IEEE P802.11
Wireless LANs

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| UHR SG July August 2023 teleconference minutes |
| Date: 2023-07-24 |
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Abstract

This document contains the minutes for UHR SG July August 2023 teleconference.

Revision history:

* Rev0: initial version.

Abbreviations:

* A: Answer
* C: Comment

# 1st Conf. Call: July 24th Monday (10:00–12:00 ET)

* The Chair, Laurent Cariou (Intel), 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); 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 Laurent Cariou (laurent.cariou@intel.com) and Ross Jian Yu (ross.yujian@huawei.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 [11-23-1311r](https://mentor.ieee.org/802.11/dcn/23/11-23-1311-00-0uhr-uhr-sg-july-august-2023-teleconference-agendas.docx)0

Discussion:

* + - C: would like to present r1.
	+ Agenda approved with unanimous consent.
* Announcements:

None

* Submissions
	+ [11-23/1138r1](https://mentor.ieee.org/802.11/dcn/23/11-23-1138-01-0uhr-features-to-consider-for-efficient-relay-operation.pptx) Features to consider for efficient Relay operation Dongguk Lim (LG Electronics)
		- C: Slide 7, in this figure, CSI is useful for relay STA instead of AP. Why this feedback is sent to AP?
		- A: My assumption is that non-AP associates to AP. All the control is done by the AP.
		- C: In what kind of operation does the AP need the feedback?
		- A: Regarding the feedback info, we can consider CSI or other info. The AP can decide transmit parameter, MCS, RU or bandwidth etc., which is applied to the relay link.
		- C: we can further discuss offline.
		- C: slide 5, the trigger to the non-AP STA is also coming from the AP?
		- A: yes.
		- C: the association of the non-AP is to the AP?
		- A: yes. Relay STA doesn’t have any AP funcation.
		- C: The AID assignment is with respect to the AP?
		- A: in my assumption, relay STA is a non-AP STA, associated to the AP.
		- C: Relay STA is a non-AP STA, later on, when the relay STA wants to servce the non-AP STA. Does it need some AP function?
		- C: we can do offline discussion.
		- C: slide 6, relay STA may use MIMO or BF to STA 1 or STA n?
		- A: yes. We can consider BF or MIMO for the relay link. Need more discussion.
		- C: my concern is that the relay STA, as a non-AP STA, may not have BFer capability. We can discuss more what capability does the relay STA need to have.
		- C: Do you consider channel information in your relay selection? Or do you treat them independently?
		- A: Relay STA is located near the AP. I assume relay STA has good channel condition. The channel between AP and relay STA is good. That’s my assumption. We should consider relay STA is near the AP, it has the good condition.
		- C: you are considerting RSSI as a measurement whether the STA 1 and 2 is close to the relay or far from the relay. Is it true?
		- A: The procedure in slide 5, the non-AP STA transmits UL PPDU, the relay STA measures the RSSI based on measuring the UL PPDU. One way is to use RSSI as an example. We can consider more metrics and need more discussion.
		- C: RSSI measurement is not enough. The AP will get the RSSI from the STA and relay together?
		- A: yes.
		- C: we can continue discussion.
	+ [11-23/1139r0](https://mentor.ieee.org/802.11/dcn/23/11-23-1139-00-0uhr-relay-transmission-in-uhr.pptx) Relay transmission in UHR Dongguk Lim (LG Electronics)
		- C: slide 9, for UL Relay transmission, how can you guarantee non-AP STA can receive trigger from the AP?
		- A: The non-AP STA is an associated STA, it can receive some signaling from the AP. AP can exchange frames with non-AP STA, which is located at the boundary.
		- C: You are assuming the AP can reach the non-AP STA. But cannot receive directly from STA1?
		- A: Even STA can receive from AP. By relay operation, we can apply high MCS.
		- C: it is a tradeoff. Either use low MCS to receive from AP directly or from the relay, use higher MCS but longer time.
		- C: slide 8, why does AP need to get Ack3?
		- A: I assume all the control for relay operation is done by the AP. The relay cannot do retransmission directly. Based on the ACK from the end user, the AP can decide retransmission.
		- C: does AP need to get Ack1?
		- A: regarding Ack1,2,3, we need more discussion. We can further optimize the procedure. To guarantee the successful of PPDU1, we can have Ack1.
	+ [11-23/1146r1](https://mentor.ieee.org/802.11/dcn/23/11-23-1146-01-0uhr-relaying-for-low-latency-traffic-in-uhr.pptx) Relaying for Low Latency Traffic in UHR Serhat Erkucuk (Ofinno)
		- C: I agree with you when the relay and STA have ML, it will help reduce latency. There are challenges to select the link and timing to forward the relay data. But all of these are implementation choice. I want to ask what should we do in the standard. Maybe I miss something.
		- A: Opt 2, we need to define how do we determine the receiver and destination address.
		- C: The receiver address is the STA’s MAC address, and the destination address is the MLD address. Seems to me, it is quite clear. I don’t see an issue here.
		- A: There may be some different addressing issues.
	+ [11-23/1090r0](https://mentor.ieee.org/802.11/dcn/23/11-23-1090-00-0uhr-seamless-roaming-follow-up.pptx) Seamless Roaming Follow-up Yelin Yoon (LG Electronics)
		- C: slide 8, confused about the 2nd bullet. It says AP1 and AP4 are co-located. Whether APs are co-located is if they are in the same device. It seems AP1 and AP4 are not in the same device.
		- A: In this case, we are considering all AP MLD are co-located. Consider the logic connection. Even they are physically separated. We also take this into consideration of co-located. It is a little bit different concept from what have talked about.
		- C: we can have more offline discussion.
		- C: slide 8, synchronization, how can you know if the existing mechanisms can still hold?
		- A: I think we need to see the requirement of MLDs. Find out if work out or not. The co-location can be used for AP MLD identification.
		- C: You have a specific order, AP1 is changing to AP2, is this an example? What would be the order? Which link is the first line to change?
		- A: It is just an example. STA1 can do roaming first, or STA2, or at the same time. It depends on how they build the device.
		- C: how does STA1 make sure AP4 is available at that time?
		- A: since AP1 and AP4 are within the same AP MLD. It will transfer the data between them. AP MLD1 will know and notify the STA.
		- C: slide 5, where is the UMAC located? Same device? Or a separate device?
		- A: We are only considering the logic aspect. We haven’t got into the physical part. This is something needs to be discussed as well.
		- C: slide 8, AP MLD 1 and AP MLD 2 are located within the same physical device?
		- A: yes. They are close to each other basically.
		- C: Compared with non-co-located AP MLD. What is the gap?
		- A: the other presentations, they have a bit different meaning towards co-location. In our case, we are using co-location as the methods which devices are physically located.
		- C: My question and a lot of prevous questions, you can have upper MAC, all the lower MACs in each AP MLD. What you have here, could still use that architecture.
		- A: this is one of the options.
	+ [11-23/1131r0](https://mentor.ieee.org/802.11/dcn/23/11-23-1131-00-0uhr-thoughts-on-seamless-roaming.pptx) Thoughts on seamless roaming Ryuichi Hirata (Sony Corporation)
		- No Q&A
	+ [11-23/0665r1](https://mentor.ieee.org/802.11/dcn/23/11-23-0665-01-0uhr-resource-management-for-multi-ap-coordination.pptx) Resource Management for Multi-AP Coordination Peshal Nayak (Samsung)
		- No Q&A
* AoB:

None

* Adjourned at 11:52 ET

# Appendix

Attendee List for 1st Conf. Call:

Attendee List for 2nd Conf. Call:

Attendee List for 3rd Conf. Call:

Attendee List for 4th Conf. Call: