

**AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)**

**Faculty of Science and Information Technology**

**Department of Computer Science**

**Undergraduate Program**

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**Security Alarm**

**A  Software Requirements Specification document submitted**

**By:**

**GROUP- 03**

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**Introduction**

The purpose of this document describes the statement of work (SOW) for developing an automated system for earthquake rescue team to identify the possible position of victim human body from the wreckage of destroyed building. This particular documented (SOW) is intended for the further development of a fully functional earthquake rescue information system. This document also provides the vendors with the relevant t technical, performance, application, and architectural requirements of the system along with its deliverables. This also contains a brief analysis costing of the project, the possible risk that might the developers face

During the development period and its ultimate quality goals.

**Problem Background**

The number of earthquakes taking place have significantly increased in recent times. Many lives are lost due to the aftermath of this calamitous natural disaster. Most of the lives lost are due to getting trapped under the debris caused by destroyed buildings. A lot more lives are lost due to the lack of knowledge of where the victims might be within all the debris. Since rescuers usually do not know where victims are stuck they stay trapped and eventually die. This is a serious matter at hand as human lives are directly involved and through this project we can help bring improvements into the whole rescuing system and eventually may help save a few extra lives.

**Solution for the problem**

This software will help determine an estimated location of the trapped victims with the help of infrared scanners, 3d scanners and a database to store all the information collected from the sensors.

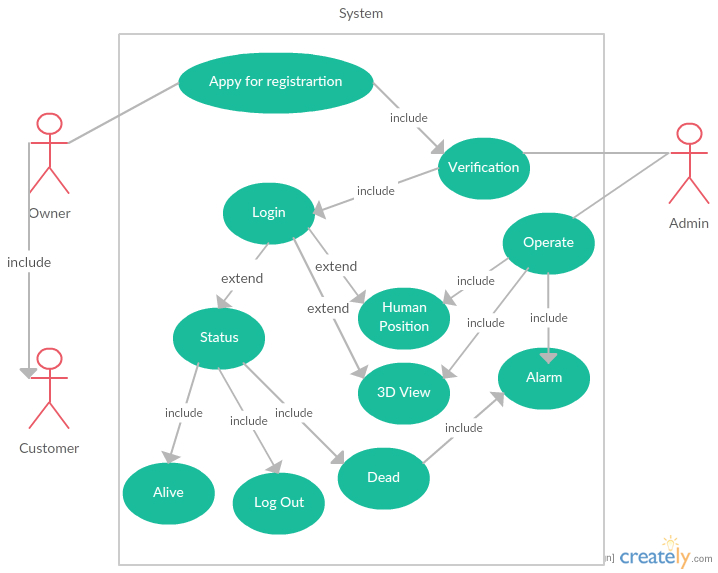
The 3-D scanner will take a 3D view of the entire building and store it in the database. There will be 5 Infrared scanners, 4 on each corner and 1 on the rooftop which will detect the position of anything that is emitting heat along with movement from within the building. Deriving from the shape of the thermal body and the fact that it is moving around we can determine if it’s coming from a human or not. The database will be updated in an interval of 10-15 minutes which would show us the positions of the thermal emitting bodies within the building after being merged with the 3D view of the building collected from the 3D scanners. If and when the building collapses due to an earthquake, the rescue team or the fire brigade can access the database from a central station (there will be one for each area) and collect the latest updated data of the particular building and can find out where the victims were last located within the building before the building had collapsed. Using these information an estimated location of the victims can be determined and the rescuers will set high priority on these locations.

**Why this solution is important?**

Firstly no such software has been developed previously for such purpose therefore making this particular project the first of its kind. As there are no such similar projects to compare to currently this project is acting as the basic and most feasible solution to this problem. However new and improved projects with higher feasibility and efficiency maybe developed in the future. Whatever the statistical data regarding this project it will be recorded as the most basic data and so the cost requirement for this particular software is considered to be minimum. Taking this into consideration the software has high feasibility to meet the business objective.

**User Stories**

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| --- | --- |
| **Use-case** | **Corresponding user scenario** |
| Registration | As a new user, to login into the software, i must first register with proper verification and once authorized I may log into the system. |
| Log in | As an already existing user, after registering with proper information and verification i can log in to gain access to a few features. |
| Access 3D view | As a user, i can check the 3D view of my homes collected from the 3D scanners, but only in case of emergencies. (I cannot make any changes to the view, admin privilege only) |
| Access Infrared View | As a user, I can also access the Infra-red view and check where everyone within the building is present via thermal detection only in case of emergency. |
| Sound Alarm (Emergency only) | As a user I can logout of my account only in case of major emergencies, otherwise logging out is strictly forbidden because logging out could mean that something has gone wrong in my residence, which will sound an alarm to the admins. |
| Access Database | As a user, I cannot access the database except only in case of emergency in which case I can access the information with in the database related to me or my family.  As an admin, I can access and edit the database but only when permission is granted by the government. |
| All | As an admin i will have a unique identifier assigned to me by the government. I can access and edit any feature within the software e.g: edit 3D view, edit Infrared view, add/delete user and user registration verification. However I need to be granted these permission by the government itself. |

**Use Case Diagram**