International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395 -0056
Volume: 03 Issue: 04 | Apr-2016 www.irjet.net p-ISSN: 2395-0072

DISASTER ALERT AND NOTIFICATION SYSTEM VIA ANDROID MOBILE PHONE BY USING GOOGLE MAP

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Abstract:. *Natural Disasters have threatened mankind since history started. Due to geographic location and environment change, there are many vulnerable countries to natural disasters. The countries also lack effective disaster preparedness system to confront natural disasters. In addition, a tourist may face difficulties in finding safe area or shelter place prior to the occurrence of natural disasters. For this reason, we have proposed a disaster management system and evacuation system for people using Google Map (GM). The system is implemented on android mobile phone because of the burgeoning growth of smart phones in world. Android device with our application installed on it and user. User can register the multiple receiver or family member or friends to send SMS at a time to send notification for help. By sending the current position obtained by GPS and including shortest path of shelter or safe zone on the map of the application.*

Key Words: Android, GPS, SMS ,Shortest path, Disasters

I.INTRODUCTION

According to a survey held on recent times by Mr.Hillebrand and Mr.Trosby in "SMS the Creation of Personal Global Text Messaging",a book, Short Message service(SMS) Is the widely used application all over the world used by around 2.4 billion users. That can seriously help Humankind in serious issues and even developed countries also lack in taking control measures on natural disasters & on informing emergency situations to beloved ones is quite hard during these situations and also on situations like Accidents & Health conditions. On behalf we proposed a new application for android phones to common peoples which is used to send their current location, Address and Emergency situation. Even Blind peoples can get use of this Application ,on addition of Voice call into it. This application is also used as an SOS Application to send their current location to the Numbers that are already kept b the user as ICE Number. Prevention is Better than Cure. This Android Application also Sends the latitude and longitude of users current location to the Registered Number. A developing country like Bangladesh also lack in effective measures for emergency situations which is one of the disaster prone countries listed. Tourists can also suffer during these situations on finding shelter.

2.SYSTEM ANALYSIS AND STUDY

2.1SYSTEM STRUCTURE AND WORKING PRINCIPLE

Application Portfolio is basically a Mapping System to Intimate their location to their loved One.It consist of two basic Modes.

1.SMS(Short Messaging Service)

2.Voice Call(Focuses on blind)

Rappid mapping and Risk & Recovery mapping are the two common Modes. In case of Emergency, the message is

delivered within a Minute as tested in Rapid Mapping Module.

2.2 ACCESS

A wide range of applications requires information on settlements of humans basically on Emergency Response, Disaster Risk Reduction ,Population estimation. The analysis on Intimating emergency conditions on mapping them when they are in emergency situations. The Access of the Application is to receive the SMS or Voice call to the Registered Users. Responsible on co-ordination among the users who are registered to ensure the users Condition.

2.3 ACTIVATION AND INTERATION WITH USERS

Mapping the user may activate b the completion of Relevant Service Request Form(SRF).There are two types of service request forms. They are, Rapid Mapping and SMS or Voice Call systems. The scope includes emergency situations and humanitarian crisis related to Natural and Artificial Emergency Situations. The Service Provider Generates the Users location on Mapping with their current Location Address and also the Latitudes and Longitudes. It sends as SMS or Voice Call to the registered Contacts by the User.

1. Availability of Network
2. Messaging Availability to Archive data

2.4 EXISTING SYSTEM:

Short Message Service (SMS) is used to collect the upcoming flood warning and send back to all citizens from the server. But lots of SMS transfer can cause the network congestion which may lead to breaking of the voice call communication through the same network. This can make the evacuation process difficult. To avoid such, Cell Broadcasting Service is used to directly send messages to the users in a specific area with no network congestion. Still it fails to help in evacuation process which provides information about safe place. GSM alarm device for early disaster warning is proposed to place it in the local police station or fire brigade station, which takes warning from weather office and make three different types of warning. Then evacuation process is controlled by the police station or fire brigade station. Though it can avoid network congestion, the GSM alarm is not a faster way for evacuation process. For delivery of warnings researchers also proposed Area Mail disaster information service provided by NTT Do Como for tsunami alert and evacuation system with a view to support fishery workers. It is possible with area mail service to inform persons in limited area about damage due to disaster. With the help of mobile application centre monitoring authority will observe evacuation progress of the fishing boats. Though this service is a quicker and efficient one, it will not work as fast in overall population. Well developed countries like Australia and South Korea are planning to use satellite communication for disaster management when the failure of mobile network occurs. Satellite communication services will be more fast, reliable, robust and secure but initialization and maintenance of this service maintenance are expensive and developing countries cannot afford this. Very few researchers worked to provide location based services for disaster management on mobile phones.

3.1 Disadvantages

- It will not work as fast in overall population.
- Very few researchers worked to provide location based services for disaster management on mobile phone

4.PROPOSED SYSTEM:

Disaster Management Server (DMS) is a third party server which stores disaster prone areas and the details about the users in its database. GPS provider, mobile phone catches the current location of its user and sends it to server. Using current position of user our system will determine whether the user is in probable disaster exposed area or not. Proposed system will get early upcoming disaster warnings with the help of both audio and visual message with shortest path of the safe place.

4.1Proposed System Advantages:

The User Can Say what their current emergency Situation. *Quick Accessing of SMS* is The rescue authority notices the

unreached user and sends a rescue team to rescue him.Application for rescue and relief operation with better server side application to totally automate the system of detecting disaster prone area.Our application gets the current position through GSM from the user mobile phone and application communicates with DMS to send the latitude and longitude of user's current position.

5. LITERATURE SURVEY

5.1 A Taxonomy of Indoor and Outdoor Positioning Techniques for Mobile Location Services

Wireless positioning determination has received increased attention during the past few years. Several wireless applications have been envisaged when mobile terminal location can be determined with sufficient accuracy at any time. In this paper, we attempt to identify the various indoor and outdoor positioning techniques that can be used for the provision of mobile and wireless applications and services. In order to maximize the benefits of this research in the area of positioning technologies, we propose a novel taxonomy with detailed analysis and evaluation of these techniques based on the accuracy that is needed for various mobile location-based services.

5.2.Inferring Social Network Structure using Mobile Phone Data

We analyze 330,000 hours of continuous behavioral data logged by the mobile phones of 94 subjects, and compare these observations with selfreport relational data. The information from these two data sources is overlapping but distinct, and the accuracy of self-report data is considerably affected by such factors as the recency and salience of particular interactions. We present a new method for precise measurements of large-scale human behavior based on contextualized proximity and communication data alone, and identify characteristic behavioral signatures of relationships that allowed us to accurately predict 95% of the reciprocated friendships in the study. Using these behavioral signatures we can predict, in turn, individual-level outcomes such as job satisfaction.

5.3 Performance evaluation of a TOA-based trilateration method to locate terminals in WLAN

Nowadays, several systems are available for outdoor localization, such as GPS, assisted GPS and other systems working on cellular networks. However, there is no proper location system for indoor scenarios. Research into designing location systems for 802.11 networks is being carried out, so locating mobile devices on global networks (GSM/cellular + GPS + WLAN) finally seems feasible. The technique presented in this paper uses existing wireless LAN infrastructure with minor changes to provide an accurate estimation of the location of mobile devices in indoor environments. This technique is based on round-trip time (RTT) measurements, which are used to estimate distances between the device to be located and WLAN
access points. Each RTT measurement estimates the time elapsed between the RTS (Request-to-Send) and the CTS (Clear-to-Send) frame of the 802.11 standard. By applying trilateration algorithms, an accurate estimation of the mobile position is calculated.

5.4 Social Serendipity: Mobilizing Social Software

Mobile phones have been adopted faster than any technology in human history and are now available to the majority of people on Earth who earn more than US$5 a day. More than 600 million phones were sold in 2004, many times more than the number of personal computers sold that year.1 This new infrastructure of phones is ripe for novel applications, especially given continual increases in their processing power. Many mobile devices also incorporate low power wireless connectivity protocols, such as Bluetooth, that can be used to identify an individual to other people nearby. We have developed an architecture that leverages this functionality in mobile phones originally designed for communication at a distance to connect people across the room. Serendipity is an application of the architecture. It combines the existing communications infrastructure with online introduction systems' functionality to facilitate interactions between physically proximate people through a centralized server.

5.5 Accurate GSM Indoor Localization

Accurate indoor localization has long been an objective of the ubiquitous computing research community, and numerous indoor localization solutions based on 802.11, Bluetooth, ultrasound and infrared technologies have been proposed. This paper presents the first accurate GSM indoor localization system that achieves median accuracy of 5 meters in large multi-floor buildings. The key idea that makes accurate GSM-based indoor localization possible is the use of *wide* signal-strength

fingerprints. In addition to the 6-strongest cells traditionally used in the GSM standard, the wide fingerprint includes readings from additional cells that are strong enough to be detected, but too weak to be used for efficient communication. Experiments conducted on three multifloor buildings show that our system achieves accuracy comparable to an 802.11-based implementation, and can accurately differentiate between floors in both wooden and steel-reinforced concrete structures.

6.MODULE DESCRIPTION

6.1PROXIMITY ESTIMATION:

To provide accurate proximity estimation for face-to-face communication. This raises a question: what is the face-to-face communication distance? In this subsection, we first define the face-to-face distance and then use the indoor results to do estimation. Since the error rate turns out to relatively high, we explore the possible reasons.

6.2DISTANCE OF FACE-TO-FACE COMMUNICATION:

When we have dinner with our friends sitting at the same table, the conversion among us is called face-to-face communication; or when we talk with someone side by side, the distance between us is also called face-to-face communication. People typically have such communication when they are sitting or walking together. Thus, we calculate the distance for this kind of communication by measuring distances across the campus and the average value is equal to 1.52m.

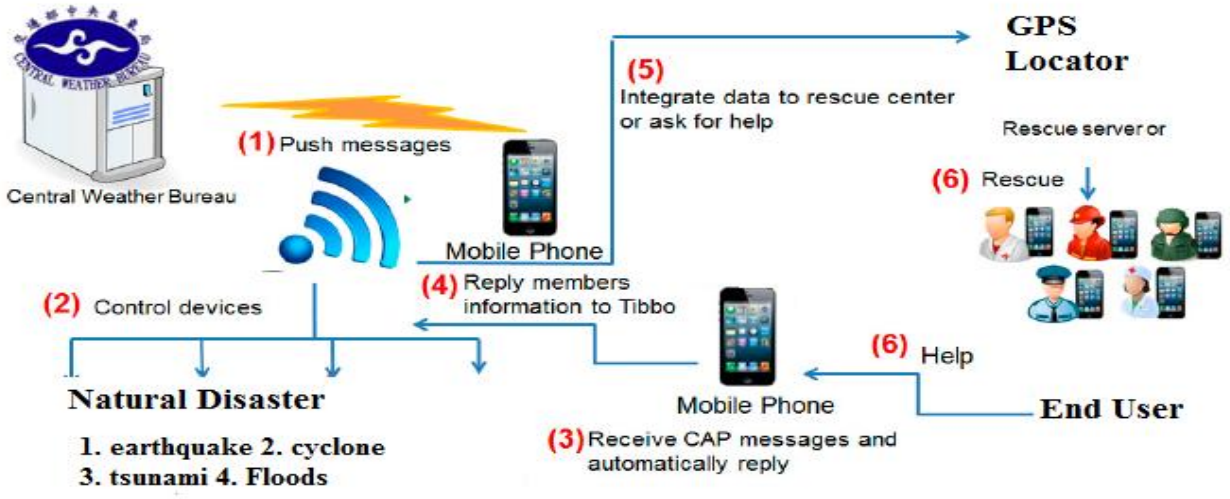
6.3BASE ASSESSMENT:

To conduct an initial evaluation of the raw accuracy of Bluetooth, we constructed a scenario that draws upon several likely occurrences in normal campus interactions. The scenario blends each of the earlier test cases and provides a ground truth to assess the accuracy in a real-world setting.

6.4ACCURACY IMPROVEMENT:

When phones are inside the building, the light sensor return values between 225 to 1280; while this value comes up to larger than 1280 when phones are under daylight. When the phones are in the backpack or anything of shelter, the light values are always under 10. Thus, we use the light sensor to improve the accuracy of distance estimation.

7.SYSTEM ARCHITECTURE:



8.CONCLUSION:

Our disaster management system is an android mobile phone application employing Google Map (GM), Our application provides evacuation help on the map of the application to user if the device user is in probable disaster affected area considering the user's current location. This helps people to go to the safe area or shelter place prior to the disaster. Our application also facilitates the work of authority to track his evacuation progress ceaselessly so that they can take immediate steps if needed.

9.FUTURE ENHANCEMENT:

Moreover, we have a future plan to implement another application to assist in rescue and relief operation after the disaster and a better server side application to totally automate the system of detecting disaster prone area

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