Minutes IEEE P802.11  
Wireless LANs

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| IEEE 802.11 TGbh Meeting Minutes, October 12, 2021  Randomized and Changing MAC addresses (RCM) | | | | |
| Date: 2021-10-12 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Graham SMITH | SR Technologies | Sunrise, Florida |  | gsmith@srtrl.com |
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Abstract

This document contains the minutes of the IEEE 802.11bh telecom Interim meeting October 12, 2021.

Note: Highlighted text are action items.

Q- proceeds a question asked at the meeting

A- proceeds an answer

C- proceeds a comment

**Meeting Oct 12, 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 9.03 hrs. EDT,**

Agenda slide deck 11-21/1666r0

1. **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
* Response to WBA liaison (contribution needed)
* Issues Tracking/Contributions (next slide)
* Next meetings: Oct 21, Oct 26, Nov 4

The Chair reviewed the agenda.

Any comments? None

Agenda accepted

Chair pointed out that he is looking for a contribution for a response to the WBA. Suggested it be along the lines of stating that we did consider their points and discussed them as to their relevance to TGbh

1. **Contributions:**
   * + [11-21/1083r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1083-00-00bh-a-signature-based-method-for-identifying-stas-with-randomized-mac-addresses.pptx) (A signature-based method for Identifying STAs with randomized MAC address)
     + [11-21/1585r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1585-01-00bh-identifiable-random-mac-address.pptx) (Identifiable random MAC addresses)
     + 11-21/1634?
   * Specific text proposals:
     + [11-21/1379r2](https://mentor.ieee.org/802.11/dcn/21/11-21-1379-02-00bh-proposed-text-for-id-query-action-frame.docx) (Proposed text for ID Query action frame)
2. **Contributions**

Chair asked if there was a presenter for 21/1083

No-one came forward

**Identifiable random MAC Address IRMA**

21/1585 was presented by Olivia Fernandez (SRT)

C – The 10 criteria were not really questions to be answered. #8 is wrong should be 2^64.

C – Clarify how work. AP stores list of keys, AP gets the Hash and address to find which one gives the right hash.

A – Can be started pre-association, can organize the list.

C – Hash changes every time. Depends on the list. Keep the list forever.

A – AP can timeout and just say I need a new key. Hash and the random changes every time.

C – No way you can store forever. IRMA and Hash created on the fly.

A - Only when STA wants to be known. Can start pre-association.

C – For a STA to set the Group bit, when AP sends back does it strip off that bit. May need to keep U/G apart.

A – Yes, that will be looked at, there are alternatives.

C – How is IRMK related to PMKs,

A – IRMK is presently a 128-bit key used with the IRMA to produce the IRM Hash. It has nothing to do with the PMK.

C – IRMK is sent when STA is associated, so assumed secure

C – Could be used for soft AP

C – Since AP has IRMK stored locally, expected needs to go through all IRMKs

A – Could use algorithms to be more efficient. Could suggest ideas.

Straw Poll

* **Do you agree that an Identifiable Random MAC scheme, along the lines as described in <this document>, should be further worked on for possible inclusion in the TGbh Amendment?**

C – Not sure it is doable to look at so many IRMKs

A - depending on AP /network capability. Faster hash functions, can limit search. Do not think unreasonable.

Yes: 9 No: 4 Abst: 5 No Answer 2

Chair asked if anyone wished to present 21/1634? No response.

**Proposed Text for ID Query Action Frame**

Mark Hamilton (Ruckus/Commscope) presented 21/1379r2.

C – A “device”? Is it not appropriate to use “device”. SME decision?

A - Yes will modify the language. Sure use SME

C – Some editorial changes required.

C – Optional for STA to provide anything.

C – There is no concept of wanting to be identified? Simply setting or not the ID bit?

A – No language for a STA to be identified, but can be entered

C – The ID itself is open ended and not sure why.

A – Idea is that maybe identified by different services, say a frequent shopping number or ID

A – Could use this for other reasons. No opt-in interface and I could use the client ID for other reason, GPS value OUI value and send to a client ID.

C – Cannot make such “can’t do” statements in the standard. Concern is way beyond our scope.

C – We are opening door to such a possibility.

A – Could use any frame, e.g. that frame similarly and we cannot stop that.

C – I see nothing here on MAC Address usage?

A – Not intending to change anything already in baseline.

Q – Same MAC address and ID then are doing a similar thing? Keeping same MAC address for each ESS? Are both in use as before?

A – Can use a different Address if you leave the network and come back. ID is in a protected frame and not visible.

Q – Will you add suggestions on how to use this?

A – Open to it. Maybe Annex?

C – Writing text on that maybe in TGbi domain.

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1. **Editorial and general discussion**

Chair asked secretary if any preferences for approach to text.

Diagrams in Visio.

Q – Do we need to wait for motions before entering text?

Q - Do we want to use the straw poll approach as per other groups or do we use Motions?

Chair, suggested we should have motions, but there are no motions possible until November, so could hold straw polls and be ready for motions in November?

Q - We have 3 proposals. Do we need a down-selection process? How do we compare?

A – Good point. We have three, ID query, signature, and identifiable address.

Chair – Need to go through the Issues document and that may help in the down selection.

1. **Issues Document**

Now rev 16

Chair walked quickly through the document.

4.1. Pre-association Client steering. Is there anything that is within our scope?

C – Do not cancel it today, will have an attempt to produce reasons to support that it is within scope.

C – If assumed same address per network then some cases are OK, but if purely random then some proposals can be used to satisfy a Use Case that is presently satisfied by the repeat MAC usage.

C – Using steering at all has been questioned as to whether it is within .11 scope at all, as no concept of steering is in the Standard.

4.2. Post Association control.

As long as opt-in we decided in scope.

4.3. Home automation

As long as opt-in, in scope

4.4, 4.5, 4.6, 4.7

Agreed was out of scope

4.8. Infrastructure

No real answer yet.

4.9. Rogue Client

Out of scope

4.10 Rogue APs

Not affected by RCM

4.11 Soft AP

Concept is out of scope of .11

4.12 Onboarding

Not yet closed on.

4.13 Customer support

Not yet settled. Enterprise may be different to home.

C – Think this is a keeper. Home would have a PMK whereas enterprise is .1X. Maybe split into two use cases?

4.14 Residential Gateway with Hotspot

Possibly outside scope and no mechanism to steer in .11.

Stays for now

4.15 Lawful surveillance

Probably out-of-scope

4.16 Emergency services

Not ours to fix

4.17 Public hotspot roaming

Covered by other cases

4.18 - 23 WBA

Covered already

Chair – Please review the document.

**Out of agenda**

**Meeting adjoined at 10.59 ET.**

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| **Attendance**  **Breakout** | **Timestamp** | **Name** | **Affiliation** |
| TGbh | 10/12 | Andersdotter, Amelia | Sky UK group |
| TGbh | 10/12 | Ansley, Carol | Cox Communications Inc. |
| TGbh | 10/12 | Bhandaru, Nehru | Broadcom Corporation |
| TGbh | 10/12 | Bredewoud, Albert | Broadcom Corporation |
| TGbh | 10/12 | Hamilton, Mark | Ruckus/CommScope |
| TGbh | 10/12 | Harkins, Daniel | Hewlett Packard Enterprise (Aruba Networks) |
| TGbh | 10/12 | Henry, Jerome | Cisco Systems, Inc. |
| TGbh | 10/12 | Huang, Po-Kai | Intel Corporation |
| TGbh | 10/12 | Kneckt, Jarkko | Apple, Inc. |
| TGbh | 10/12 | Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| TGbh | 10/12 | McCann, Stephen | Huawei Technologies Co., Ltd |
| TGbh | 10/12 | Orr, Stephen | Cisco Systems, Inc. |
| TGbh | 10/12 | Petrick, Albert | InterDigital |
| TGbh | 10/12 | Riegel, Maximilian | Nokia |
| TGbh | 10/12 | RISON, Mark | Samsung Cambridge Solution Centre |
| TGbh | 10/12 | Rosdahl, Jon | Qualcomm Technologies, Inc. |
| TGbh | 10/12 | Sevin, Julien | Canon Research Centre France |
| TGbh | 10/12 | Shalom, Hai | Google |
| TGbh | 10/12 | Smith, Graham | SRT Wireless |
| TGbh | 10/12 | Stanley, Dorothy | Hewlett Packard Enterprise |
| TGbh | 10/12 | Yee, Peter | NSA-CSD |

TGbh 10/12 Fernandez, Olivia SRT Wireless