IEEE P802.11
Wireless LANs

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| Proposed Text for ID Query Action Frame  |
| Date: 2020-12-29 |
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Abstract

This submission proposes a new action frame exchange to allow an AP to query a non-AP STA for a unique identifier after association.

The proposal is based on IEEE P802.11-REVmd/D5.0.

Revisions:

* Rev 0: Updated to REVmd D5.0, prepared for RCM/TGbh consideration.

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 TGmd Draft. This introduction is not part of the adopted material.

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

***Insert new row in Table 9-51 in 9.4.1.11 (Action field), after the last non-vendor specific entry***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Code** | **Meaning** | **See Subclause** | **Robust** | **Group Addressed Privacy** |
| <ANA> | ID Query | 9.6.30a | Yes | No |
| <ANA+1> - 125 | Reserved | - | - | - |

***Insert new row in Table 9-153 (Extended Capabilities field) in 9.4.2.26***

|  |  |  |
| --- | --- | --- |
| **Bits** | **Information** | **Notes** |
| <ANA> | ID Query Capability | The ID Query Capability subfield to 1 to indicate the STA supports the ID Query action frame. It is set to 0 to indicate that it does not support this action frame exchange. |

***Add a new subclause at the end of subclause 9.6 (Action frame format details)***

**9.6.30a Unique identification Action frame details**

**9.6.30a.1 ID Query Action field**

Two Action frame formats are defined, to allow an AP to query a non-AP STA for a unique identifier and for the non-AP STA’s response. An ID Query Action field, in the octet field immediately after the Category field differentiates the formats. The ID Query Action field values associated with each frame format are defined in Table 9-aaa (ID Query Action field values).

**Table 9-aaa – ID Query Action field values**

|  |  |
| --- | --- |
| ID Query Action field value | Description |
| 0 | ID Query Request |
| 1 | ID Query Response |
| 2-255 | Reserved |

**9.6.30a.2 ID Query Request frame**

The ID Query Request frame uses the Action frame body format. It is transmitted from an AP to a non-AP STA to request that the non-AP STA provide an identifier that the AP may store and use for future identification of the non-AP STA. The format of the Action field in the ID Query Request frame is shown in Figure 9-bbb.

|  |  |  |
| --- | --- | --- |
| Category | ID Query Action | Vendor Specific (optional) |

 Octets: 1 1 Variable

**Figure 9-bbb – ID Query Request frame Action field format**

The Category field is defined in 9.4.1.11 (Action field).

The ID Query Action field is defined in 9.6.30a.1 (General).

The ID QueryVendor Specific field is optionally present and includes one or more vendor-specific elements, as defined in 9.4.2.25 (Vendor Specific element).

**9.6.30a.3 ID Query Response frame**

The ID Query Response frame uses the Action frame body format. It is transmitted from a non-AP STA to an AP in response to a request that the non-AP STA provide a unique non-transitory identifier. The format of the Action field in the ID Query Request frame is shown in Figure 9-ccc.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Category | ID Query Action | ID Query Response | Length | ID (optional) | TTL (optional) | Vendor Specific (optional) |

Octets: 1 1 1 2 16 2 Variable

**Figure 9-ccc – ID Query Response frame Action field format**

The Category field is defined in 9.4.1.11 (Action field).

The ID Query Action field is defined in 9.6.30a.1 (General).

The ID Query Response field is defined in table 9-ccc (ID Query Response). The STA has the option to indicate that it will not provide an ID value or that it will.

**Table 9-ccc – ID Query Response field values**

|  |  |
| --- | --- |
| ID Query Response field value | Description |
| 0 | Decline to provide ID |
| 1 | ID Provided |
| 2-255 | Reserved |

The Length field indicates the length of the response ID, TTL and Vendor Specific fields, in octets.

When the ID Query Response field value is 0, the ID and TTL fields are not present, and the Vendor Specific field is optionally present. When the ID Query Response field value is 1, the ID and TTL fields are present, and the Vendor Specific field is optionally present.

The ID field provides the identification value that the requesting AP may use to identify this STA without regard to the MAC address used by the STA in the MAC header.

The TTL field is defined in Table 9-ddd (Time to Live field values). The lifetime of the ID is as indicated.

**Table 9-ddd – Time to Live field values**

|  |  |
| --- | --- |
| ID QueryTTL field value | Description |
| 0 | The ID is usable for the duration of this ESS association |
| 1-65533 | The ID is usable for the indicated time to live, in minutes |
| 65534 | The ID is usable for a vendor- or provider-specific period, specified outside the scope of this standard. |
| 65535 | The ID is permanent. |

The ID QueryVendor Specific field includes one or more vendor-specific elements, as defined in 9.4.2.25 (Vendor Specific element).

***Add a new subclause at the end of clause 11 (MLME)***

**11.aa Identification Management**

A non-AP STA may present a local MAC address or an otherwise randomized MAC address before or after association. For some APs and associated network services, a local MAC address that may change with each ESS association (or more quickly) will restrict the services that an AP can offer without additional identification. An AP may use the ID Query request message to request that an associated STA provide an identifying value that can be used across association events to consistently identify the particular STA, even if its MAC address changes. The ID Query request message may also include Vendor Specific information.

NOTE--Since the ID Query Request message is sent after a secure association is in place and management frame protection has been negotitated between the requesting AP and the target STA, then the ID in the response will be secure and kept private.

A non-AP STA may receive an ID Query request message from its associated AP after a secure association is in place. The STA may respond with an ID Query response that declines to provide the requesting AP with an ID, for example, if the STA does not trust the AP. Alternatively, the STA may respond with an ID and also indicate the amount of time that the AP may expect that ID to be valid in the time to live field. The ID Query response may also include Vendor Specific information.

NOTE—The AP’s SME may make the ID available to higher layers. Based on the query response or lack thereof from the STA, the AP or higher layer facilities might restrict the non-AP STA’s access in an implementation specific manner.