

Additional Use Cases for Sub 1 GHz license-exempt Frequency Bands

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Objective

- **This contribution proposes use cases following the IEEE 802.11ah Call for Proposals [1].**
- **This contribution discusses the use cases as reported in [2] and proposes additional use cases.**

About IEEE 802.11ah

- **Scope:**

This amendment defines an OFDM PHY operating in the license-exempt bands below 1 GHz, e.g., 868-868.6 MHz (Europe), 950-958 MHz (Japan), 314-316 MHz, 430-434 MHz, 470-510 MHz, and 779-787 MHz (China), 917-923.5 MHz (Korea) and 902-928 MHz (USA) and enhancements to the IEEE 802.11 MAC to support this PHY, and provides mechanisms that enable coexistence with other systems in the bands including IEEE 802.15.4 and IEEE P802.15.4g. [1]

Motivation

- **Some possible application and traffic model candidates for Sub 1 GHz license-exempt bands have been introduced in DCN 1044 [2].**
- **Other important/helpful use cases should be added which are related to long range wireless networks.**

Sub 1 GHz license-exempt Use Cases

(from DCN 1044)

- **Outdoor access with low data rates**
 - Smart Grid
- **Outdoor access with low data rates (other than Smart Grid)**
 - Ranching
 - Mountainous
 - Farming and Agricultural
 - Hunting Lodge
 - Light residential and suburban
- **Types of traffic**
 - Sensors
 - Video surveillance

Discussion

- **Type of application**
 - Should indicate the application or business model which is going to be addressed by this standard.

- **Type of (data) traffic**
 - Should indicate the type of (data) traffic which is going to be addressed by this standard.
 - There might be some existing coexistence requirements which need to be considered in regard to the traffic type/traffic characteristic.

Proposed list of IEEE 802.11ah Use Cases

- **Use case 1:**
 - Type of application
 - Smart Grid
 - Type of data traffic
 - Meter information
 - Power delivery/distribution data
 - Billing information
- **Use case 2:**
 - Type of application
 - Intelligent Transport Systems (ITS)
 - Type of data traffic
 - Traffic information (accident, re-route)
 - Logistics data (time of delivery, parcel/container condition data)
 - Toll data
- **Use case 3:**
 - Type of application
 - Surveillance
 - Type of data traffic
 - Location/position information
 - Emergency call data
 - Video/sound/motion data

References

- [1] **IEEE P802.11 Wireless LANs, IEEE 802.11ah Call for proposals, IEEE 802.11-10/1373r0, 11.11.2010**
- [2] **IEEE P802.11 Wireless LANs, IEEE Sub 1 GHz license-exempt Use Cases, IEEE 802.11-10/1044r0**