Software Requirements Specification

<RescueRobots>

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# Introduction

## Purpose

A system for rescue robot is to be realized that can recover persons or objects/properties in high-risk zones such as serious accidents, natural disasters, and explosions. The serving area can be on land with topographical difficulties and water.

## Project Scope

The rescue robot will perform pre-programmed motions to save people in danger. They will also act instantly detecting the situation around it. They will be operated remotely while their action zone will have high risks such as fire, nuclear explosions, radioactive areas, and many other natural disasters affected zones. The system will detect many physical factors like heat, light, sound, proximity, acceleration etc. to act accordingly. Beside this, they will instantly transmit the data using a server to the operator for manual handling the scenario.

# Overall View

## Product Perspective

This robotic system will follow latest motion and detection technologies but will be a follow up self-contained machine with specialized rescue task capability and design.

Diagram

Description automatically generated

## User Classes and Characteristics

Accidents and disasters are always prone to casualties. They can occur on any landscape, water, and air. The rescue task should be quick and efficient to save lives. This robotic system will make disaster response team more equipped with advanced technologies ensuring the safety of rescuers. Remote operation of a mobile device is the only way for this that satisfies the task. The rescue team in highways, waterways, the construction sites etc. will be the targeted users. Once the product is ready to use, a technical expertise team will be made to train and secure the user. Military rescue can also be expected user.

## Operating Environment

The software will be embedded into the hardware that will be task suited and well designed. A strong server will provide the connection for instant transmission of the data towards the operator. The system will be mobile on land via wheels performing the rescue task but the wheel system will be modified once they encounter the water surface. At the same time, the motion and floatation techniques, called aquaplaning will be activated to go further rescue

## Design and Implementation Constraints

## Assumptions and Dependencies