely need to be needed only certain times. I sent suggested text but it does not reflect it here

C: The AP should have an option to accept ro remove. Without that, the STA can do whatever it ants

A: Optional/mandatory is TBD and we can have in the future discussion

C: Despite other comments, this coexistence is important and the AP can have better schedule, using medium efficiency and we can avoid the dropping of the rate; improves throughput and efficiency and support the SP

Proposer requests a recorded vote

Discussion on whether it is appropriate to have it recorded for SP. Chair will consult with the leadership and confirm. For now, will keep the recording

Regarding publishing of the leaders, will work with the working group leadership and proceed accordingly

Secretary recording the votes of the people who are unable to vote on Slido and will share with the chair

No one had difficulty in voting on slido this time

Results: 90 Y, 51N, 37 A

*Supporting documents: [23/2002. 24/0094r0]*

*SP3 and SP4 that were in the agenda are now delayed to the next meeting as we are running out of time*

* + **~~SP3 (Laurent)-NPCA:~~** ~~Do you support that the event that triggers switching to the NPCA primary channel shall be~~
    1. ~~OBSS Control frame exchange (e.g., (MU-)RTS/CTS) or~~
    2. ~~OBSS HE/EHT/UHR PPDU~~
  + **~~SP4 (Laurent)-NPCA:~~** ~~Do you support that the NPCA operation shall use the same EDCA parameters ((MU) EDCA Parameter Set, EPCS EDCA Parameters), on both the BSS primary channel and the NPCA primary channel.~~

1. Technical Submissions – DSO + Power Save + Feedback:
   * [24/1588](https://mentor.ieee.org/802.11/dcn/24/11-24-1588-00-00bn-dso-configurations.pptx) DSO Configurations Shubhodeep Adhikari
   * Discussion:

C: Why do you see the need to 80 MHz and 160 MHz UHR STAs? We should have the flexibility to support DSO for narrower channels

A: It is not easy for a non-AP to support DSO. To enable the DSO switch, the non-AP should be triggered. Suppose we want to support 20 MHz in 320 MHz, three are 15 possible locations. And these channels need to be sounded and the channel information needs to be stored. It is a memory intensive operation. With the current state of art, this cannot be supported by non-AP STAs. Furthermore, DSO may be combined with EMLSR, whcih needs sounding on another channel. If we want to add DPS, then the sounding combinations will be more and it will be impossible and the proposal to simiplify

C; We need more discussion but the AP may be able to schedule

C: Echo with the previous commenter. The proposal goes far more what is required. I do not believe sounding is required, but perhaps caliberation. Why not switch from one 40 Mhz to another 40 MHz? 80 Mhaz and 160 MHz may not be used in enterprise and it feels like this mechanism will prevent the use of DSO in enterprise

A: We shoudl consider for other bandwidths to accommodate enterprise. I disagree that there is no need for sounding as without beamforming DSO may not be effective

C: I am confused with the term DSO PPDU. Is this a new PPDU?  
A: PPDU with information on DSO allocation

C: Do you consider the control frame tha tinitiaes DSO as a DSO PPDU

A: No, only the data PPDUs. And these definitions are only for reference

C: it is not good to disallow this feature for some types of STAs, with different bandwidth STAs. It is true that the AP can control the switch. So it does not mean that there are so many DSO subbands. Also it does not need sounding and merely neesd to store calibrated values

A: How can you avoid sounding if you want beamforming?

A: There is a scheuling issue with lower bandwidths. How will the AP schedule multiple number of DSOs. There will be gaps.

C: The goal of the DSO is to take advantage of the channel efficiency. It appears that you cannot take advantage of this feature why pre-UHR formats cannot acoomodate between DSO and non-DSO

A: You are downgrading the downlink format? It is not clear if you can do, even if it is there is complexity

C: I do not understand why there is complexity

C: I am surprised that number of DSO locations to only one. The cost is high with DSO and if there si only one possible DSO position, how much benefit would DSO provide?

A: There are many combinations that a STA has to do with others such as EMLSR. Also, there is a scheduling complexity.

C: You keep on saying that there are 7 or 15 combinations. But this can something be worked out by reducing the number of combinations. It is better to look and simplify the problem but not eliminated

A: That can be a way forward. But if you reduce the bandwidth, you will have many choices

Chair requests to use email to discuss further

* + [24/1587](https://mentor.ieee.org/802.11/dcn/24/11-24-1587-00-00bn-discussion-on-dso-operation.pptx) Discussion on DSO Operation Kaiying Lu

C: As a standard, we should make it as flexible as possible and leave it to the implementer on how it wants to limit the subband. As an implementer, one could choose based on the complexity, others myave other ways.

C: Slide 9, in this frame exchagne, with BSRP, STA2, STA3 and STA4 will be in their respective subband

A: Are you asking if STA2, STA3 and STA4 are in DSO allocated by AP

C: Yes

A: That is correct. Explained how the STAs will be allocated resources within the subband

C: From the figure, if STA3 gets lost. Chair asked to send email to clarify the example

C: If we only have 80 and 160 we are excluding some important use cases and we need more disussion

C: Isnt it easier to multiple user id as we will have difficulty in using up the AID cases.

A: That is true, but the AP can choose the AID as the AID values are not used. But I am open to other options

C: Can you clarify the motivation to solicit BQR from BSRP

A: For this DSO operation, the DSO STA can feedback the per 20 MHz channel availability, so that the AP can schedule with better resource allocation. So, it may be helpful to use BQR

Chair requests to use email for further questions and comments

* + [24/1502](https://mentor.ieee.org/802.11/dcn/24/11-24-1502-00-00bn-discussion-on-ap-power-save.pptx) Discussion on AP Power Save SunHee Baek

C: You cover many power save modes, but different modes have different rquirements. In 6 GHz, are they specific to scheduled and unscheduled or are they applicable to DPS

A: The intention of the table is that the UHR STA supports AP Power Save, but the HE STA can support power save by using broadcast TWT

C: Agree with the three cases and we should define these cases. You also say that if HE, EHT and UHR can support using broadcast TWT, but I am not sure if legacy can support. Even though the PM bit can be used for legacy the behavior for the PM bit set to 1 is not defined

A: We can discuss how to use the scheduled AP Power save mode

C: On the conclusion slide, you state that whenever the AP power save mode changed it should be announced. A: Agree with it and work offline on the details

1. AoB: No time for any other business
2. Adjourn: Adjourned at 12:00 noon EDT

# Monday, 28 October 2024, 07:00pm – 09:00pm 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 7:01pm EDT. The Chair introduces himself and the Secretary, Srini (Samsung)
2. The Chair reminds that the agenda can be found in [11-24/1643r16](https://mentor.ieee.org/802.11/dcn/24/11-24-1643-16-00bn-sept-nov-tgbn-teleconference-agenda.docx). The Chair asks for the comments about the agenda. Receiving no comments or objections, the agenda is approved
   * No comments. Agenda is approved
3. 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 responds.
4. The Chair goes through the IEEE copyright policy and no comments received on the floor
5. 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 Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.coma)), Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com)), and Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))

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

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| Noh, Si-Chan | Newracom Inc. | |  |
| Klein, Arik | Huawei Technologies Co., Ltd | | |
| Kishida, Akira | NTT |  |  |
| Ekkundi, Manasi | SAMSUNG ELECTRONICS | | |
| Zhao, Yue | Huawei Technologies Co., Ltd | | |
| Kim, Jungjun | Samsung Electronics | | |
| Erkucuk, Serhat | Ofinno |  |  |
| Chisci, Giovanni | Qualcomm Technologies, Inc | | |
| Lee, Hong Won | LG ELECTRONICS | |  |
| Yano, Kazuto | Advanced Telecommunications Research Institute... | | |
| Cui, Yaoshen | TP-Link Systems Inc. | | |
| Yang, Jimmy | Moxa Inc. |  |  |
| Dezfouli, Behnam | Nokia |  |  |
| Xu, Yanchao | Amlogic |  |  |
| Yan, Zhongjiang | Northwestern Polytechnical University | | |
| Kuo, Chih-Chun | MediaTek Inc. | |  |
| Dong, Xiandong | Xiaomi Communications Co., Ltd. | | |
| Zhang, Jiayi | Ofinno |  |  |
| Doppler, Klaus | Nokia |  |  |
| Koo, Jonghoe | SAMSUNG ELECTRONICS | | |
| Zhang, Maolin | Huawei Technologies Co., Ltd | | |
| Kim, Sanghyun | WILUS Inc. | |  |
| Yang, Hsi-Chang | Mediatek Inc | |  |
| Zhang, Lyutianyang | Huawei Technologies Co., Ltd. | | |
| Yee, James | MediaTek Inc. | |  |
| Kim, Sang Gook | LG ELECTRONICS | |  |
| Yang, Jay | ZTE Corporation | |  |
| Chu, Liwen | NXP Semiconductors | | |
| Xiao, Tong | Xiaomi Communications Co., Ltd. | | |
| Hirata, Ryuichi | Sony Corporation | |  |
| Hu, Chunyu | Spreadtrum Communications US | | |
| HUANG, CHIHAN | MediaTek Inc. | |  |
| Gu, Xiangxin | Spreadtrum Communications (Shanghai) Co., Ltd. | | |
| Hedayat, Ahmadreza | Apple Inc. | |  |
| Haider, Muhammad Kumail | Meta Platforms, Inc. | | |
| Ha, Taeyoung | Samsung Electronics Co., Ltd. | | |
| Kim, Jeongki | Ofinno |  |  |
| Huang, Po-Kai | Intel Corporation | |  |
| Fang, Yonggang | MediaTek Inc. | |  |
| Kandala, Srinivas | Samsung |  |  |
| Kalamkar, Sanket | Qualcomm Incorporated; Qualcomm Technologies, Inc | | |
| Fan, Shuang | Sanechips Technology Co., Ltd. | | |
| Khorov, Evgeny | IITP RAS |  |  |
| Zhou, Pei | TCL |  |  |
| Kim, Geon Hwan | LG ELECTRONICS | |  |
| Zhou, Huixuan | OPPO |  |  |
| Karamyshev, Anton | IITP RAS |  |  |
| Fischer, Matthew | Broadcom Corporation | | |
| Gu, Jaheon | Samsung Electronics Co., Ltd. | | |
| Genc, Eda | Nokia |  |  |
| Inoue, Kyosuke | SHARP CORPORATION | | |
| Jang, Insun | LG ELECTRONICS | |  |
| Johnsson, Kerstin | Nokia |  |  |
| Xia, Qing | Sony Corporation | |  |
| Li, Yanchun | Huawei Technologies Co., Ltd | | |
| Patil, Abhishek | Qualcomm Incorporated | | |
| Mutgan, Okan | Nokia |  |  |
| Nayak, Peshal | Samsung Research America | | |
| Lou, Hanqing | InterDigital, Inc. | |  |
| Quan, Yingqiao | Spreadtrum Communications (Shanghai) Co., Ltd.... | | |
| Urabe, Yoshio | Panasonic Holdings Corporation | | |
| Baykas, Tuncer | Ofinno |  |  |
| NANDAGOPALAN, SAI SHANKAR | Synaptics Inc | |  |
| Aio, Kosuke | Sony Corporation | |  |
| Perez, Javier | Ofinno |  |  |
| Lu, kaiying | MediaTek Inc. | |  |
| Cha, Dongju | LG ELECTRONICS | |  |
| Adachi, Tomoko | TOSHIBA Corporation | | |
| Wang, Xiaofei | InterDigital, Inc. | |  |
| Mehrnoush, Morteza | Apple Inc. | |  |
| Ryu, Kiseon | NXP Semiconductors | | |
| Varshney, Prabodh | Nokia |  |  |
| Petrick, Albert | InterDigital, Inc. | |  |
| Naik, Gaurang | Qualcomm Technologies, Inc | | |
| Lijun, Yu | self-funded | |  |
| Wang, Qi | Apple Inc. | |  |
| Wang, Lei | Futurewei Technologies/Huawei Technologies | | |
| LU, Yuxin | TCL Industries | |  |
| VIGER, Pascal | Canon Research Centre France | | |
| Shirakawa, Atsushi | SHARP CORPORATION | | |
| Ajami, Abdel Karim | Apple Inc. | |  |
| Wee, Gaius | Panasonic Holdings Corporation | | |
| Talarico, Salvatore | Sony Corporation | |  |
| Sung, Hyeonjun | WILUS Inc. | |  |
| LEE, JOONSOO | Newracom Inc. | |  |
| CHENG, yajun | Xiaomi Communications Co., Ltd. | | |
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| Byeon, Seongho | SAMSUNG ELECTRONICS | | |
| Ng, Boon Loong | Samsung Electronics | | |
| Tanaka, Yusuke | Sony Corporation | |  |
| Ouchi, Masatomo | Canon |  |  |
| Ratnam, Vishnu | Samsung Research America | | |
| Li, Weiyi | Spreadtrum Communication USA, Inc | | |
| Park, Minyoung | Apple Inc. | |  |
| Shi, Zhenpeng | Huawei Technologies Co., Ltd | | |
| Bao, Zhanjing | TCL |  |  |
| Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. | | |
| Monajemi, Pooya | Apple Inc. | |  |
| Park, Sungjin | Senscomm | |  |
| Sakamoto, Ryunosuke | SHARP CORPORATION | | |
| Manoharan, Jegan | Cisco Systems, Inc. | |  |
| Montemurro, Michael | Huawei Technologies Co., Ltd | | |
| Carney, William | Sony Group Corporation | | |

1. Announcements: : Clarifications on POC assignments (sent to TGbn reflector as well). The Tgbn chair went through the prepared questions and answers

**Question 1:** Is there a deadline for POC requests?

**Answer 1:** Yes, there is a deadline for POC requests. The deadline **was** **October 15th 2024**. Our editor is still including POC requests received after the deadline, and are highlighted in blue font in the tables.

**Question 2:**Even in the case of topics with multiple motions it is still difficult to split into multiple subtopics, as that also leads to technical discussions.

**Answer 2:**Technical discussions should be avoided for POC selection as that is not the purpose of having a POC. **Please select a POC on that topic (this means one POC per topic)** and then continue work within the TTT and the TGbn group on technical aspects as usual.

**Question 3:**  For topics that have no motions yet, can I request to be added as a POC once the group agrees to at least a motion for that topic?

**Answer 3:**Yes, please note that for now we are focusing on selecting POCs for topics that have at least one motion.

**Question 4:**What are the responsibilities/expectations of the POCs?

**Answer 4:**Please refer to item 4 of the guidelines ([11-24/1682r3](https://mentor.ieee.org/802.11/dcn/24/11-24-1682-03-00bn-tgbn-guidelines.docx" \t "_blank)), which are the same as the responsibilities/expectations we had for the same phase of TGbe (item 4 of [11-20/984r12](https://mentor.ieee.org/802.11/dcn/20/11-20-0984-12-00be-tgbe-teleconference-guidelines.docx" \t "_blank)). Additional clarifications were also provided in another e-mail sent to the reflector.

**Comments on the announcement:** On Question1, is that only for SFD topics.

**Answer:** Yes, covered under the answer of Question 3

**C:** So, in the PoC document, the blue only for SFD topics and others are greyed out

**A:** Yes

**C:** So, we can probably take out SFD topics

1. POC/TTT Assignment (1 hr): [24/1698](https://mentor.ieee.org/802.11/dcn/24/11-24-1698-05-00bn-tgbn-d0-1-spec-text-volunteers-and-status.docx): Discussion on PoC Assignment. The chair will ask if there is convergence on the PoC for a topic. One per topic. For each topic, the name listed under PoC would be the spokesperson
   * Question: Number of PoCs per topic. Some topics can be divided without motion. Can we have multiple PoCs per topic without a motion?
   * Answer: Better to have one PoC and have further discussion if there is a need for subtoics and more PoCs
   * PoC selection
     + Roaming: The PoC is asked if there is a convergence on PoC. No convergence yet. Comments follow:

The reluctance is due to the sub-topics and selecting PoCs is more technical and may be better to pick one.

Not at the point where we can assign an individual and there should be more discussion and that would be between now and November

Agree with the first commenter and picking one PoC at this time makes sense and then the PoC can discuss with TTT on how to spread the work. Offers himself to be the PoC

We would like to have more off-line discussion. Given that there is a fundamental divergence on both architecture and we should allocate it to someone who has a strong security background. Propose Michael Montemorro as the PoC

Due to the variance in group preference, single PoC or multiple PoC, can we have a vote on which way the group goes. Chair clarifies that it should be one PoC per topic.

Tgbn chair does not think it would help and since it is procedural and will only delay things. Tgbn chair is going to schedule a meeting with the WG leadership to resolve to figure out the next steps for this.

Would like to converge on this sooner and seconds Duncan Ho’s

Another commenter states that we should go for a single PoC

Another commenter expresses support for Duncan

Another commenter expresses support for Duncan

Chair expresses hope that he can have the PoC by Thursday so that a draft with some text be available

The two nominees will have offline discussion to resolve

* + - Power Save: No discussion/convergence yet

Several commenters noted that there has not been a discussion or never received any email on the topic

There are three topics: low/high capability, cross link power save and AP power save. Are we planning to divide into two topics or see it as only one? The chair responsed that he will go with the group’s intention, but the PoC should not be technical-based.

A commenter said that there has been no initiation of the group and would like to have some disussion. Would be opposed to have multiple PoCs

Another commenter also suggested a single PoC and wanted to move on

Liwen Chu has been assigned as the PoC

* + - NPCA: No discussion yet

Matt Fischer has been volunteered to be the PoC

Another member volunteers Yunbo Li

Chair asks the two nominees to discuss offline

* + - Buffer Status Report: Only one PoC candidate. Frank Hsu will be the PoC
    - Multi-AP Cordination Framework: Limited discussion so far and no convergence

A member requests to decide next time as one of the proposers is on vacation

Chair requests for some convergence by next meetng

* + - Coordinate Spatial reuse; Some discussion but no candidates have been set. Jason Guo would volunteer to be the PoC and asks if there are any objections?

A commenter requests for more discussion. Jason will initiate the discussion

* + - C-TDMA: limited discussion. Ming Gan and Sanket volunteer to be PoC

A commenter seconds Sanket

Ming will initiate the discussion to reach a consensus

* + - Co-RTWT: Several discussions. Giovanni and Rubayet have been discussing to be the PoC

Giovanni and Rubayet go through their qualifications

There is another volunteer for the position

Try to reach consensus over email

* + - In-device Coexistence: discussion on going over the reflector. Luarent being nominated as PoC

Two commenters second Laurent’s nomination

Another commneter is interested in long-term IDC if the role can be split among two. Chair requests clarification. Jason volunteers nomination

Another commenter stated that he is against splitting

If there is a split, Rubayet wants to volunteer for periodic long term IDC, but volunteers otherwise as well

* + - TWT SP Management: Discussion has been initiated.

Kumail would like to volunteer

Yue is also nominated as PoC

The nominees will discuss offline

* + - Control (ICF/ICR): No discussion for this one yet

Discussion will be initiated

1. Straw Polls (30’):
   * **SP1 (Laurent)-NPCA:** Do you support that the event that triggers switching to the NPCA primary channel shall be
     + OBSS Control frame exchange (e.g., (MU-)RTS/CTS) or
     + OBSS HE/EHT/UHR PPDU

*Supporting documents: [24/495r0]*

C: The proposer walked through the SP Question

C: One commenter noted that if the OBSS control frame exchange may be ambiguous. Which recipeitns of RTS/CTS should switch. Also, need to consider the case if there are other PPDUs

A: Control frame clarification will be next steps

A: For pre-HE PPDU, it can be further discussed, but since the information will only be in the MAC header and not on the PHY header and will end up conditions where they may not work. But if the group feels like having them we can discuss them as well

C: Not good to close door for other type of PPDUs, saying that it is TBD may be better

A: Every TBD can be brought back if there are discussions

* + - SP results: 129 total votes cast (58Y, 46N, 25A)
  + **SP2 (Laurent)-NPCA:** Do you support that the NPCA operation shall use the same EDCA parameters ((MU) EDCA Parameter Set, EPCS EDCA Parameters), on both the BSS primary channel and the NPCA primary channel.

*Supporting documents: [24/495r0]*

C: The proposer walked through the SP Question

C:Why is this mechanism having same parameter set?

A: To adapt to different conditions. You can have different EDCA, but keeping it same for simplicity

C: Makes sense. Also helps in not overloading the beacon with these parameters

C: Speak in support

C: Is this only related to same EDCA parameters in the baseline spec? Is this also related to EDCA procedure and invoking the NAVsync delay

A: This needs to be decided. The SP scope is only for parameters and not for the EDCA procedure

* + - SP results: 119 total votes cast (69Y, 25N, 25A)
  + **SP3 (Sanket)-CTDMA:** Do you agree that a TXOP owner AP announces its intention of sharing a portion of the time resource of its TXOP for C-TDMA operation, in an Initial Control frame (exact ICF and name TBD) sent at the beginning of the TXOP and that the frame polls AP(s) with whom it may share the TXOP to determine their interest?
    - A TXOP owner AP that intends to share its TXOP is referred to as a sharing AP.
    - A candidate AP identified (polled) in the Initial Control frame is referred to as a polled AP.
    - The Duration field of the frame is set to the length of time required to transmit the solicited response frame plus one SIFS.
    - Whether or not the sharing AP is mandated to send the Initial Control frame that announces that intention is TBD.

*Supporting documents: 11-23/1895, 11-24/0423, 11-24/1016, 11-24/1017, 11-24/1225*

C: The proposer walked through the SP Question

C: In favour of the SP. This procedure is needed in CTDMA to not waste medium time

C: Not in the right direction as ICF will add overhead. If the TXOP owner already has the TXOP then they should be able to share directily with another AP. Also, the sharing and shared AP definition is not clear (misunderstood the comment)

A: the TXOP owner shares all TXOP with the other APs.Also, same ICF can be used to poll the in-BSS STAs (using MU-RTS and BSRP). There is no issue with overhead as we are using the same for two purposes. Also, if the TXOP is blindly shared with another AP it may or may not be needed.

A: Agree that on the names, there has been a discussion and it can be TBD

C: I see this strawpoll is limited to CTDMA, but this ICF can be used for other coordination such as C-SR and C-BF

A: It is a good point, but the details may evolve differently, so I would like to limit to CDMA and the group can discuss on unification in the future

* + - SP Results: 129 total votes cast (70Y, 31N, 28A)
  + SP4 has been deferred due to lack of time on the agenda
  + **~~SP4 (Sanket)-CTDMA:~~** ~~Do you agree that, as part of the C-TDMA procedure, a candidate AP that is polled by the sharing AP shall provide, via a response,~~
    - ~~Its intention not to participate in TXOP sharing during the current TXOP.~~
    - ~~Its intention to participate in TXOP sharing during the current TXOP.~~
    - ~~Signaling details (including traffic indication) are TBD.~~

*~~Supporting documents: 11-23/1895, 11-24/0423, 11-24/1016, 11-24/1017, 11-24/1225~~*

1. Technical Submissions - Power Save + Feedback:
   * [24/1512](https://mentor.ieee.org/802.11/dcn/24/11-24-1512-00-00bn-high-capability-protection-in-dps.pptx) High-Capability Protection in DPS Maolin Zhang

C: Slide 5, is the STA to indicate to the AP to change its capability mode?

A: Yes, the STA or other STAs in the BSS

C: What is the usecase for this proposal?

A: The usecase is if the AP is in power save, then the STA wakes up AP, then other STAs can use the TXOP and do not have to wake up the AP again

C: Slides 4 & 5, you are proposing to indicate the expected PPDU duration in the ICF, what could be the usecase for such a long duration where the STA has that much load

A: The usecase is that the STA cannot be completed in a single TXOP.

C: If there are multiple TXOPs, the initiator would have to contend for multiple times or is it just once?

A: It has to recontend in each of the TXOPs

C: Let us say STA want to have the AP in higher capability in multiple TXOPs and if there is a neighboring AP that transmits in the high capability, then there is no guarantee to get what you want

1. AOB: No other businesss
2. Adjourn: Session adjourned at 9:01 PM EDT