Minutes IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IEEE 802.11 TGbh Meeting Minutes, July 25th, 2023  Randomized and Changing MAC addresses (RCM) | | | | |
| Date: 2023-07-25 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Stephen McCann | Huawei Technologies Co., Ltd | Southampton, United Kingdom |  | mccann.stephen@gmail.com |

Abstract

This document contains the minutes of the IEEE 802.11bh telecon meeting of July 25th, 2023.

Note: Highlighted text are action items.

Q- proceeds a question asked at the meeting

A- proceeds an answer

C- proceeds a comment

**Meeting July 25th, 2023 09:30 to 11:30 ET**

**Chair: Mark Hamilton (Ruckus/CommScope)**

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

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

**Secretary: Peter Yee**

**Editor: Carol Ansley (Cox)**

**The teleconference was called to order by the Chair at 09:32 ET.**

Agenda slide deck [**11-23/1310r0**](https://mentor.ieee.org/802.11/dcn/23/11-23-0592-00-00bh-agenda-tgbh-2023-april-4.pptx)

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**
* **Policies, duty to inform, participation rules**
* **Organization topics:**
  + Timeline reminder (slide 16)
  + Motions record: [**11-22/0651r21**](https://mentor.ieee.org/802.11/dcn/22/11-22-0651-21-00bh-tgbh-motions-list.pptx)
* **Comment Resolution**
  + **Tracking document:** [**11-23/1152r10**](https://mentor.ieee.org/802.11/dcn/23/11-23-1152-10-00bh-ieee-802-11bh-lb274-comments.xlsx)
  + **Comment topics list (slide 17)**
  + **Comment resolution queue (slide 18)**
* **Discussion on response to WBA liaisons:** [**11-21/0703r0**](https://mentor.ieee.org/802.11/dcn/21/11-21-0703-00-0000-2021-april-liaison-from-wba.docx)**,** [**11-21/1141r0**](https://mentor.ieee.org/802.11/dcn/21/11-21-1141-00-00bh-excerpts-of-wba-document-wi-fi-id-scope.pptx)**,** [**11-22/0668r0**](https://mentor.ieee.org/802.11/dcn/22/11-22-0668-00-0000-liaison-statement-from-wba-re-wi-fi-devices-identification-group.pdf)**,** [**11-22/0653r0**](https://mentor.ieee.org/802.11/dcn/22/11-22-0653-00-0000-2022-march-wba-whitepaper-re-device-identification.pdf)
  + [**11-23/0888r0**](https://mentor.ieee.org/802.11/dcn/23/11-23-0888-00-00bh-wba-liaison-discussion.pptx) **Stephen Orr**

Any comments? [None]

Any objections to agenda? [None] – approved

1. Timeline

The timeline is fine at the moment and there should be a re-circulation letter ballot in November 2023.

1. Discussions about Multi-Link Operation (MLO) in TGbi

Regarding the discussions within TGbi about MLO, nothing has been decided at the moment.

C: The MLD MAC address is currently exchanged in the clear and this may cause an issue.

C: There’s another approach, as a link MAC address could also be used.

1. [**11-23/1286r1**](https://mentor.ieee.org/802.11/dcn/23/11-23-1286-01-00bh-cr-for-the-status-code.pptx) – CR for the status code (Jay Yang)

CID 15,17,100,101,132,134

These CIDs have proposed comment resolutions to be rejected.

There were several comments to tidy up the reject reason.

C: Regarding the trouble shooting case, a graphical user interface could be used. Alternatively, the network could help.

C: The network operator could delete a log and therefore the user identity make be lost.

C: I’m not convinced that this issue is standards essential.

C: The status code is ok, but the IEEE 802.11 handshake should allow this type of information to be transmitted to the network. Therefore we don’t need to specify it’s use, as it will be implementation specific.

C: From the AP side, it will have to access a network database to verify the identifier from the non-AP STA. This is the main task of the AP. Therefore the status code does not really provide any extra information.

C: I think the status code is beneficial if the non-AP STA has been absent for some time. Either the WFA or WBA may be able to use this code at the network layer.

Rejected. At least, the status code may be beneficial for trouble shooting and on-line service notification use cases. The detailed analysis on the trouble shooting use case can be found in 11-23/1286r2 (<https://mentor.ieee.org/802.11/dcn/23/11-23-1286-02-00bh-cr-for-the-status-code.pptx>).

No objection

Chair: These resolutions will be formally motioned at some point in the future.

1. [**11-23/1245r7**](https://mentor.ieee.org/802.11/dcn/23/11-23-1245-07-00bh-cid-resolutions-irm-1.docx) - CID resolutions IRM – 1 (Graham Smith)

CID 135, 224

Q: Is the device ID per BSS or ESS?

A: It’s supposed to be per ESS.

C: If the values are different, then the AP can respond with “identify unknown”.

C: I can volunteer to work on CID 23 (Antonio de la Oliva)

Q: If the AP indicates an error, then what is the next step?

A: Perhaps there could be a new error code, about two identifiers being in conflict.

C: IRM is just an indicator to say that “you have been here before”.

C: Although the IRM does match a known MAC address. The Device ID is a long time identifier.

C: I think a new error code would be a good idea. Let’s define it and produce some new text.

More work required.

CID 38

Accepted without objection.

CID 49, 56, 102

The comment resolution proposes a re-write of this section.

Editorial instructions will be added to the revised text.

Revised. At Page 30.8 replace entire text in 12.2.11 with following

“To mitigate tracking and traffic analysis, a non-AP STA may randomly change its MAC address (see 4.5.4.10 (MAC privacy enhancements)).

This presents a problem for the network in that it is unable to identify a non-AP STA that previously associated and is not able to apply cached information from that previous association to the current association. The two mechanisms defined in 12.2.11 alleviate this problem.

The first mechanism, referred to as device ID, has the AP provide an identifier to the non-AP STA during association or PASN authentication that the non-AP STA can then report back to the AP during a future association or PASN authentication. The second mechanism, referred to as IRM, has the non-AP STA provide a random MAC address (different from the address it is using) to the AP during association or PASN authentication and then use that MAC address for the next association or PASN authentication.

The two mechanisms device ID and IRM, may be used concurrently.”

No objection

1. [**11-23/1250r0**](https://mentor.ieee.org/802.11/dcn/23/11-23-1250-00-00bh-cr-for-cids-in-annex-b.docx) - CR for CIDs in annex B (Jay Yang)

CID 110

Q: Isn’t this conditional on 11bh being supported?

A: So one of these would have to be enabled for 11bh to operate. They can’t be both optional.

Chair: Perhaps it would be better to use CFCMA: O1 or O2 in the PICS.

C: 11bh could be in use, but a user has decided not to use it.

Chair: Perhaps the author can contact Robert Stacey to determine how to specific conditional optional in the PICs

More work required

CID 152

The comment is rejected

Rejected. PC34:O in the IUT configuration follows the writing style in 11az specification (in B.4.3 IUT configuration CFPASN Support for PASN 12.13 PC34:O), no further change on this part.

No objection

1. [**11-23/1261r1**](https://mentor.ieee.org/802.11/dcn/23/11-23-1261-01-00bh-802-11bh-d1-0-cr-rejects.docx) - 802.11bh D1.0 CR Rejects (Kurt Lumbatis)

CID 138

C: I think this comment should be rejected, as the length can be already be determined.

C: The Working Group has changed the style of variable length fields, since IEEE 802.11-2020. Therefore the comment is strictly correct, but the comment still needs to be rejected.

Rejected. For Variable length fields in KDEs, REVme changed the style to label the field as variable.

No objection

1. [**11-23/1258r3**](https://mentor.ieee.org/802.11/dcn/23/11-23-1258-03-00bh-comment-resolutions-draft-3-0-section-12-7.docx) - Comment Resolutions Draft 3.0 Section 12.7 (Kurt Lumbatis)

CID 8, 9, 52, 53

C: There are several CIDs that discuss the length of the Device ID.

C: Remember that this Device ID sub-field may be contained within an association request, so the maximum length may need to be reduced to avoid fragmentation. This will be passed within the 4 way handshake, so it needs to be kept small.

C: Why not use 0..128?

Chair: Perhaps send an email out to the TGbh reflector to seek feedback on a suitable length constraint.

Further work required

CID 10, 36, 272

Revised. TGbh Editor: Replace P34.12 with the following: "The Device ID field contains a device ID as defined in 9.4.2.307a. (Device ID element)."

No objection

CID 11

Revised. TGbh Editor: Replace P34.61 with the following: “Device ID KDE is a KDE containing a device ID as defined in 9.4.2.307a.”

No objection

C: REVme has removed formulas in figure field lengths for KDEs only.

1. [**11-23/0537r7**](https://mentor.ieee.org/802.11/dcn/23/11-23-0537-07-000m-reassociating-sta-recognition.docx) REVme comment CID 4069 (Mike Montemurro)

There is a note within this submission about REVme and TGbh. Therefore REVme needs to be synchronized with TGbh.

Chair: I will try to follow this up in REVme.

**Meeting adjoined at 11:31 ET.**

**Attendance**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
| Breakout | | Timestamp | Name | Affiliation | |
| TGbh | | 7/25 | Bredewoud, Albert | Broadcom Corporation | |
| TGbh | | 7/25 | DeLaOlivaDelgado, Antonio | InterDigital, Inc. | |
| TGbh | | 7/25 | Hamilton, Mark | Ruckus/CommScope | |
| TGbh | | 7/25 | Henry, Jerome | Cisco Systems, Inc. | |
| TGbh | | 7/25 | li, yan | ZTE Corporation | |
| TGbh | | 7/25 | Lumbatis, Kurt | CommScope, Inc. | |
| TGbh | | 7/25 | McCann, Stephen | Huawei Technologies Co., Ltd | |
| TGbh | | 7/25 | Montemurro, Michael | Huawei Technologies Co., Ltd | |
| TGbh | | 7/25 | Patwardhan, Gaurav | Hewlett Packard Enterprise | |
| TGbh | | 7/25 | Petrick, Albert | InterDigital | |
| TGbh | | 7/25 | Rosdahl, Jon | Qualcomm Technologies, Inc. | |
| TGbh | | 7/25 | Sam, Harvey | Broadcom Corporation | |
| TGbh | | 7/25 | Sevin, Julien | Canon Research Centre France | |
| TGbh | | 7/25 | Smith, Graham | SRT Wireless | |
| TGbh | | 7/25 | Smith, Luther | Cable Television Laboratories Inc. (CableLabs) | |
| TGbh | | 7/25 | Yang, Jay | Nokia | |