Final Project Proposal

Name: Rescue Robots Evacuation Simulation.

Problem Statement:

Many people die every year due to fires in the buildings. The team of fire fighters find it very difficult to carry out the rescue operation either because of the severity of the fire or because large number of people trapped in the fire. People in such extreme conditions are difficult to save. Even fire fighters get injured in such fires.

Proposed Solution:

This project aims to simulate the evacuation process by 30-50 rescue robots in case of fire. All the robots work independently to achieve the global solution of evacuating the trapped people from the fire. Each robot starts from the base camp outside the hostile environment and is provided with the map of the entire area. It then decides the nearest person to rescue. Due to the large number of robots the evacuation process is sped up.

Global Solution:

Retrieving all the people trapped in fire.

Local Solution:

Retrieving the target safely and as fast as possible.

Implementation:

1. A map of all the people trapped in fire is provided.
2. Robots calculate the nearest person to rescue.
3. Robots also calculate the shortest path to the person marked as target.
4. After the target is marked the changes are made in the map.
5. The robot then retrieves the person and marks them as safe.
6. The person is also marked safe in the map.
7. Start the evacuation process again till the global objective is reached.