IEEE P802.11
Wireless LANs

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| Randomized or Changing MAC address Use Cases |
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Abstract

This submission contains use cases for the RCM TIG consideration, including customer support and troubleshooting, and residential wireless gateway with hotspot.

This material (or part of it) may be integrated into the RCM TIG’s report to the Working Group.

R0 – initial version

**Use case 1: Customer Support and Troubleshooting**

Service providers are deploying wireless gateways in residential environments.  With about two thirds of customer complaints related to Wi-Fi, operators ought to provide a best-in-class technical support when a subscriber faces Wi-Fi related issues. As an example, a subscriber has 16 devices connected to his Wi-Fi network. He has set-up different SSIDs for his guests, his kids, and his personal devices.  The subscriber is experimenting connectivity and low performance issue on his wireless network. When he calls the technical customer center, the technician is able to identify the MAC address of the faulty device and ask the subscriber to reset its device and reconnect to the wireless network.

### Randomized MAC address impacts

The technician uses the MAC address OUI of the device to point out the device manufacturer to the subscriber. If the device uses a locally administered randomized MAC address, the subscriber must check the MAC address of each individual device to figure out the faulty device, increasing the troubleshooting time. Troubleshooting is also more difficult if the device uses a different MAC address per SSID.

### Rapidly changing MAC address impacts

A rapidly changing MAC address (i.e. every 24 hours or less) will impact the ability of troubleshooting the Wi-Fi network, especially when intermittent issues are observed over long period of time.

**Use case 2: Residential Wireless Gateway with Hotspot**

Service providers are deploying residential wireless gateways with public hotspots to expand their network coverage and capacity. With millions of hotspots available, subscribers can enjoy the benefit of complementary and seamless Wi-Fi connectivity while on the go. When a subscriber is at home, however, its devices should connect to the wireless home network rather than the hotspot available on the residential gateway. If a device connects to the hotspot, the subscriber doesn’t have access to its local network, cannot print files or access his network attached storage, or enjoy his gigabit subscription. The gateway can prevent “home devices” to connect to the hotspot based on their MAC addresses.

### Randomized MAC address impacts

When a device uses a different MAC address per SSID, the gateway cannot enforce the device to connect to the home network rather than the hotspot. The subscriber has to manually connect his device to the home SSID.

### Rapidly changing MAC address impacts

The impact is similar the Randomized MAC address case.