IEEE P802.11
Wireless LANs

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| OTA AID Anonymization  |
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Abstract

Currently, the AID value of the CPE STA can be only assigned by the management frames transmitted by CPE AP. When unicast, these frames consume airtime. This signaling is only needed to assign the anonymized AID values, other anonymized address fields are calculated by the AP and the STA.

This submission eliminates the need for frequent management frames transmissions for the CPE STA address and AID anonymization. The anonymized AID value signaling may be the only individually addressed frames that power saving STA receives.

When periodic transmissions are not needed:

* CPE STA address and AID may be anonymized more frequently.
* CPE STA power consumption remains low. CPE STA does not need to wake up to receive anonymization frames.
* CPE AP can reduce management frames overhead. The CPE AP does not continuously transmit anonymization signaling to the associated CPE STAs.

## 10.71.2.1 Introduction

*Instructions to the 802.11bi Editor: Please add the shown text at the end of the clause.*

At the beginning of a group EDP epoch, the AID value of the CPE non-AP MLD is anonymized by using the BSS specific AID offset as described in clause 10.71.2.7 (OTA AID anonymization with BSS specific offset). A CPE AP MLD may assign new AID value to the non-AP CPE MLD in group EDP epoch as described in clause 10.71.6 (Frame anonymization and AID).

## 10.71.2.7 OTA AID anonymization with BSS specific offset

*Instructions to the 802.11bi Editor: Please add this clause and renumber the following clauses.*

The AP MLD shall reserve a range of AID values for each group EDP epoch. The AP MLD shall assign an AID value from the AID range of the corresponding group EDP epoch to a non-AP CPE MLD that joins to the group EDP epoch. The range of AID allocated by AP MLD shall not overlap AIDs assigned by the AP MLD to individual non-AP MLDs.

The OTA AID of the non-AP CPE MLD that has joined to the group EDP epoch is anonymized at the beginning of the group EDP epoch by using the following formula:

OTA AID = Smallest Anonymized AID + ((Assigned AID + AID\_Offset) Modulo (AID Range Size)), where:

* The Smallest Anonymized AID and AID Range Size values are signaled in the Enhanced Privacy element of the (Re)Association Response frame.
* The AID\_Offset is calculated with a BSS specific key and Group Epoch Number. The algorithm to calculate the AID\_Offset is TBD.

## 9.6.38.4 Group Enhanced Privacy (EP) element

*Instructions to the 802.11bi Editor: Please add the Smallest Anynomized AID and AID Range to the EDP Epoch Settings field. The other fields are expected to be included in submission 11-24-604.*

The Group Enhanced Privacy (EP) element signals epoch parameters in protected action frames. The Group EP element signals the default privacy epoch parameters in the protected Association Response frame. The Group EP element signals specific group epoch settings in STA Specific Setting Epoch action frames.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Element Id | Length | Element Id Extension  | EDP Epoch Settings |
| Octets:  | 1 | 1 | 1 | 0 or 12 |

## Figure -XX Group Enhanced Privacy (EP) element

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Smallest Anonymized AID | AID Range | Group Epoch Interval  | Next Epoch Start Time  | Time Range | Reserved | Epoch Duration | Current Epoch Number |
| Bits: | 11 | 11 | 14 | 64 | 16 | 4 | 8 | 48 |

## Figure XX – EDP Epoch Settings field

The EDP Epoch Settings field defines the anonymization mode of the STA.

The Smallest Anonymized AID field signals the smallest AID value that is periodically anonymized.

The AID Range field signals the number of AID values that are periodically anonymized.

**References:**