



# AN EMERGENCY ALARMING SYSTEM USING ASSISTED GLOBAL POSITIONING SYSTEM

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**Abstract--** Our aim is to develop an efficient and improved geographical asset tracking System and conserve valuable mobile resources by dynamically adapting the tracking scheme by means of route learning techniques. By this Integrated Google Maps, the User can also check for nearby Doctor is one touch emergency calls Ambulance - which will locate the user through GPS for any Emergency Medical Condition with the help Integrated Google Maps. It's a simple application that helps you to track your own locations and send the details to driver through server. This application works with GPS (Global Positioning System) where with the help of GIS (Global Information System) it fetches the nearby doctor's exact location and also nearby hospitals. The time interval is given to record the location and save it to the database and Ambulance Driver will get the notification. This application won't upload any of your personal information. It will store the locations in your device only. View your complete locator points on Map from source to destination. Current location will be shared in one click.

Location Based Services and Geographical Information current information services such as those on the web and as mobile apps the GIS is used widely and benefited from developments in various fields of computing. Better database software allows the maintenance of vast amounts of information that is referenced to digital maps. The main motivation of this application is to get intimation about the ambulance. This android app has two application one for the user to access another one is for the driver to fetch location from user. In User application current location of the user will be listed, and that location will be send to the server, server will push the location to driver application. In which driver can retrieve the details of the user location. In this application we design and implement a high-accuracy global positioning solution based on GPS which provides the path for user and Driver.

**Keywords:** GPS, GIS, LBS, integrated Google map, Android application

## I. INTRODUCTION

Location Based Services (LBS) and Geographical Information System (GIS) together have enabled a new era of the development of a mobile based applications for various commercial and military applications. Nowadays, smart phones can also capable of finding user mobility but it can track only upto local and inconsistent coordinates. Unlike the current information services such as those on the web and as mobile apps, the GIS has benefited greatly from developments in various fields of computing. Better database software allows the management of vast amounts of information that is referred to digital maps. Computer graphics techniques provide the data models for storage, retrieval and geographic objects. Geographic Information Science, the field of science behind GIS, offers specialized knowledge about spatial data collection and processing. The GSM/GPRS is one of

the best and cheapest modes of communication present these days and in future, the satellite based service which is available 24X7 everywhere in the whole world. GPS system can be used to get location which includes latitude, longitude and altitude values along with the timestamp details etc. It is a free of cost service available to every individual.

## II. OBJECTIVE

Ambulance driver system is really very helpful in emergency cases. This system acts dually, one for the users to contact quickly in any emergency situation through mobile phones and other side for the ambulance driver to easily navigate the location of the user. On the phone itself the installation of this system application are made which is supposed to perform many operations needed. So by using this system, the nearest ambulance driver and the nearest hospital can be contacted. To track the current



location and view both source and destination location we develop this system.

### III. RELATED WORK

In Intelligent Accident-Detection and Ambulance-Rescue system [1]. GPS and GSM concerned in the vehicle will send the location of the accident to server of the nearest hospital.

In Automatic ambulance rescue system [2]. The loss of life due to the accident because of the route of the ambulance to reach the hospital and also controls traffic lights

In Smart phone based enhancement in health services using GPS [3]. Delay in reaching of the ambulance and detect accident automatically and notification to the nearby emergency contact along with the personal details

In Emergency management system using android application. [4] In this paper, the person in an emergency at the emergency site will call the EMS at avail service. [5] discussed about Positioning Of a Vehicle in a Combined Indoor-Outdoor Scenario, The development in technology has given us all sophistications but equal amounts of threats too. This has brought us an urge to bring a complete security system that monitors an object continuously. Consider a situation where a cargo vehicle carrying valuable material is moving in an area using GPS (an outdoor sensor) we can monitor it but the actual problem arises when its movement involves both indoor (within the industry) and outdoor because GPS has its limitations in indoor environment.

Our aim is to develop an efficient and improved geographical asset tracking System and conserve valuable mobile resources by dynamically adapting the tracking scheme by means of route learning techniques. By this Integrated Google Maps, the User can also check for nearby Doctor is one touch emergency calls Ambulance - which will locate the user through GPS for any Emergency Medical Condition with the help Integrated Google Maps.

### IV. FRAMEWORK

In this section we introduce our technological background, system model and the algorithms used.

#### A. Existing System

We have to intimate ambulance, need to give the details of desired location. The exact location cannot be viewed by the driver; also users are unable to view where the driver is. We cannot able to search the nearest hospitals as well as nearest Doctor's though we have many websites portal, and the user can get information about the searched location in web sites.

#### Disadvantage

In this existing system user cannot view the ambulance details. User can't be able to fetch the nearest hospitals address. They can't able to fetch the nearest doctors. Existing system can't able to get the accurate place. The valuable detail does not reach people at the time of emergencies. The user can update the location manually it will be stored in the server. It is having only for the high level data which are stored in the server. The data (locations) will not be added to the server manually. It may give less accurate location as it takes one shot location wherever needed.

#### B. Proposed System

The user cannot view the ambulance details. We can't able to fetch the hospitals address. We can't able to fetch the nearest doctors. We can't able to get the accurate location. The valuable detail does not reach people at the time of emergencies. The user can update the location manually it will be store in the server. In existing system user can be able to access the details which is stored in the server.

#### Advantages

Through this application user can able to get the details of ambulance driver. With the help of GIS nearest hospitals and doctors details are obtained easily. With help of maps we can able to view where the driver's exact location. In existing system, it contains only the low level data but it contains the deep level data because those data are collected from globally. Satellite information can be incorporated easily. Accurate positional information is the best way of storing discrete thematic features. Increase communication, productivity & collaboration. This application is just one touch accessing for both user and ambulance driver.



### C. Modules

Software is divided into separately named and addressable components called modules that are integrated to satisfy problem requirements

They are divided into five different modules.

1. Send Location to Server.
2. GIS based nearest search.
3. Retrieve Location from Deployment server.
4. Navigation from source to destination.
5. Report and Status Generation

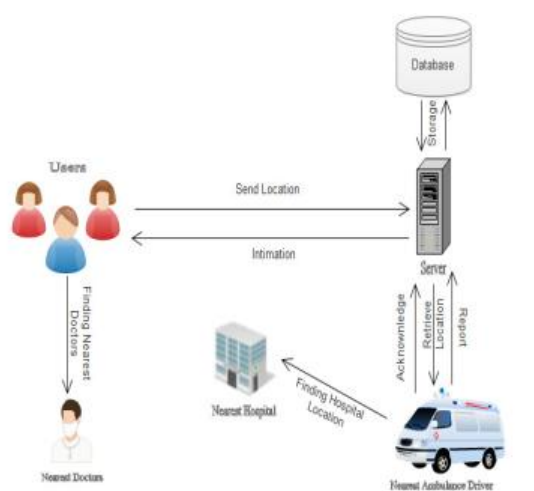


Figure1: Block diagram of proposed system

#### Send Location to Server:

In this module, user can send the location to the deployment server with the help of GPS (Global Positioning System). The GPS uses the location service through which the exact position gets bind up, and then it passes to server. This module is the basic module for the entire system. Here the user will send their location by themselves by its latitude and longitude values which will be store in the server.

#### GIS based nearest search:

The Geographical Information System (GIS) is responsible for fetching the nearest hospitals and as well as doctors. The GIS uses k-nearest algorithm with the help of Google places API it finds the nearest hospitals. GIS is a system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data. The algorithm is designed in such a way that it easily fetches the nearest doctors, hospitals. For finding the

nearest doctor and hospitals we mainly use of Integrated Google map and Fixed interval and Radius algorithm.

#### Retrieve Location from Deployment server

In this user send their location to the server with the AGPS (Assisted Global positioning System). Server will verify the received latitude, longitude value, and then the values are passed to the driver's application. Driver's application gets the location from the deployment server and the location of the user is viewed in map. Once the GPS estimates the desired location of drivers from the deployment server, details of the drivers is passed to server. So, the server here act as a central component for storing information from both user and driver side.

#### Navigation from source to destination:

Once the location is retrieved from the deployment server, a path is drawn from source to destination. A polyline Google maps is drawn from the user location (source) to the driver's exact location (destination). The Application Programming Interface (API) automatically handles access to Google maps servers, map display on the map. A marker will be shown on to the Integrated Google map, which makes the easy for user and driver to get accurate location in the path. With the help map, drivers can look specific buildings and services onto the map such as local nearby hospitals and doctors which reduces the work load.

#### Report and Status Generation:

In this module, the reports are generated. The content, user description all details are thrown to the server for further process. Once the server gets the location of the user, it sends the value within desired location to driver's application. If the driver gets the users location, the driver's details are passed to the server. Easily retrieve the particular data into database. Also, from the server report from driver is sent to the user. After delivery of the report the acknowledgement from the server is sent to the driver.





## V. ALGORITHM

### Fixed Interval Algorithm:

The fixed interval algorithm is derived from a GPS functionality that is commonly used. As the name indicates, the algorithm sends specific data to the database server after every fixed interval of time, i.e., it uses one variable to keep track of the time change in the mobile asset and relates it with frequency. It knows at what time the last point was reported and when the next point will be sent.

### Radius Algorithm

The radius algorithm is mainly related with the distance between the tracked points, it deals with points that are within a specified radius from the device. It keeps track of the last location data reported to the database server and the distance between the last and the current location. Only if the value of the calculated distance is more than a certain predefined distance, the device sends the current point to the server. Along with the radius variable it also involves the fixed time interval, using which it checks the frequency to send the data.

## VI. SUMMARY

This paper has presented an advanced approach of GPS, where the request and response communication between two users occurs by a technique called Glocal. Here the geographical information system, which is associated with the Glocal helps the user to navigate the location accurately. Also, it enables us to identify the source and destination location while in present, only the current location identification is done. Moreover, GPS is supported by wide area augmentation which improves the accuracy of location prediction and navigation. This accuracy is improved by using the user trajectories and co-uniting the GPS with dead reckoning technique. Thus, this system is more useful in removing the difficulties of all other schemes of location prediction and provides accuracy to a standard level.

## VII. FUTURE ENHANCEMENT

As how we integrate Google maps with GIS to navigate the exact location, Future enhancement can be in a way of using Google street maps which is an upcoming process in the current trend. Google street map has a broader satellite view and markers at every area, so that we can see the attributes of an area by choosing the marker. This marker shows the view in poly line Google map which comes under computer graphics concepts. This ongoing work can assist accurate navigation prediction in unmanned aircraft and shipping process.

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