|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Proposed spec texts for AID anonymization | | | | |
| Date: 2024-10-25 | | | | |
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Abstract

This submission proposes spec text to address the need for AID anonymization, as per proposal in 1105r1

Revision History:

* Rev 0: Initial version of the document
* Rev 1: Address comments from first discussion
* Rev 2: Removed conflicting clause

***Discussion:***

This document is intended to be used with 24/1105r1.

|  |  |  |  |
| --- | --- | --- | --- |
| **CID** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 1515 | The AID anonymization may be possible only if the AP assigns new AID value for the STA. AID assignment may repeat many times and cause high signaling overheds. Please allow AP to fast assign AID value in Broadcasted control frames to associated STAs. | Define a mechanims to assign AID value to associated STAs. The AID assignment should use broadcast control frames and STAs' addresses when assigning the AID value. One control frame should be able to assign multiple AID values. | Revised. This submission proposes individual management frames to assign new AID value for the STAs. The resolution for the CID is shown in this document. |
| 1516 | The AID seems to be the most complicated parameter to anonymize. STAs should be allowed to operate without anonymizing AID value. | Define operation mechanism that allows STAs to operate without AID anonymization. For instance, the devices may only use UL EDCA access and DL MU PPDU may contain AID value for these STAs. The operation without AID anonymization may be relevant principle for IoT-devices or to operation with mobile hot spot. | Rejected.  The AID value is used in Beacons and most PPDU types. The AID is needed to ensure private use of these PPDU types and Beacon frames. |

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

***Modify Table 9-130 (Element IDs) as follows:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Element | Element ID | Element ID Extension | Extensible | Fragmentable |
| ...... |  |  |  |  |
| AID List element | 255 | <ANA> | Yes | Yes |
| ... |  |  |  |  |
| NOTE—See 10.28.6 (Element parsing) on the parsing of elements. | | | | |

* Element IDs

***Insert the following new subclause at the end of 9.4.2:***

**9.4.2.339 AID List element**

The AID List element contains a sequence of AID values for the receiving EDP non-AP MLD to use in a sequence of contiguous EDP epochs.

The format of the AID List Element is shown in figure 9-X

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Element ID | Length | Element ID extension | Start Epoch (SE) | AID List Value |
| Octets: | 1 | 1 | 1 | 2 | variable |

**Figure 9-X AID List Element**

The Element ID, Length and Element ID Extension fields are defined in 9.4.2.1 (General).

The Start Epoch (SE) field is the 2 least significant octets of the EDP epoch iteration in which the first AID of the AID List Value field is used.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Number of Epochs (NE) | AID for SE | AID for SE +1 | … | AID for SE+NE-1 | Padding |
| Bits: | 16 | 12 | 12 |  | 12 | 0 or 4 |

**Figure 9-Y AID List Value Field**

The format of the AID List Value Field is shown in fig 9-Y.

The Number of Epochs (NE) field indicates the number of consecutive epochs for which AID fields are provided.

The AID field is present for the Number of Epochs (NE).

A Padding field is optionally present to align the field to octet limits.

***TGbi editor: Append the AID Assignment frame to the end of the Table 9-628s as shown below.***

**9.6.38.1 EDP Action field**

**Table 9-628s – EDP Action field values**

|  |  |
| --- | --- |
| **Value** | **Meaning** |
| 4 | AID Assignment |
| 5 - 255 | Reserved |

***TGbi editor: Add the new clause and renumber accordingly.***

**9.6.38.X AID assignment frame format**

The AID Assignment frame is transmitted as a protected management frame by a CPE AP. The frame assigns AID values to the receiving CPE STA for the coming epochs.

**Table 9-628XX – AID Assignment frame format**

|  |  |
| --- | --- |
| **Order** | **Meaning** |
| 0 | Category |
| 1 | EDP Action |
| 2 | AID List |

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

The EDP Action field is defined in 9.6.38.1.

The AID List element is defined in 9.4.2.399 (AID List element).

***Replace clause 10.71.6 as follows:***

**10.71.6 Frame anonymization and AID**

A CPE AP MLD generates a list of AIDs that an associated CPE non-AP MLD shall use in the subsequent NE epochs.

The CPE AP MLD sends a protected AID Assignment action frame to the non-AP MLD with the AID List element that encodes the AID values.

The receiving CPE non-AP MLD and the CPE AP shall use the AIDs in the AID List element for any communications within the subsequent NE epochs.

Before the end of the NE epochs, the CPE AP MLD shall generate a new list of AID values and sends a new AID Assignment frame with the new AID List element to the non-AP CPE MLD. The AP shall generate and send new AID values periodically.

The CPE AP MLD may, at any point of time, generate a new AID list and send it to the CPE non-AP MLD. If the SE field of the AID list indicates an epoch for which an AID has been already assigned, the AIDs in the AID list shall override the previously assigned AIDs beginning from the epoch number value indicated by the received SE field of the AID List element.