IEEE P802.11
Wireless LANs

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| Private Identifier Requirements for TGbh |
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Abstract

This document sets forth a proposed set of requirements for a private identifier as defined by TGbh. This may also be referred to as a Unique Identifier.

Versions

R0 -- Initial Version

R1 – Additional comments, Authors changed per requests, and document cleanup.

R2 – Changes made during the 01/19/2022 interim meeting

# Definition

A Private Device Identifier shall not be a MAC Address replacement but shall be a ‘blob’ which acts as a cross-reference for the MAC Address utilized by a STA for the period of the association.

It should contain unique, identifying information for the non-AP STA within the scope of the network if provided by the non-AP STA

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1) configured by the user,

2) generated by an application within the non-AP STA, or

3) assigned by the network and only provided to the network if the user of the device has provided informed consent to provide the identifier to the network.

The Private Identifier should be provided directly or indirectly to the WLAN network as soon as possible after the STA joins or pre-association if PASN is utilized so the WLAN so the network may quickly correlate the identifier with the STA after the association.

The method to correlate the device with the Private Device Identifier at higher layers is outside the scope of 802.11.

The network has the responsibility to communicate the type of ID(s) supported or required for the network or ESS.

Note: The Private Identifier could be an e-mail address, phone number, a UUID, a randomly generated text string, a certificate, a hashed or generated value, or any other unique identifier used by the network for the period of the association. It may additionally be utilized across associations if so desired.

# Informed Consent

Providing a private identifier to a network shall only be supplied with an informed consent by the user. It is understood that some users my refuse to give additional information to a network. However, the user must always be allowed to decide.

# Privacy

The Private Identifier shall remain private.

It should never be sent in unencrypted frames unless the user specifically allows the identifier to be sent in a network which does not implement encryption.

Warnings should be given to the user if providing a Private Identifier in an unencrypted WLAN network.

The Private Identifier may not be correlated with the STA’s MAC address by those outside of the network, thus the Private Identifier should be protected in encrypted frames.

Within the network the Private Identifier may be correlated with the STA’s MAC address during the period of its association by various network entities.

# Length and Format

The Private Identifier may be of variable length or fixed length depending on the type of identifier. The length should be limited to a finite size to minimize network device storage requirements.

## Text Based

The maximum length should be limited to 64 UTF-8 encoded characters. This will allow for a UUID to be utilized as the identifier as well as an e-mail address. It is suggested that the minimum length of a text based Private Identifier be eight(8) UTF-8 encoded characters.

## Hash Based

It is suggested that a hash identifier be a minimum of 256/128 bits.

## Certificate Based

It is suggested that a certificate identifier be a minimum of 2048 bits.

# Duration of Use

The duration of the Private Identifier (i.e., the period that the Private Identifier is used within the network) shall be configurable by the user. For some networks it may be permanent, for some it may be a one-time use, for others a duration may be defined in terms of days or hours.

If a duration is defined, the Private Identifier shall not be utilized in the network after its expiration unless or until re-enabled by the user.

Upon expiration of the Private Identifier, the networkq should purge the identifier from its resources.

# Network Resources

A private identifier and its use in the network should minimize the following network resources:

## Memory Requirements

A private identifier shall minimize its memory footprint within the network. It is outside the scope of this work to mandate network storage requirements in support of Private Identifiers.

## Processing Requirements

Use of a private identifier should attempt to minimize processor utilization within network resources. If a computationally intensive process to support a private identifier is suggested, then a study of the processor utilization should be presented.

# Network Requirements

A network may require a private or unique identifier in order to grant network access to a STA. The requirement should be advertised such that a STA may understand the requirement before trying to join the network.

**References:**

IEEE 802.11-21/1531