**User’s**

**MANUAL**

***Smart Residential Welfare System***

**ASAP**

**JUNE 2025**

**Revision Sheet**

|  |  |  |
| --- | --- | --- |
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| Rev. 0 | 06/01/2025 | Initial work |
| Rev. 1 | 06/07/2025 | Table of contents revision |
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**USER'S MANUAL**

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**1.0 INTRODUCTION**

# INTRODUCtION

## 1.1 Package Contents

#### 1.1.1 Hardware

* Raspberry Pi with mic and light sensors
* USB Power Adapter
* Mounting kit

#### 1.1.2 Software

* Spring Boot backend server
* AWS SQS configuration
* CoolSMS API integration
* Web interface for admin/user

## 1.2 Specification

#### 1.2.1 Product Specification

* Real-time fire detection using sensors
* AI-based siren sound recognition
* HTTP-based fire data transmission
* SMS alerts using SQS & CoolSMS
* Admin tools: household, complaints, notices

#### 1.2.2 Requirement Specification

* Internet connection (Wi-Fi or LAN)
* AWS account with SQS/EC2 access
* CoolSMS API keys
* MySQL DB instance
* Java 17+ compatible Spring environment

**2.0 SYSTEM INSTALL GUIDE**

# SYSTEM Install Guide

## 2.1 System Summary

This system automatically detects fires in apartments and sends SMS alerts to residents. Admins manage households, complaints, and notices via a web portal.

## 2.2 System Configuration

* Raspberry Pi (client)
* Spring Boot Server (EC2)
* AWS SQS Queue
* MySQL DB
* CoolSMS API
* Web frontend

## 2.3 Install

1. Connect Raspberry Pi
2. Configure sensors
3. Deploy Spring Server on EC2
4. Link SQS to backend
5. Set up database schema
6. Register CoolSMS credentials
7. Launch web portal

**3.0 HOW TO USE**

# HOW TO USE

This section explains how to operate the Smart Residential Welfare System from both the user and administrator perspectives. It covers key features such as real-time fire detection, alert notification via SMS, and administrative functions for managing households, complaints, and announcements.

## 3.1 Fire Detection & Alert

* Sensor detects event and sends to server
* Server creates alert message
* Message sent to SQS
* Listener sends SMS via CoolSMS

## 3.2 Admin Functions

#### 3.2.1 Household Management

* View/edit residents by unit

#### 3.2.2 Complaint Management

* View/respond to complaints

#### 3.2.3 Announcement Management

* Post important notices
* Users can only view

## 3.3 User Functions

#### 3.3.1 View Announcements

* Read admin posts

#### 3.3.2 Submit Complaints

* Write and submit complaints

**4.0 NOTICE**

# NOTICE

This section outlines essential warnings, troubleshooting advice, and specific limitations to be aware of when using the Smart Residential Welfare System. It ensures safe and correct operation by highlighting important operational cautions, offering solutions to known issues, and clarifying system behavior in edge cases.

## 4.1 Caution

* Do not power off device during operation
* Avoid sensor obstruction
* Admin panel restricted

## 4.2 Solution

* Check network/SMS quota if alerts fail
* Restart listener if SQS delayed

## 4.3 Caveats and Exceptions

* SMS delivery may be delayed via vendor
* False alarms may occur if sensors are misaligned

**5.0 REFERENCE**

# REFERENCE

* AWS SQS Developer Guide
* Spring Boot Docs
* CoolSMS API Docs
* Raspberry Pi GPIO Pinout