IEEE P802.11
Wireless LANs

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| IEEE 802.11bf Functional Requirements Document |
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Abstract

This document describes the 802.11bf Functional Requirements.

Revisions:

- Rev 0: Initial version of the document.

# 1. Introduction

## 1.1 Purpose

This document summarizes requirements for solutions addressing functionality to be provided by the 802.11bf amendment, referred to as the TGbf Functional Requirements (FRs).

## 1.2 Scope

The scope for deriving functional requirements is primarily set by the Project Authorization Request (PAR) [Ref-1] and the Criteria for Standard Development (CSD) [Ref-2]. As specified in [Ref-3], additional requirements may be added if agreed by the task group.

## 1.3 Notation

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

# 2. Functional Requirements

## 2.1 WLAN sensing operation

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

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

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

[TGbf R3] The amendment shall define a MAC service interface for layers above the MAC to request and retrieve WLAN sensing measurements. [Ref-1] and [Ref-2].

## 2.2 Bands of operation

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

## 2.3 PHY

[TGbf 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].

[TGbf 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

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

## 2.5 Backward compatibility and coexistence

[TGbf 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

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

# References

[Ref-1] 802.11 SENS SG Proposed PAR, <https://mentor.ieee.org/802.11/dcn/19/11-19-2103-12-SENS-802-11-sens-sg-proposed-par.docx>

[Ref-2] SENS SG proposed CSD draft, <https://mentor.ieee.org/802.11/dcn/20/11-20-0042-06-SENS-sens-sg-proposed-csd-draft.docx>

[Ref-3] IEEE 802.11bf Selection Procedure, <https://mentor.ieee.org/802.11/dcn/20/11-20-1812-00-00bf-ieee-802-11bf-selection-procedure.docx>