Fire and Security Alarm Monitoring Simulation System

Software Requirements Specification

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Table of Contents

[Introduction 1](#_Toc367493988)

[**Purpose** 1](#_Toc367493989)

[**Scope** 1](#_Toc367493990)

[General Description 1](#_Toc367493991)

[**Product perspective** 1](#_Toc367493992)

[**Feasibility report** 1](#_Toc367493993)

[**User characteristics** 1](#_Toc367493994)

[**General constraints** 1](#_Toc367493995)

[**Assumptions and dependencies** 1](#_Toc367493996)

[User requirements definition 1](#_Toc367493997)

[**Functional requirements** 1](#_Toc367493998)

[**Non-functional requirements** 1](#_Toc367493999)

[System architecture 2](#_Toc367494000)

[**Main function description** 2](#_Toc367494001)

[**High-level overview** 2](#_Toc367494002)

[System requirements specification 2](#_Toc367494003)

[**System functions** 2](#_Toc367494004)

[**System interfaces** 2](#_Toc367494005)

[**User interfaces** 2](#_Toc367494006)

[**Hardware interfaces** 2](#_Toc367494007)

[**Software interfaces** 2](#_Toc367494008)

[**Communication interfaces** 3](#_Toc367494009)

[Glossary 3](#_Toc367494010)

[**Definitions** 3](#_Toc367494011)

[**Acronyms and abbreviations** 3](#_Toc367494012)

# Introduction

## **Purpose**

Text

## **Scope**

Text

# General Description

## **Product perspective**

<Describe the context and origin of the product being specified in this SRS. For example, state whether this product is a follow-on member of a product family, a replacement for certain existing systems, or a new, self-contained product. If the SRS defines a component of a larger system, relate the requirements of the larger system to the functionality of this software and identify interfaces between the two. A simple diagram that shows the major components of the overall system, subsystem interconnections, and external interfaces can be helpful.>

## **Feasibility report**

The feasibility study requires that you examine the requirements and your proposed design and determine the problems you might run into. Is it prohibitively expensive? Will it take 50 years? Is there hardware sufficient to operate this program? Are you searching for a O(n) sorting algorithm?

## **User characteristics**

The intended users for this product are fire and security systems engineers and analysts. Therefore, users are expected to be familiar with fire and security alarm system technologies and devices in addition to the fire and security protocols that regulate their use. Basic knowledge of using a desktop windowed environment is required, but users are neither expected nor required to be experienced with programming or computer technology.

## **General constraints**

Sensor and alarm devices should imitate real-life devices.

## **Assumptions and dependencies**

All alarms and sensors are guaranteed to work

People will behave in a reasonable and logical way

# User requirements definition

## **Functional requirements**

Text

## **Non-functional requirements**

Simulate system trigger and responses in real-time.

Portability – use of java makes project independent of architecture

Scalability – project should allow for later additions of sensor and alarm device types

Adaptability – software should be able to adapt to numerous building types, sizes, and layouts

Text

Performance requirements?

Safety requirements?

Security requirements?

Software quality attributes?

Business rules?

# System architecture

## **Main function description**

The main function of this project is to allow for the simulation of fire and security systems within a building.

## **High-level overview**

If the control area is unmanned and an alarm is activated, this alarm should not be ignored if it is potentially serious. Emergency services should be automatically called. Some but not all parts of the building may be equipped with sprinkler systems or systems to shut down electrical equipment. These should be activated if a fire alarm is confirmed. They should not be activated if there are people in the same room. The building may be equipped with direction indicators which illuminate the route to the nearest exit. These should be activated when a fire alarm is confirmed. At the same time, an audible signal should sound alerting occupiers to leave the building. A security alarm may cause some internal doors to be locked automatically. It should be possible to isolate complete zones by automatic door locking. False alarms are common and it might be normal practice to have an alarm confirmed before alerting emergency services. There are different ways of confirming an alarm. In the case of a fire alarm, it may be confirmed by multiple sensors detecting a problem.

# System requirements specification

## **System functions**

The software will be running on top of the Java virtual machine to make it cross-platform, therefore no system functions will be used.

## **System interfaces**

The system interfaces requires the use an executable jar file, initiated by the user. Which will run an installation on the computer assuming the java virtual machine is already installed into the operating system.

## **User interfaces**

Sample screen images? (too early)

GUI standards or product family style guides that are to be followed?

Screen layout constraints

Standard buttons and functions (eg. Help) that will appear on every screen

Keyboard shortcuts

Error message display standards

Software components for which a user interface is needed

## **Hardware interfaces**

The project will make use of standard keyboard and mouse devices to navigate the GUI interface.

## **Software interfaces**

The use of Java as the programming language leaves the project to be independent of the system architecture and operating system (so long as the system is able to support a Java virtual machine). Standard Java libraries will be used in addition to pathfinding libraries.

## **Communication interfaces**

This will be a desktop application, with no need to communicate with other users.

# Glossary

## **Definitions**

Text

## **Acronyms and abbreviations**

FSAMS – fire and security alarm monitoring simulation

FACP – fire alarm control panel