



# **DETERMINATION USING GPS WITH ENHANCE SECURITY LOCATION MEASURES**

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*Abstract: The ability to track and check the location of people or equipment in real time has a number of application areas such as child safety, prisoner tracking and supply chain to name but a few. Wi-Fi location determination is a technology that has been developed in recent years, that utilizes existing Wi-Fi equipment such as those installed in personal computers, personal data assistant's (PDA) and mobile phones. The technology uses modulated Wi-Fi transmission signals to detect the presence of a device, which does not necessarily have to be connected to the network in question, just visible to it, the system is then able to determine the position of the device based on the signals received from the various Access Points (AP).*

*Keywords: GPS, Security, Location, Google Tracker*

## **1. INTRODUCTION**

Ultra-quick, single click SOS when you're in danger. Gets your location and sends the Longitude and latitude to any 5 contact no. When you're at risk, every micro second counts. We go all out to get your location by all means possible and contact your buddy with total certainty by SMS. Works indoors too. In this report an android application is presented which will be helpful for users of android to share SMS without intercept. SoS application is a Google- Map based online emergency application useful to find the specified emergency stations like, Police, Fire stations, Cab service number and hospitals, likely to be found in a given circular area. This application will be useful as emergency situation handler. The user will only have to provide a radius of area to be searched. With the help of this application, User will also be able view a geographical map of the area make calls, send message (if possible) to a selected emergency station. This application will also help user to send 5 sms to the numbers registered by him in the application, at the time of emergency.

## 2. LITERATURE SURVEY

SOS Emergency is the first and only SOS Android phone application that can save lives. Should you find yourself in a real emergency situation the SOS Emergency application can be triggered to send an emergency message to the respective emergency numbers and can therefore save valuable time in the rescue efforts.

SOS Emergency is currently operational in 57 countries worldwide and its user interface is accessible in English languages

In an emergency, you must not:

1. Key in an emergency number
2. Type in any text

The entire process is controlled automatically. The only thing you need to do is to trigger the process. The use of SOS Emergency is quite simple. Follow the instructions below step by step for installation on your Phone. This has to be done only once for the first installation. Installed the SOS Emergency application onto your android mobile. Start the application. To authenticate your mobile phone number you will receive an SMS. Now SOS Emergency is prepared for a possible emergency and is operational. User can first of all save the 5 contact numbers. Next time when user click on emergency SMS. Then automatically application finds the longitude and latitude and sends the SMS on save mobile numbers.

## 3. PROBLEM STATEMENT

When two entities are communicating with each other and they do not want a third party to comprehend or intercept their communication, so that they are able to pass on their message. A way to achieve this is to encrypt the message in such a way that any man-in-the-middle would not understand it. Thus achieving a peer to peer communication channel is the main objective of our project.

Mobile Devices are used extensively, all over the world. Transforming the most common way of communication into one that is secure and can guarantee the authenticity, integrity and secrecy of the information shared is the need of the hour. A secure communication medium is essential in case of confidential talks. As now days the phone call taping, and other intrusions are becoming very common, so the proposed application targets on making mobile communication free of such attacks or interception.

We propose to build an application for the Android OS that enables the user to communicate without the fear of compromising the secrecy of the information shared, via text messaging. The application would first encrypt the messages to be sent, using the encryption key which would only be known to the receiving application. Efforts have been made to make the application user friendly and robust in handling unexpected inputs or states.

Feasibility is the determination of whether or not a project is worth doing. The process followed in making this determination is called a feasibility study. This type of study determines if a project can and should be taken. Since the feasibility study may lead to the commitment of large resources, it becomes necessary that it should be conducted competently and that no fundamental errors of judgment are made. Depending on the results of the initial investigation, the survey is expanded to a more detailed feasibility study. Feasibility study is a test of system proposal according to its workability, impact on the organization, ability to meet user needs, and effective use of resources. The objective of the feasibility study is not to solve the problem but to acquire a sense of its scope. During the study, the problem definition is crystallized and aspects of the problem to be included in the system are determined. Consequently, costs and benefits are described with greater accuracy at this stage.

Statement of the problem a carefully worded statement of the problem that led to analysis. Summary of finding and recommendations A list of the major findings and recommendations of the study. It is ideal for the

user who requires quick access to the results of the analysis of the system under study. Conclusion are stated , followed by a list of the recommendation and a justification for them .

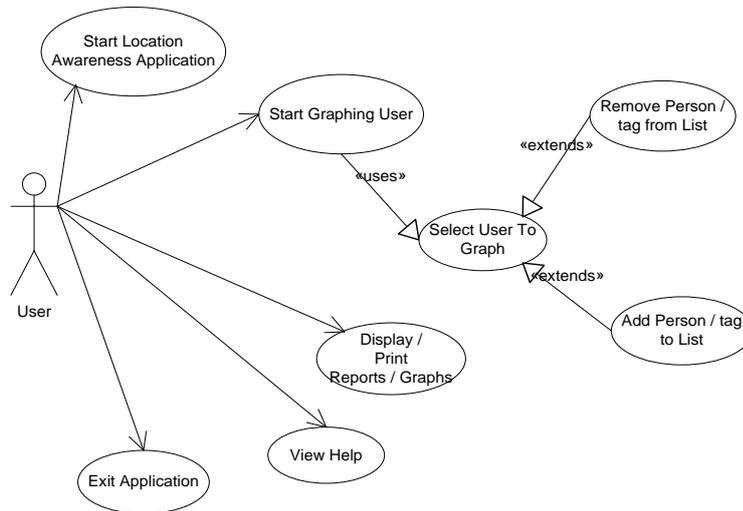
#### 4. PROPOSED SOLUTION

The Custom made application which will be developed in this project will utilise the Application Programming Interface (API) to communicate with the TRACKER 4.2V and the database within the unit to obtain the appropriate information on each of the tags or Wi-Fi devices that the TRACKER 4.2V had detected and monitored on the WLAN network. Each individual person or piece of equipment that is to be tracked needs to have a Wi-Fi device, otherwise they, need to be given a Wi-Fi tag. The TRACKER 4.2V System calculates the position of the Wi-Fi tag using the fingerprints that it has stored and records the position or locale and the details of the access point that has detected the tag in the TRACKER 4.2V database. Figures 26 and 27 give an overview of the system architecture and system concept.

#### Stages of the System

This section will show the use case diagrams showing different user activities and the system functionality.

#### User Use Case Diagram



#### User Use-Case Diagram Descriptions

Use Case Name	Start Location awareness Application
Primary Actor	User
Data	None
Description	The user starts the application.
Preconditions	None
Post Conditions	The application loads.

Use Case Name	Select tag to track
Primary Actor	User
Data	None
Description	The user selects the tag to review in the system
Preconditions	The TRACKER 4.2V equipment is switched on.
Post Conditions	The Google System starts tracking the Wi-Fi.

Use Case Name	Display reports
Primary Actor	User
Data	Location history records

System Use Case Diagram

Class Diagram shows the classes, their properties and associations used in the application.

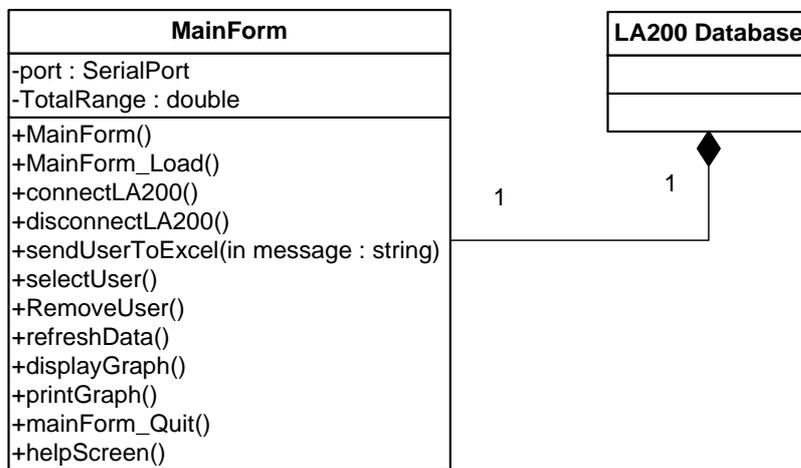
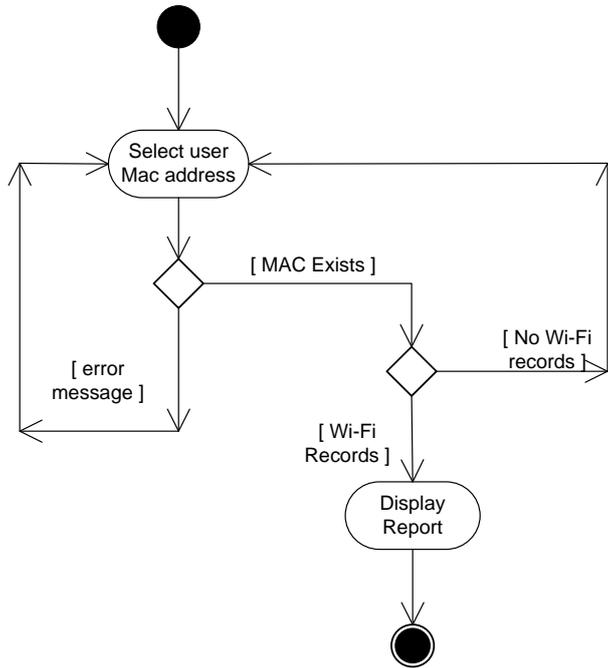


Fig. Class Diagram

Activity Diagram

Showing and activity diagram to show the process of selecting the user MAC address to display.



Display report for selected user

Sequence Diagram is a high level sequence diagram showing the messaging between different components in the system.

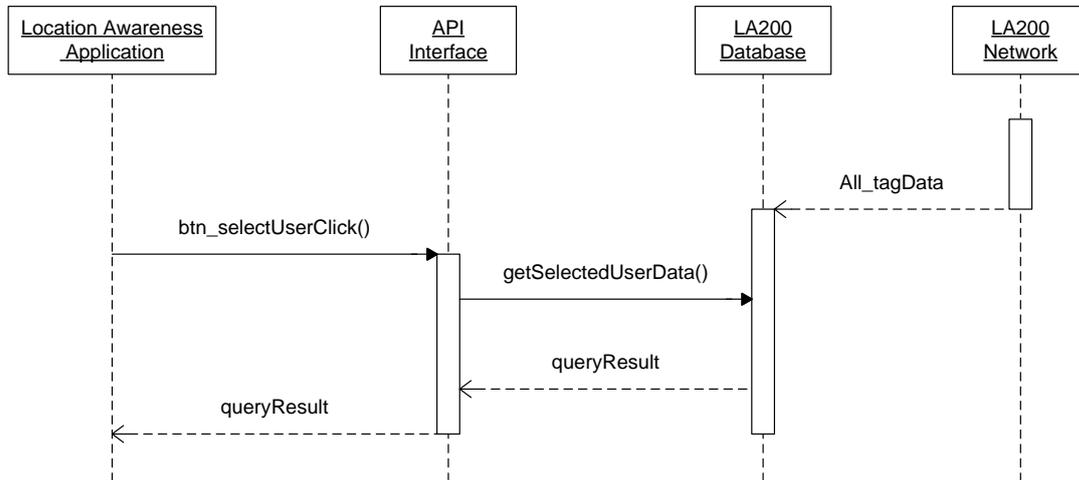


Fig .High-Level Sequence Diagram for the system

5. CONCLUSION AND FUTURE WORK

While a number of the more familiar location determination technologies have limitations when it comes to working inside buildings, at a small area level of resolution, fairly high accuracy rate without the need for substantial capital investment the recent advancements with the Google TRACKER 4.2V WLAN location awareness system have allowed Wi-Fi technology to provide accurate live and historical positional information.

This project aimed to investigate the use of the TRACKER 4.2V to provide information for an application for use by Lean Practitioners or Six Sigma Black Belts to monitor the movements of people, equipment, products or inventory in an area that was covered by a WLAN and produce reports and graphs for them to use.

Initial requirements set out during analysis phase called for a GUI program, created with Visual Studio 2005 that would interface with the TRACKER 4.2V database and API and provide location data for the user's selected MAC address. The specifics of the programs were defined in the design section, these included diagrams showing the functionality of components, along with software, hardware and HCI requirements. The design information was then taken implemented into an application created to meet these requirements.

The future of the Project looks more promising.

SoS application is a Google- Map based online emergency application useful to find the specified emergency stations like, Police, Fire stations, Cab service number and hospitals, likely to be found in a given circular area. This application will be useful as All-in-One emergency situation handler. The data fed into the application will be used to search for the SOS handler department, along with the information about them. With the help of this application, User will also be able view a geographical map of the area make calls, send message (if possible) to a selected emergency station. This application will also help user to send 5 SMS to the numbers registered by him in the application, at the time of emergency. A mini help doctor will also be included in this application so that the user can get a first aid and medical cure prescription for common diseases.

In future, we can add the longitude and latitude database of location for the user. We can also have one more module of implementing this project on android application.

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