IEEE P802.11
Wireless LANs

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| WLAN Sensing Functional Requirements |
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Abstract

This document describes functional requirements of WLAN sensing.

# 1. Introduction

## 1.1 Purpose

This document summarizes requirements for solutions addressing functionality to be provided by a Wireless Local Area Network (WLAN) Sensing amendment.

## 1.2 Scope

The scope for deriving functional requirements is primarily set by the Project Authorization Request (PAR) [Ref-1] and Criteria for Standard Development (CSD) [Ref-2] proposed by the WLAN Sensing Study Group (SENS SG), as well as by [TBD].

## 1.3 Notation

Requirements are identified by a preceding unique number in the format of “SENS R*n*”, where *n* is an integer number representing the ID of the requirements.

# 2. Functional Requirements

## 2.1 WLAN sensing operation

[SENS R1] The amendment shall enable stations (STAs) to perform one or more of the following:

* to inform other STAs of their WLAN sensing capabilities,
* to request and setup transmissions that allow for WLAN sensing measurements to be performed,
* to indicate that a transmission can be used for WLAN sensing, and
* to exchange WLAN sensing feedback and information. [Ref-1] and [Ref-2].

[SENS R2] The amendment shall define WLAN sensing operations that rely on transmissions that are requested, unsolicited, or both. [Ref-1] and [Ref-2].

[SENS R3] The amendment shall define interfaces for applications above the MAC to request and obtain WLAN sensing information. [Ref-1] and [Ref-2].

## 2.2 Bands of operation

[SENS R4] The amendment shall define WLAN sensing operations in license-exempt frequency bands between 1 GHz and 7.125 GHz and above 45 GHz. [Ref-1] and [Ref-2].

## 2.3 PHY

[SENS R5] The amendment shall define modifications to the Directional Multi Gigabit (DMG) and enhanced DMG (EDMG) physical layer (PHY) specifications to enhance WLAN sensing operation. [Ref-1] and [Ref-2].

[SENS R6] The amendment shall define modifications to the PHY service interface of the High Throughput (HT), Very High Throughput (VHT), High Efficiency (HE) and Extremely High Throughput (EHT) PHYs to enhance WLAN sensing operation. [Ref-1] and [Ref-2].

## 2.4 MAC

[SENS R7] The amendment shall define modifications to the IEEE 802.11 medium access control layer (MAC) to enhance WLAN sensing operations. [Ref-1] and [Ref-2].

## 2.5 Backward compatibility and coexistence

[SENS R8] The amendment shall provide backward compatibility and coexistence with legacy IEEE 802.11 devices operating in the same band. [Ref-1] and [Ref-2].

## 2.6 Compliance to PAR and CSD

[SENS R9] The amendment shall comply with the PAR [Ref-1] and the CSD [Ref-2].

# References

[Ref-1] 802.11 SENS SG Proposed PAR, 11-19-2103-09-SENS-802-11-sens-sg-proposed-par.docx

[Ref-2] SENS SG proposed CSD draft, 11-20-0042-03-SENS-sens-sg-proposed-csd-draft.docx