IEEE P802.11
Wireless LANs

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| Minutes for TGbn MAC Ad-Hoc Teleconferences in May to July 2024 |
| Date: 2024-05-30 |
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Abstract

This document contains the minutes for the TGbn MAC ad hoc teleconferences in May to July 2024.

Revisions:

* Rev0: Added the minutes from the MAC ad hoc teleconferences held on May 30 and Jun 6.

**May 30, 2024 (TGbn MAC ad hoc teleconference)**

Chairman: Srinivas Kandala (Samsung)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex.

**Introduction**

1. The Chair (Srinivas Kandala, Samsung) calls the meeting to order at 10:00am. The Chair introduces himself and the Secretary (Jeongki Kim, Ofinno).
2. The Chair goes through the 802 and 802.11 IPR policy and procedures and asks if there is anyone that is aware of any potentially essential patents.
	1. Nobody responds.
3. The Chair goes through the IEEE copyright policy.
	1. **Copyright Policy: Participants are advised that**
		1. IEEE SA’s copyright policy is described in [Clause 7](https://standards.ieee.org/about/policies/bylaws/sect6-7.html%22%20%5Cl%20%227) of the IEEE SA Standards Board Bylaws and [Clause 6.1](https://standards.ieee.org/about/policies/opman/sect6.html) of the IEEE SA Standards Board Operations Manual;
		2. Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy
4. The Chair recommends using IMAT for recording the attendance.
	1. 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.
	2. If you are unable to record the attendance via [IMAT](https://imat.ieee.org/attendance) then please send an e-mail to Srinivas Kandala (srini.k1@samsung.com), Jeongki Kim (jeongki.kim.ieee@gmail.com), and Xiaofei Wang (xiaofei.wang@interdigital.com)
5. The Chair asked whether there is comment about agenda in 11-24/964r1.
	1. The Chair goes through the submissions.
	* 24/0151 Establishment of Security Key for Control frame SunHee Baek
	* [24/0490](https://mentor.ieee.org/802.11/dcn/24/11-24-0490-00-00bn-discussion-on-control-frame-and-mac-header-protection.pptx) Discussion on Control Frame and MAC Header Protection Yunbo Li
	* 24/0497 Security enhancement (control frame protection) follow up Liwen Chu
	* 24/0502 MAC header protection follow up Liwen Chu
	* [24/0525](https://mentor.ieee.org/802.11/dcn/24/11-24-0525-00-00bn-mac-header-data-integrity-with-relaxed-receiver-requirement.pptx) MAC header/data integrity with relaxed RXer requirement Li-Hsiang Sun
	* ~~24/0535 Trigger, BA, and BAR Protection follow up Po-kai Huang~~
	* [~~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~~
	* [~~24/0443~~](https://mentor.ieee.org/802.11/dcn/24/11-24-0443-00-00bn-discussion-on-bounded-delay-in-industrial-scenarios.pptx) ~~Discussion on Determining Latency in Industrial Scenarios Yue Xu~~
	* [24/0668](https://mentor.ieee.org/802.11/dcn/24/11-24-0668-01-00bn-data-forwarding-within-txop-for-xr-use-cases.pptx) Data-forwarding-within-TXOP-for-XR-use-cases Seongho Byeon
	* [24/0797](https://mentor.ieee.org/802.11/dcn/24/11-24-0797-00-00bn-operating-mode-request.pptx) Operating Mode Request Yongsen Ma
		+ Po-kai, Abhi, Yue requested to defer their presentations.
	1. From TGbn Chair
		1. The document should be uploaded at least 24 hours prior to the call.
		2. The agenda should be approved.
	2. The agenda is approved with modifications.

 **Submissions**

1. 24/0151 Establishment of Security Key for Control frame SunHee Baek

C: slide 5, first bullet, both STAs support security keys, what about the group? What if one of STAs does not support for group control frame? control frame includes integrity check?

A: Yes, MIC can be ignored by the STA.

C: Implementation may be confusing.

C: how much time does the STA estimate whether the frame is valid? Within SIFS?

A: Yes

C: This is 11bn, assuming going ML operation. Those are carried by AP MLD and non-AP MLD rather than STAs or AP.

C: unique key is per link. MLO link id may be need in PTK generation.

A: cPTK cGTK is different per link

C: We need to use MLO link ID.

C: Take a look at 11be related subclause.

C: question, MU-BAR with cGTK and BA with cPTK is ok?

A: Depends on use case. It is unicast or broadcast.

1. [24/0490](https://mentor.ieee.org/802.11/dcn/24/11-24-0490-00-00bn-discussion-on-control-frame-and-mac-header-protection.pptx) Discussion on Control Frame and MAC Header Protection Yunbo Li

C: slide 3, try to use TF and initial control frame from 11ax, be,... we have to consider this now. Management frame is similar. First time, unprotected management frame is used.

C: We need to focus on specific important tech model to improve . Wi-Fi 8 should improve the security feature.

A: We can resolve this issue after wi-fi 8. We can solve future.

C: Beacon protection and other management frame protection are good examples. We do introduce up to Wi-Fi 7. Similar trends.

A: I thought whether it’s real issue. But don’t think so.

C: MAC header protection. There are many field in header. PM, A-Control fields, SN, are not protected. The second bullet is not true. There is a paper cited. Very easy to create the attack. Score boad context, sequence numbe spaces. We need to at least protect the MAC header and control frame.

A: We can look at the other advance. Look like endless target. Separate standards would be better with better experts. That’s not the main target for Wi-Fi 8.

C: Liwen, Generall agree with Po-Kai and Abhi.

A: backward compatitable. Most control frames are used by legacy STAs.

C: our TG is ultra high reliability. Prevention is better. We should consider several things. Optional feature.

A: Ultra High reliability, It’s more important to reduce the delay and reduce PPR(?).. We need to discuss motivation.

C:, slide 5, this is optional. If STA does not want to support, just not implement.

C:, you have to look at the requirement carefully. Cost.

C:, we already have BAR frame protection.

1. 24/0497 Security enhancement (control frame protection) follow up Liwen Chu

Discussion : None

1. 24/0502 MAC header protection follow up Liwen Chu

Discussion: None

1. [24/0525](https://mentor.ieee.org/802.11/dcn/24/11-24-0525-00-00bn-mac-header-data-integrity-with-relaxed-receiver-requirement.pptx) MAC header/data integrity with relaxed RXer requirement Li-Hsiang Sun

Presented. No discussion due to lack of time.

The teleconference was adjourned at 12:00.

**June 6, 2024 (TGbn MAC ad hoc teleconference)**

Chairman: Srinivas Kandala (Samsung)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex.

**Introduction**

1. The Chair (Srinivas Kandala, Samsung) calls the meeting to order at 10:00am ET. The Chair introduces himself and the Secretary (Jeongki Kim, Ofinno).
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.
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3. The Chair goes through the IEEE copyright policy.
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	2. If you are unable to record the attendance via [IMAT](https://imat.ieee.org/attendance) then please send an e-mail to Srinivas Kandala (srini.k1@samsung.com), Jeongki Kim (jeongki.kim.ieee@gmail.com), and Xiaofei Wang (xiaofei.wang@interdigital.com)
5. The Chair asked whether there is comment about agenda in 11-24/964r4.
	1. The Chair goes through the submissions.
		1. [24/0525](https://mentor.ieee.org/802.11/dcn/24/11-24-0525-01-00bn-mac-header-data-integrity-with-relaxed-receiver-requirement.pptx) MAC header/data integrity with relaxed RXer req. Li-Hsiang Sun [Q&A]
		2. [24/0443](https://mentor.ieee.org/802.11/dcn/24/11-24-0443-00-00bn-discussion-on-bounded-delay-in-industrial-scenarios.pptx) Discussion on Determining Latency in Industrial Scenarios Yue Xu
		3. [24/0668](https://mentor.ieee.org/802.11/dcn/24/11-24-0668-01-00bn-data-forwarding-within-txop-for-xr-use-cases.pptx) Data-forwarding-within-TXOP-for-XR-use-cases Seongho Byeon
		4. [24/0797](https://mentor.ieee.org/802.11/dcn/24/11-24-0797-00-00bn-operating-mode-request.pptx) Operating Mode Request Yongsen Ma
		5. [24/0318](https://mentor.ieee.org/802.11/dcn/24/11-24-0318-00-00bn-robust-secondary-channel-access.pptx) Robust Secondary Channel Access Yanchun Li
		6. [24/0449](https://mentor.ieee.org/802.11/dcn/24/11-24-0449-02-00bn-considerations-on-dynamic-subchannel-operation-follow-up.pptx) Considerations on DSO–Follow Up Liuming Lu
	2. For 525, need more presentations. It’s ok.
	3. The agenda is approved.

 **Submissions**

* 1. [24/0525](https://mentor.ieee.org/802.11/dcn/24/11-24-0525-01-00bn-mac-header-data-integrity-with-relaxed-receiver-requirement.pptx) MAC header/data integrity with relaxed RXer req. Li-Hsiang Sun [Q&A]

C: slide 12, slide 4, in the botttom scenario. Protected BA. What is protected?

A: B will not send BA for fake frame. Both side can detect fake transmissions.

C: what is the time until orignator accepted BA?

A: SIFS after the data.

C: there is delay for receiver side for decoding it? How does A know the time of processing by B?

A: A need know time. A can transmit BAR.

C: In partial state, the operation doesn't work.

C: what we’re actually protecting again? Data?

A: Somebody can change the header while some body can change data.

* 1. [24/0443](https://mentor.ieee.org/802.11/dcn/24/11-24-0443-00-00bn-discussion-on-bounded-delay-in-industrial-scenarios.pptx) Discussion on Determining Latency in Industrial Scenarios Yue Xu

C: what does it mean STA TxMOde Negotiation? How does it differentiate with SCS procedure?

A: We need one negotiation procedure for this. This is a little different from SCS procedure.

C: Slide 4, for target value of latency, 24ms is enough for industrial scenarios?

A: This is for one example.

C: Are you assuming the controled network? Or legacy device that is not controlled?

A: We just consider high level perspection.

* 1. [24/0668](https://mentor.ieee.org/802.11/dcn/24/11-24-0668-01-00bn-data-forwarding-within-txop-for-xr-use-cases.pptx) Data-forwarding-within-TXOP-for-XR-use-cases Seongho Byeon

C:, slide 7,, STA B send A-MPDU1 to AP and AP sends A-MPDU 1 to STA A. Does AP not need to decode A-MPDU?

A: MAC addesses should be changed.

C: If AP does not particapte in, then AP does not decrypt the data and STA A and STA B should exchange security keys.

A: Let me think about more.

C: If MAC addess is changed by AP, how do you know addresses? ICF or QoS data?

A: If AP know destination address (A3) and forwarding traffic, it’s possible. And it can transmit it in ICF also.

C: What’s the different between this and relaying?
A: For Relay, AP is endpoint. In this case, AP is relay.

C: I need have more details. Whether A and B can hear each other?

C: why can’t you address this in TXOP sharing? You can use the existing TXOP sharing scheme. What’s the gap? Why would you go with this? Rather than SCS and TXOP sharing?

A: STA initiates the transmission and AP forwards it to another STA.

C: SCS is already there. Defines the requirement of STAs.

A: SCS may not be appropriate for aperiodic traffic.

C: Do we need DF-ICF/ICR for data forwarding case always?

A: It depends on the scenarios. AP may need time for data forwarding procedure.

C: What’s the DF-End? Is it CF-End?

A: CF-end is for finishing the TXOP. DF-END is not.

* 1. [24/0449](https://mentor.ieee.org/802.11/dcn/24/11-24-0449-02-00bn-considerations-on-dynamic-subchannel-operation-follow-up.pptx) Considerations on DSO–Follow Up Liuming Lu

C: slide 3, do you have some details of IDC scenarios ?

A: Some allocation is for bluetooth transsmion.

C: It’s not the bluetooth case because the bluetooth is not frequency hopping.

C: OBSS scenarios means it’s suffer from OBSS transmission you can still use SR. Why do you consider?

A: In SR case, low rate may be used. In DSO, high data rate can be used.

C: slide 8, it looks like power save not DSO for reduction of bandwidth.

A: operating parameters should be negotiated.

C: DSO negotiation slide(6), you need just operating bandwidth of STA not maximum operating bandwidth. If STA may change operating bandwidth, they should negotiate it. It may be complicated

C: Figure (slide 8), do you assume DSO operation, STA may switch the channel. STA will not cover primary channel. That’s the typical case.

A:Primary channel can be used for other STAs. Primary 20 need to be occupied.

* 1. [24/0797](https://mentor.ieee.org/802.11/dcn/24/11-24-0797-00-00bn-operating-mode-request.pptx) Operating Mode Request Yongsen Ma

C: We have OMN or OMI.

A: Existing is OMI or OMN just notification. In this case, we want to negotiate request/accepted.

C: What’s the difference of transition from low capa to high capap?

C: If AP operates in low capa, then STA can transmit request of high capa?

C: On high capa, we can get high throughput.

A: You can do this this is just an example. There could be other parameters rather than BW or NSS. EDCA parameters.

The teleconference was adjourned at 12:00 ET.