Minutes IEEE P802.11
Wireless LANs

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| IEEE 802.11 TGbh Meeting Minutes, 31 August 2021Randomized and Changing MAC addresses (RCM) |
| Date: 2021-08-31 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Stephen Orr | Cisco | NY |  | sorr@cisco.com |
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Abstract

This document contains the minutes of the IEEE 802.11 bh telecom Interim meeting 31 Aug 2021.

Note: Highlighted text are action items.

Q- proceeds a question asked at the meeting

A- proceeds an answer

C- proceeds a comment

**Meeting August 31, 2021 9.00 to 11.00 am ET**

**Chair: Mark Hamilton**

**Vice Chair: Peter Yee (NSA-CSD/AKAYLA)**

**Vice Chair: Stephen Orr (Cisco)**

**Secretary: Graham Smith (SRT Wireless)**

**Editor: Carol Ansley (Cox)**

**The teleconference was called to order by Chair 09.04 hrs. EDT,**

Agenda slide deck 11-21/1420r0

**Policies and procedures were presented by the chair. (Slides 4 to 14)**

There were no Patent declarations.

Copyright policy slides were presented (Slides 10 and 11)

1. **Agenda:**
* Attendance, noises/recording, meeting protocol reminders
* Policies, duty to inform, participation rules
* Organization topics (see also Backup slides):
	+ PAR/CSD: [https://development.standards.ieee.org/myproject-web/public/view.html#pardetail/8770](https://development.standards.ieee.org/myproject-web/public/view.html); [11-20/1117r5](https://mentor.ieee.org/802.11/dcn/20/11-20-1117-05-0rcm-rcm-sg-proposed-rcm-csd-draft.docx)
	+ Timeline estimate
* Issues Tracking/Contributions
* Next meetings: Sept Interim

The Chair reviewed the agenda.

No more comments

The proposed agenda was adopted without objection.

Attendance is listed at end of the Minutes.

1. **Timeline**
* PAR approved Feb 2021
* First TG meeting Mar 2021
* D0.1 Nov 2021
* Initial Letter Ballot (D1.0) Mar 2022
* Recirculation LB (D2.0) Jul 2022
* Initial SA Ballot (D3.0) Nov 2022
* Final 802.11 WG approval Mar 2023
* 802 EC approval May 2023
* RevCom and SASB approval May 2023
1. **TGbh Issues Tracking document: 11-21/0332r13**

Chair discussed the Tracking Document/Contributions (slide 16) 11-21/0332r13.

Q – Inclusion of 11-21/1247r3 and straw poll

A- Will be included in discussion

1. **Document 11-21/1140r1**

Chair asked for members to review the issues matrix and provide comments

1. **Document 11-21/1247r3 presented by Liuming Lu**

Discussed modified straw poll text (slide 7)

“Do you agree that TGbh should consider a mechanism to assist the AP to identify an associated non-AP STA when the non-AP STA uses different MAC addresses for different associations. This identity is in MAC layer, and should be secure, and does not expose a privacy concern for the non-AP STA”

C – this should be discussed in 802.11TGbi

A – bh focuses on MAC address – this should be in the scope of bh

Q – The material presented before concerning FT and key derivation should be in scope of bi.

Q – should we interpret this straw poll in context of just this presentation and earlier slides?

C – confusion around the use cases – 11bi and 11bh are talking about the same problems. 11bh and 11bi scope is not clear and confusing.

C – 11bh is about fixing things that may go wrong with RCM and 11bi is increasing privacy. This text is relevant to this group.

C – The strawpoll is independent of the use case. Hope that this clarifies TGbh scope.

C – Strawpoll is a logical extension of the issues tracking document. Connects back to the use cases around post-association, home automation and access control, device identification, troubleshooting and support. TGbh scope is defined by the PAR.

Q – Does this apply to insecure open connections? Open networks with Captive portals are widely affected but there is no way to provide privacy and security

A – with an open network there would be nothing to protect their privacy – should add use case to tracking doc.

Q – Concerned that this text does not include a user opt-in. Without such a text this could be an implementation where users are tracked without their consent.

Q – the reason for this proposal is that it mentioned FT – the reason to run this strawpoll is wrong.

A – the strawpoll is not related to FT.

Q – give an example from within your presentation on what would be in the scope of 11bh

A – 4.6 Grocery Store use case would be relevant to the straw poll.

Q – Can I (Po-Kai Huang) present my document

C – Please put the document reference in the chat

A - <https://mentor.ieee.org/802.11/dcn/21/11-21-1395-00-00bi-view-on-private-identifier.pptx>

Q – What is the definition of privacy – can the network track you or a user? The network itself should not be able to track you, the user should be able to opt-in.

A – Without user opt-in we are reinstating tracking of users/devices – don’t see how the strawpoll text addresses privacy concerns.

C – If you go by what .11aq say if you want to maintain state, you want the network to know you are coming back…use the same MAC address. If you don’t want the network to know, use a different MAC address. If the network is secure you can establish an identity with other mechanisms. If there is another problem we want to solve – we need to clarify the need.

C – Concerned that .11aq has already described the boundaries of maintaining state. 11aq did the best it could at the time – stating that you would use the same MAC address on (re)association. The implementations are taking this a step further where they are randomizing their MAC more often than .11aq may imply which breaks more things. Part of bh is to respond to that behavior. Either reinstate what 11aq was trying to accomplish or come up with mechanism to keep things working.

C – Devices are maintaining their MAC addresses when returning to a network which is a privacy problem. We are not addressing privacy problems in 11bh.

C - .11 Mechanisms are being broken with RCM implementations not to create new privacy concerns.

C – This has to be a client decision

C – two concepts in some of these comments which are causing confusion.

1. Opt-in – should this be added to the straw poll. Last sentence can be read as implying opt-in.

2. Privacy from What or Whom? 3rd party snooping, back end facility etc

C – text modified for Strawpoll

“Do you agree that TGbh should consider a mechanism to assist the AP to identify an associated non-AP STA when the non-AP STA uses different MAC addresses for different associations in opt-in scenario. This identity is in MAC layer, and should be secure, and does not expose a privacy concern for the non-AP STA”

C – run the strawpoll and then discuss

Q – why in an opt-in scenario would we use a different identifier it would be equivalent to the MAC address. Why is this an improvement over using the MAC address?

A – difference is in the last sentence – the identity wouldn’t be visible as the MAC address is.

C – In BLE a STA can use a non-resolvable address and it can also use a resolvable address. The resolvable address has shared a secret (is secure). Should we be looking for another mechanism for the STA to be identified to the AP?

C – 11bh and 11bi are focused on the same end goal.

Chair – lets run the straw poll, its just a data point, then Po-Kai can present his document.

Strawpoll:

“Do you agree that TGbh should consider a mechanism to assist the AP to identify an associated non-AP STA when the non-AP STA uses different MAC addresses for different associations in opt-in scenario. This identity is TBD in MAC layer, and should be secure, and does not expose a privacy concern for the non-AP STA.”

Voting 14

Yes (8) - 57%

No (2) - 14%

Abstain (4) - 29%

1. **Document 11-21/1395 presented by Po-Kai Haung**

Added to agenda with no objection

<https://mentor.ieee.org/802.11/dcn/21/11-21-1395-00-00bi-view-on-private-identifier.pptx>

11bh and 11bi are looking at the same problem from different angles. Suggest effort should be in 11bi

C – 11bh PAR comes from people Randomizing MAC Address – but might be because of privacy (observing the fact that RCM could break operations). The consequence is what we are concerned with. In 11bi we are concerned about privacy – are there ways that we can look into the standards to not expose identity.

Chair – brought up PAR and went over 5.5 Need for the Project

In bh we are trying to address what happens when a client decides to change their address and maintain operations.

C – 11bh is reacting to the current practice of RCM and if there is something broken, we fix it. In a sense not designing new things. If its something new then it should be 11bi. Output of 11bh should be a report or draft amendment.

A – This is a gray area. What is adding something new? Any change to the spec is adding something new. Part of the PAR – design mechanisms to enable optimal user experience with RCM.

Chair – for a given solution what is within our scope or not. May need the group to decide.

C – everyone is using different terms

C – 7.1 was answered incorrectly in both 11bh and 11bi. This would help establish an understanding that the groups are similar, but why are they different.

C – have a joint session that helps define the differences between bh and bi

C – Create a discussion document to resolve what goes where.

C – During the study group phase – divisions/focus was defined. Let’s take a look at the minutes of the study group for clarification. 11bh was supposed to be focused and quick, 11bi was more broad and would take longer.

Chair – will reach out to the 11bi Chair for a discussion. We need to focus on the solutions being proposed. Keep the work within those buckets.

**General Discussion**

Chair - we need to sort out some of the scope question. Might help to define the line with specific example (look at the proposals) and determine if they are in the scope of bh or bi.

11-21/1083r0

11-21/1378r0

11-21/1379r0

**Out of time to start further discussion.**

**Next calls Sept Interim**

**Meeting Adjoined at 10.51 ET.**

**Attendance**

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| Breakout | Timestamp | Name | Affiliation |
| TGbh | 8/31 | Hamilton, Mark | Ruckus/CommScope |
| TGbh | 8/31 | Henry, Jerome | Cisco Systems, Inc. |
| TGbh | 8/31 | Hervieu, Lili | Cable Television Laboratories Inc. (CableLabs) |
| TGbh | 8/31 | Huang, Po-Kai | Intel Corporation |
| TGbh | 8/31 | Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbh | 8/31 | Montemurro, Michael | Huawei Technologies Co., Ltd |
| TGbh | 8/31 | Ng, Boon Loong | Samsung Research America |
| TGbh | 8/31 | Orr, Stephen | Cisco Systems, Inc. |
| TGbh | 8/31 | Petrick, Albert | InterDigital |
| TGbh | 8/31 | Rosdahl, Jon | Qualcomm Technologies, Inc. |
| TGbh | 8/31 | Shalom, Hai | Google |
| TGbh | 8/31 | Smith, Graham | SRT Wireless |
| TGbh | 8/31 | Torab Jahromi, Payam | Facebook |
| TGbh | 8/31 | Yee, Peter | NSA-CSD |

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