

Sapphire Sounds
Software Requirements Specification
Version <1.0>

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1. Introduction

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) is to formally define the functional and non-functional requirements of the Sapphire Sounds system. This document provides a clear understanding of system behavior, stakeholder expectations, and boundary limitations. It serves as a reference for development, testing, and evaluation activities throughout the software engineering process.

1.2 Scope

Sapphire Sounds is a smart noise-monitoring solution designed to address noise disputes in shared living environments. The system utilizes a non-invasive noise sensor that measures sound intensity without recording audio, protecting tenant privacy. When noise levels exceed a defined threshold for a sustained period, time-stamped reports are generated to support fair dispute resolution. There are two user roles: tenants and property managers.

1.3 Definitions

dB (Decibel): A unit to measure the intensity of sounds.

Noise Event: An occurrence when decibel thresholds are reached for a specific duration.
Used for reporting.

Noise Sensor: A physical device that monitors sound levels without recording audio.

Report: A structured output generated by the system detailing a noise event.

Threshold: A predefined decibel level that, when exceeded, triggers a noise event.

Tenant: A resident or occupant using the system to monitor noise activity.

1.4 References

American Public Health Association. (2021, October 25). *Noise as a public health hazard*. <https://www.apha.org/policy-and-advocacy/public-health-policy-briefs/policy-database/2022/01/07/noise-as-a-public-health-hazard>

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Team Sapphire (2025, October 29). Lab 1 Version – Sapphire Sounds

1.5 Overview

This SRS document is organized into three main sections. Section 1, the Introduction, provides the purpose, scope, key definitions, and an overview of this document. Section 2, the Overall Description, outlines the general factors that affect the product and its requirements. Section 3, Specific Requirements, details the functional and non-functional requirements organized by feature.

2. Overall Description

2.1 Product Perspective

Sapphire Sounds integrates a compact noise-monitoring sensor with mobile and web applications. The device measures decibel levels and creates a timestamped noise event when thresholds are exceeded which is logged and used for disputes. The solution focuses on privacy by avoiding audio recording. From a stakeholder perspective, the product replaces subjective complaints with objective measurements, supporting conflict de-escalation in community living environments.

2.2 Product Functions

Sapphire Sounds includes several core functions focused on monitoring and managing noise disturbances. The system actively measures sound levels in decibels using a physical noise sensor and detects when volume exceeds a defined threshold for a sustained period. When this occurs, the system generates time-stamped noise event reports that can be reviewed by property managers. Tenants receive real-time mobile or web alerts that help them avoid contributing to ongoing disturbances. The application also maintains a historical log of noise activity and incorporates a rewards system that encourages tenants to maintain appropriate noise levels, promoting a more respectful living environment.

2.3 User Characteristics

Sapphire Sounds is designed for two primary classes of users: tenants and property managers. Tenants are able to view their personal noise activity, monitor trends over time, and receive notifications when sound levels become excessive. Property managers benefit from access to objective, time-stamped reports that assist in resolving disputes without relying solely on subjective complaints.

2.4 Constraints

N/A

2.5 Assumptions and Dependencies

N/A