IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TGbn November December 2023 teleconference minutes | | | | |
| Date: 2023-12-18 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Yusuke Asai | NTT | 1-1, Hikarinooka, Yokosuka, Kanagawa, Japan |  | yusuke.asai@ntt.com |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This document contains the minutes for TGbn November December 2023 teleconferences.

Revision history:

* Rev0: initial version.

Abbreviations:

* A: Answer
* C: Comment

# 1st Conf. Call: November 28th Monday (19:00–21:00 ET)

* The Chair, Alfred Asterjadhi (Qualcomm), calls the meeting to order.
* IEEE 802 and 802.11 IPR policy and procedure

Patent Policy: Ways to inform IEEE:

* + - Cause an LOA to be submitted to the IEEE-SA ([patcom@ieee.org](mailto:patcom@ieee.org)); or
    - Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
    - Speak up now and respond to this Call for Potentially Essential Patents

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair. **Nobody speaks/writes up**.

Copyright Policy: Participants are advised that

* + - IEEE SA’s copyright policy is described in [Clause 7](https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7) of the IEEE SA Standards Board Bylaws and [Clause 6.1](https://standards.ieee.org/about/policies/opman/sect6.html) of the IEEE SA Standards Board Operations Manual;
    - Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy

**Copyright Policy was presented.**

**Patent, Participation, Copyright and policy related subclause:** Please refer to Patent And Procedures**。**

* Attendance reminder.

Participation slide: <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>

Please record your attendance during the conference call by using the IMAT system:

* + - 1) login to [imat](https://imat.ieee.org/attendance), 2) select “802.11 Telecons (<Month>)” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click “<UHR SG > conference call that you are attending.

If you are unable to record your attendance, contact Alfred Asterjadhi ([aasterja@qti.qualcomm.com](mailto:aasterja@qti.qualcomm.com)) and Yusuke Asai ([yusuke.asai@ntt.com](mailto:yusuke.asai@ntt.com)) for assistance.

Please ensure that the following information is listed correctly when joining the call:

* + - "[voter status] First Name Last Name (Affiliation)"
* Agenda
  + Chair reviews proposed agenda found in [11-23-2140r](https://mentor.ieee.org/802.11/dcn/23/11-23-1311-00-0uhr-uhr-sg-july-august-2023-teleconference-agendas.docx)1
  + Discussion:
    - C: Jiaoung could not present the submission and deferred it.
  + Agenda approved with unanimous consent.
  + 1832, 1868, 1975, 2012
* Submissions
  + [11-23/1832r](https://mentor.ieee.org/802.11/dcn/23/11-23-1138-01-0uhr-features-to-consider-for-efficient-relay-operation.pptx) Multi-AP Cooridinated Spatial Reuse Hassan Omar (Huawei Technologies)
    - C: In the simulation, received signal power between AP1 and AP2 varies from -80 dBm to -58 dBm. Does the APs detect the received signal by ED threshold or PD threshold? If PD is used, there is the risk that two signals are not aligned. If the energy detection is used and the traffic is not full buffered, an AP never read the preamble of the PPDUs transmitted by other BSSs.
    - A: The simulation is not based on full buffer traffic. The assumption of full buffer traffic is only calculated by maximum throughput that can achieved. But the delay is not based on full buffer. By the time AP2 obtain TXOP and its cue is empty, after that the arrival of the time of packet transmission, AP2 can not transmit a packet. That is an issue where two PPDUs do not start at the same timing, but it was not considered in this simulation.
    - C: In Slide 12, the MCSs both the sharing AP and the shared AP are the same for the AP coordination scheme?
    - A: Yes. All of interference are symmetric.
    - C: How about the power control / reduction?
    - A: Just the same TX power is applied to the sharing and the shared APs. In the case without coordinated SR, MCS 11 is still used. But in the coordinated SR case, MCS is reduced to optimize the increased interference level. Instead of transmit power control, MCS adjustment was applied.
    - C: In Slide 8, you mentioned about the co-trigger frame indicates DL frame transmission start time. Do you assume shared AP transmission is based on synchronized manner?
    - A: I don’t assume the start time is not synchronized, but the issue of transmission is delayed.
    - C: Is there the same issue on the TB PPDU and acknowledment packets?
    - A: The problem with acknowledgement is different. Downlink Tx power is controlled by an AP, but UL is not controlled by STAs. Maybe those ACK frames collide between the AP1 and the AP2. The sharing AP should have an option to determine ACK policy to prevent ACK collision.
    - C: In Slide 13, did you compare the proposed coordinated SR and the current SR in your simulation?
    - A: At this time, that is not included in this presentation. Current simulation is based on the standard channel access without MU spatial reuse.
    - C: The proposed coordinated SR requires extra frame exchange, and it is important to compare them and see the benefit of the coordinated SR.
  + [11-23/1868r1](https://mentor.ieee.org/802.11/dcn/23/11-23-1139-00-0uhr-relay-transmission-in-uhr.pptx) Coordinated Spatial Reuse Design Jason Yuchen Guo (Huawei Technologies)
    - C: In Slide 4, you propose the unified framework for any kind of coordinated SR. Do you consider all of operation is within TXOP level or “beyond TXOP” level?
    - A: The coordinated SR in this submission is considered as TXOP level. And other scheme like coordinated TDMA is also TXOP level.
    - C: Regarding the CSR trigger frame, can we use the padding?
    - A: The current design is to reuse the padding design same as today.
    - C: You mentioned the APID for the AID 12 and the question is whether it is the BSSID or a new ID definition?
    - A: The BSSID is too long and the AID 12 is shortrer. I think it should be to define a new ID.
    - C: AID is not going to be global unique, which is a huge problem. TA plus the APID provides uniqueness.
    - A: APID could work, and this short ID could be assigned by the shared AP. Each sharing AP assigns a short ID to all the potential shared APs, and on the other hands, external setup is needed.
    - C: Please clarify the intention about the SP. It seems to try to exclode the coordinated rTWT. Is that you intention or you’re not trying to be exclusionary?
    - A: It’s not my intention to exclusion. The CSR is TXOP based and if it’s not, it could have another name.
    - C: Earier in your presentation, you talked about minimum TX power. It has a bit confused. Why sould it be defined?
    - A: Minimum power is like a threshold. During the CSR setup, if Tx power is too small, coordination may be calcelled.
    - C: In Slide 5, there are different measurement schemes, including the request/response. Are you envisioning this is a long-term measurement, basically the measurement right before the CSR?
    - A: If we used the request/response, this method is used for scenarios where the station does not move frequently because the request/response may take some time. But if there are some senarios where the condition changes, there may need some other NDP-based schemes.
    - C: What is the thought for the needs of the diferrent measurements?
    - A: It totally depends on the how much scenarios are supported. There are not only static but also dynamic scenarios.
    - C: Basically, you assume that the primary aim is to protect the clients of the sharing AP and basically shared AP’s clients are on best effort basis. Is that the overall kind of assumption that you are making?
    - A: That’s a simpler design. It’s just the sharing AP does not a global calculation for all the STAs just caer about its own STAs.
    - C: In Slide 6, do there several APs form two or more groups?
    - A: The number of groups is not a discussion topic on this presentation and just one group is assumed. But here I just want to say is that a sharing AP initiates CSR transmission with more than two shared APs.
    - C: Does that mean the sharing AP negotiates with every neighbor AP and assign APID to everyone? Is this you intention?
    - A: Yes.
    - C: Regarding the channel information from the other BSSs at the stage not associated with, some protocol modification may be needed. It is with respect to the sounding protocol.
    - A: Existing measuremet, which are not based on NDP transmission, require long time duration. New procedure to know OBBS pathloss may be needed. I am open for proposal to discsuss this.
    - C: I agree with the policy of the redefining the trigger info field. We should consider the case where there are multiple caididate of shared APs.
    - C: In Slide 3, how does a sharing AP know the minimum TX power limitation of shared APs when the negotiation is happening before the coordinated SR trigger frame in the overall procedure?
    - A: A coordinated SR trigger frame indicates the maximum power for the shared AP. Minimum power is a kind of threshold of transmit power to be determimed by the negotiation.
    - C: OK. This is not the trigger frame, but you have a separate setpu procedure of that, is it correct?
    - A: Yes. It is just one setup of procedure (negotiation aggrement.)
    - C: Which step do you agree to negotiate the CSR?
    - A: This is out of setup.
    - C: In Slide 3, why do we need the CSR padding information at the first place?
    - A: In 11ax, the trigger-based UL transmission was defined, and a STA can indicate some padding needed to respond. Also in 11be, EMLSR is defined. There is an initial controlframe that needs to just set up a padding for the STAs having some time to prepare to respond. Similary for the shared AP. I just put a CSR pending delay during the setup.
    - C: Why do we need to delay for preparation?
    - A: There could need some calculation time for the shared AP to determine the transmission parameters for calculation of transmit power at the sharing AP.
    - C: In Slide 5, after the trigger frame is transmitted, PPDU1 is tnansmitted by the shared AP. Do you think it is enough? Would we need something for the response frame as well?
    - A: After the CSR setup, both sharing and shared APs will enter active SR mode and they start sending/receiving data. I think that is the next level discussion.
    - C: You see that scheme to be used in the symmetrical way. What is your opinion that should be dounlink on the case?
    - A: In downlink case, sources of interference are simple. In uplink case, we can also consider that. There need more discussions for unsymmetric cases.
  + [11-23/1975r1:](https://mentor.ieee.org/802.11/dcn/23/11-23-1146-01-0uhr-relaying-for-low-latency-traffic-in-uhr.pptx)  Cooordinated spatial re-use for UHR Rainer Strobel (MaxLinear)
    - C: In Slide 6, please clarify the condition of unassociated STAs.
    - A: The unassociated STAs are assumed to enable the coordinated SR answers to the sounding of the unanassociated APs.
    - C: How do the STAs that do not support current sounding procedure behave?
    - A: It needs more consideration. I didn’t do the detailed study on what changes need to be done. Rx responding has benefit for protection.
    - C: What is TDMA in simulation scenario? Do you mean the standard contention-based channel access or coordinated TDMA?
    - A: It was coordination in the sense that there was no collision.
    - C: How can TDMA perform a better than half-coordinated OBSS? In Slide 3, when you have those additional 3dB of the interference, what is the MCS reduction that you simulated?
    - A: It depends on the individual case but often there is one MCS number reduction and then some performance penalty occurs.
    - C: When TDMA operates better than the half-coordinated OBSS, the primary AP unnecessarily reduces its MCS and the secondary AP cannot exploit that granted TXOP. Is this understanding right?
    - A: Whanever the increased data rate of the secondary transmission is less than the data rate loss of the 3 dB interfrefence, AP increases, coordinate SR outperforms TDMA.
    - C: In Slide 6, how do you determine to transmit both data packets?
    - A: We assumed that the coordinated SR packet starts slightly later because the secondary transmission needs to figure out that the primary transmission is going and it’s now ready to transmit. In addition, some extra time is assumed.
    - C: In your scheme, you don’t need to use any trigger­-based operation, right?
    - A: Yes.
    - C: Considering the case where there are more than two AP, is the conclusion changed?
    - A: I need to check. In general, if APs get more separation, the better throughput is obtained.
    - C: I think separation is very important. One suggestion is that you should look at the other MAP that would combine with your scheme.
    - C: In Slide 10, secondary AP/STA performance degrade. Also in Slide 13, more degradation is found. I would like to know how the scheme can deal with such a degradation case.
    - A: Details are further study. Fairness and optimization are trade-off. We can take account of the penalty in terms of fairness on the optimized solution, but we need further study on that.
    - C: How much overhead for sounding did you assume?
    - A: It was not considered on the result.
    - C: I guess if overhead is considered, the CDF curves moves to left (degraded.)
    - A: I think the only additional part is the coordinated SR feedback packets, which are extremely short because it contains only one value. So, the additional complexity is the sounding sequence itself. Only this feedback is extra overhead.
    - C: In Slide 5, four STAs are assumed. Do you mean the BSS you are seeing and the OBSS do the transmission?
    - A: Yes. Two parallel MU-MIMO transmissions are assumed.
    - C: Did you randomly drop four STA and associated to an AP? Then it depends on the locations whether AP may get one, two or three STAs.
    - A: Yes.
    - C: Is all transmission beamformed or MU-MIMO?
    - A: Yes.
    - C: I think since in this case you have 4x2 MIMO, if all NDP feedback frames are received, better performance can be achieved. I think two single user transmission may be more simple approach in this scenario.
  + [11-23/2012r0](https://mentor.ieee.org/802.11/dcn/23/11-23-1090-00-0uhr-seamless-roaming-follow-up.pptx) Location Dependent Performance of C-SR Jun Minotani (LG Electronics)
    - The presentation was postponed due to lack of remaining time.
* AoB:

None

* Adjourned at 20:51 ET

# Appendix

Attendee List for 1st Conf. Call:

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbn | 11/27 | To be added. |  |