IEEE P802.11
Wireless LANs

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| 802.11bh D0.2 CRs related to 12.2.11 |
| Date: 2022-09-13 |
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Abstract

This submission proposes resolutions to the following CIDs.

CID 2, CID 3, CID 4, CID6, CID 10, CID 11, CID 25, CID 26, CID 31, CID 33, CID 49, CID 50,
CID 51, CID 52, CID 53, CID 54, CID 55, CID 63, CID 65

Revisions:

* Rev 0 – Initial version of the document
* Rev 1 – Updated and cleaned up text
* Rev 2 – Updated text based on comments received for 22/1218
* Rev 3 – Incorporated edits and comments offered by Mark Rison, as well as edits made in the 09/06/2022 session.
* Rev 4 – add original text and edits based on review in the 09/12 Plenary meeting
* Rev 5-7 Additional wordsmithing and changes per comments received.
* Rev 8 – Edits made in first November session.
* Rev 9 – Edits to comment resolution table

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGbh D0.2 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbh D0.2 Draft. (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGbh Editor: Editing instructions preceded by “TGbh Editor” are instructions to the TGbh editor to modify existing material in the TGbh draft. As a result of adopting the changes, the TGbh editor will execute the instructions rather than copy them to the TGbh Draft.***

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| **CID** | **Commenter** | **Comment** | **Proposed Change** | **Resolution** |
| 2 | Jay Yang | please clarify what's the meaning of "opt-in" | as the comments | Revised:Resolve by removing opt-in and replacing with text in 12.2.11 describing actions taken by the non-ap STA indicating activation of the Device ID.Text changes provided for the editor with opt-in replaced with Device ID activated based on submission 11-22-1599r3. |
| 3 | Jay Yang | """When using FILS authentication, the non-AP STA sends the identifier"", need to clarify the identifier here, | As the comments | Revised:Text changes provided to the editor with the breakout of FILS and non FILS sections in the provided text for both non-AP STA and AP. |
| 4 | Jay Yang | "AP sends a new identifier", before AP send a new one, AP shall verify the old one, need to add verification sucessful and failure case. | As the comments | Revised:Resolve by edits to the baseline text describing the process utilized by the AP when it has received a Device ID from a non-AP STAText changes provided to the editor in the text below. |
| 6 | Jay Yang | the device ID verification proceudre is missing, need to add this part | As the comments | Revised:Text changes provided to the editor with the addition of added text which states that if the ID received by the AP is not recognized the AP shall 1) Use this old ID, or 2) provide a new one. |
| 10 | Jay Yang | """if it has one and opts-in to using it"" | As the comments | Revised:Resolved with changes to the baseline text defining what Device ID activation means, as well as a may statement for the non-ap STA.Text changes provided to the editor below. |
| 11 | Jay Yang | the device ID doesn't need to be updated in each assocation as it's exchanged in protected frame, it's very safe. | As the comments | Revised:Added text to the below stating that if the AP recognizes the ID, it need not send a new one.Text Changes provided to the editor below |
| 25 | Okan Mutgan | """When the non-AP STA sends the opaque identifier, it shall send the most recently received value from an | As the comments | Revised:Made changes in text for 12.2.11 to utilize the term Identifier. Also cross referenced the structures defined in other sections. Text Changes provided to the editor below. |
| 26 | Okan Mutgan | Generally speaking, device ID verification (fail ,success) should be considered in the protocol. | As the comments | Revised:Identifier Verification added in the Text BelowText Changes provided to the editor below. |
| 31 | Chaoming Luo | It's not clear how the transition (ie., has no ID -> has one ID) happens, because at the very beginning the non-AP STA does have one identifier and the ID staff described in this paragragh does not occur. | As the comments | Revised:Transitions handled in the text below.Text Changes provided to the editor below. |
| 33 | Amelia Andersdotter | At the risk of me word-smithing, maybe the discussions are better reflected by the following wording: "An AP may provide an identifier to a non-AP STA and the non-AP STA may optionally return that identifier to any AP in the same ESS..." | As the comments | Revised:Text changes in the provided text utilizing the terms may and shall in the appropriate text.Text Changes provided to the editor below. |
| 49 | Robert Stacey | "Opt-in to providing" is cumbersome. "In the same ESS" -- there is no precedent for "same". | As the comments | Revised:Modified Text to utilize the term Device ID Activated. Text Changes provided to the editor below. |
| 50 | Robert Stacey | "If inclusion of the identifier in an Association Request frame is restricted to FILS authentication then we need a shall statement to that effect. | As the comments | Revised:Modified text to clarify FILS, vs non-FILS passage of the identifier and what the mechanisms are to pass the identifier.Text Changes provided to the editor below. |
| 51 | Robert Stacey | "If inclusion of the identifier is restricted to the EAPOL Key messages for FT, then we need a shall statement to that effect. | As the comments | Revised:Modified text to clarify FILS, vs non-FILS passage of the identifier and what the mechanisms are to pass the identifier.Text Changes provided to the editor below. |
| 52 | Robert Stacey | """For other cases"" might not be clear enough; better to enumerate.The "/4" (in "message 2/4", etc.) is confusing since it is not part of the actual message name. Use the actual frame name. | As the comments | Revised:Modified text and cleaned up language surrounding EAPOL-Key messages.Text Changes provided to the editor below. |
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| 53 | Robert Stacey | "opaque identifier" is not defined and it is not clear how it differs from an "identifier'. Similarly, what distinguishes a "new identifier" from an "identifier" | As the comments  | Revised:Removed text and replaced all with Identifier. Note: Identifier will need to be more clearly defined elsewhere.Text Changes provided to the editor below. |
|  |  |  | 54Robert Stacey"Without modification" is unnecessary; if it is modified then it is not the identifier. The identifier is the value.As the comments | Revised:Removed Without modification in the new text.Text Changes provided to the editor below. |

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| 55 | Robert Stacey | "for this capability" is vague | As the comments | Revised:Clarified text and signaling. Text Changes provided to the editor below. |
| 63 | Mark Hamilton | Clarify "and the non-AP STA may opt-in" | As the comments | Revised:New text verifies the meaning of Device ID activated. Text Changes provided to the editor below. |
| 65 | Jarkko Kneckt | The STA Identifier should be taken into use only if the STA opts-in to use the identifier. Currently AP may just push a STA ID for the STA even if the STA does not want to have it. | As the comments | Revised:Clarified in the new textText Changes provided to the editor below. |

# Proposed text(Proposed text modifications are based on Draft 11bh 0.2)

TGbh editor: Make the following changes in 12.2.11 Device ID indication with the following:

This text incorporates the changes of 11-22/1082, and 11/22/1069

**12.2.11 Device ID indication**

An AP may provide an Identifier to a non-AP STA to allow any AP in the ESS to recognize the non-AP STA when it returns to that ESS even if the non-AP STA changes its MAC Address. The non-AP STA may provide that Identifier to any AP in the same ESS upon a new association. Exchanges of the Identifier are protected from third parties.

A non-AP STA indicates activation of Device ID for a particular ESS by setting the Device ID Active field to 1 in the Extended RSN Capabilities field (see 9.4.2.241 - RSNExtension Element) in (Re)Association Request frames sent to any AP in the ESS. An AP indicates activation of Device ID by setting the Device ID Active field to 1 in the Extended RSN Capabilities field in Beacon, (Re)Association Response, and Probe Response frames. All APs in a given ESS shall set this field to the same value.

A STA shall not send an Identifier to any STA that does not indicate Device ID is active..

A non-AP STA sends an Identifier, if it has one and has activated Device ID per the following:

1. When using FILS authentication in the Device ID element in the (Re)Association Request frame.
2. When not using FILS authentication in the Device ID KDE in message 2 of the 4 way handshake

An AP sends an Identifier if it has activated Device ID per the following:

1. When using FILS authentication in the Device ID element in the (Re)Association Response frame.
2. When not using FILS authentication, in the Device ID KDE in message 3 of the 4 way handshake.

A non-AP STA shall return the most recently received Identifier for an ESS when associating with any AP in that ESS when Device ID is active for both the non-AP STA and the AP.

When a non-AP STA with Device ID active associates to any AP in an ESS and does not provide an Identifier, the AP may assign an Identifier to the non-AP STA.

When an AP receives an Identifier from a non-AP STA which is not recognized it may:

* Assign a new Identifier to the non-AP STA,
* Use the received Identifier to identify the non-AP STA in subsequent (re)associations if no conflicting Identifier exists, returning the Identifier to the non-AP STA in acknowledgement,
* Ignore the Identifier if the AP or network does not wish to recognize or assign a new Identifier to the non-AP STA, returning nothing to the non-AP STA.

Note: a non-AP STA could send an Identifier previously provided by an AP in the ESS which is no longer recognized by the AP.

**References:**