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A Tracking System using Location Prediction and Dynamic Threshold for Minimising Message Delivery

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Abstract: **Cellular text electronic messaging services area unit progressively being relied upon to broadcast crucial data throughout emergencies. Accordingly, a good vary of organizations together with faculties and universities currently partner with third-party suppliers that promise to improve physical security by apace delivering such messages. Sadly, these products don't work as publicised because of limitations of cellular infrastructure and thus give a false sense of security to their users. During this paper, we have a tendency to perform the primary extensive investigation associate degreed characterization of the restrictions of an Emergency Alert System (EAS) mistreatment text messages as a security incident response mechanism. we have a tendency to show emergency alert systems designed on text electronic messaging not solely will meet the ten minute delivery requirement mandated by the WARN Act, however conjointly doubtless cause different voice and SMS traffic to be blocked at rates upward of 80 percent. We have a tendency to then show that our results area unit representative of reality by scrutiny them to variety of documented however not previously understood failures. Finally, we have a tendency to analyze a targeted electronic messaging mechanism as a way of with efficiency mistreatment presently deployed infrastructure and third-party EAS. In thus doing, we have a tendency to demonstrate that this progressively deployed security infrastructure will not deliver the goods its expressed needs for giant populations.**

Keywords: **emergency alert system, sms, EAS**

1. INTRODUCTION

TEXT messaging allows individuals to transmit short, alphanumeric communications for a wide variety of applications. Whether to coordinate meetings catch up on gossip, offer reminders of an event or even vote for a contestant on a television game show, this discreet form of communication is now the dominant service offered by cellular networks. In fact, in the United States alone, over accordingly, SMS messaging is now viewed by many as a reliable method of communication when all other means appear unavailable. In response to this perception, a number of companies offer SMS-based emergency messaging services. Touted as able to deliver critical information colleges, universities, and even municipalities hoping to coordinate and protect the physical security of the general public have spent tens of millions of dollars to install such systems. Unfortunately, these products will not work as advertised and provide a false sense of security to their users while many of the applications of this service can be considered noncritical, the use of text messaging during emergency events has proven to be far more utilitarian.

In this paper, we explore the limitations of third-party Emergency Alert Systems (EAS). In particular, we show that because of the currently deployed cellular infrastructure, such systems will not be able to deliver a high volume of emergency messages in a short period of time. This identifies a key failure in a critical security incident response and recovery mechanism and demonstrates its inability to properly function during the security events for which it was ostensibly designed.

2. SENDING A MESSAGE

There are a number of ways in which text messages can be injected into a GSM or CDMA network. While most users are only familiar with sending a text message from their phone, known as Mobile Originated SMS (MO-SMS), service providers offer an expanding set of interfaces through which messages can be sent. From the Internet, for instance, it is possible to send text messages to mobile devices through a number of web pages, e-mail, and even instant messaging software. Third parties can also access the network using so-called SMS Aggregators. These servers, which can be connected directly to the phone network or communicate via the Internet, are typically used to send “bulk” or large quantities of text messages. Aggregators typically inject messages on behalf of other companies and charge their clients for the service. Finally, most providers have established relationships between each other to allow for messages sent from one network to be delivered in the other. After entering a provider’s network, messages are sent to the Short Messaging Service Center (SMSC). SMSCs perform operations similar to e-mail handling servers in the Internet, and store and forward messages to their appropriate destinations. Because messages can be injected into the network from so many external sources, SMSCs typically perform aggressive spam filtering on all incoming messages. All messages passing this filtering are then converted and copied into the necessary SMS message format and encoding and then placed into a queue to be forwarded to their final destination.

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3. FINDING A DEVICE

Delivering messages in a cellular network is a much greater challenge than in the traditional Internet. Chief in this difficulty is that users in a cellular network tend to be mobile, so it is not possible to assume that users will be located where we last found them. Moreover, the information about a user's specific location is typically limited. For instance, if a mobile device is not currently exchanging messages with a base station, the network may only know a client's location at a very coarse level (i.e., the mobile device may be known to be in a specific city, but no finer grained location information would be known). Accordingly, the SMSC needs to first find the general location for a message's intended client before anything else can be done.

4. PROPOSED WORK

Client: The mobile requests its location from the positioning system periodically and sends it through the communication network to the server, (Who are near in accident).A location based service is an information service that can be accessed using the mobile device through the mobile network and utilizes the ability to make use of geographical positions of the mobile device. The user can request the location of an accident place.

GPS: Every time the mobile phone updates the user location in the server, it requests the location of the user from the GPS. The GPS determines the longitude and the latitude (geographical) and sends them to the mobile phone.

Server: The server receives users alert message after receiving the message, the server side that is Traffic Monitoring Centre (TMC) check the what type of message it is any emergency ,after checking make to find an corresponding location of the accident place through GPS, and after founding the location to make an call to the corresponding service.

GSM and Database: The database contains all users subscribed in the service with their receiving message, (received message will stored in database) after receiving the message, we are finding the location of the corresponding accident location.GSM modem is a specialized type of modem which accepts a SIM card, and operates over a subscription to a mobile operator, just like a mobile phone. From the mobile operator perspective, a GSM modem looks just like a mobile phone. Importing the comm Driver and connecting the Modem to the PC with serial port.

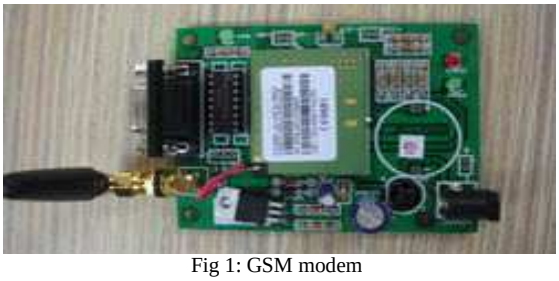

Fig 1: GSM modem

5. CONCLUSION

Cellular networks are more and more turning into the first means of communication throughout emergencies. Riding the widely control perception that text electronic messaging could be a reliable method of quickly distributing messages, an oversized range of colleges, universities, and municipalities have spent tens of millions of bucks to deploy third-party EAS over cellular systems. However, this security incident response and recovery mechanism merely doesn't work as publicised. Through modelling, a series of experiments and corroborating evidence from real-world tests, we've shown that these networks cannot meet the ten minute alert goal mandated by the general public EAS charter and therefore the WARN Act. Moreover, we've incontestable that the additional text messaging traffic generated by third-party EAS can cause congestion within the network and will probably block upward of eighty of traditional requests, probably including calls between emergency responders or the general public to 9-1-1 services. Consequently, it's vital that legislators, technologists, and therefore the general public perceive the fundamental limitations of this mechanism to safeguard physical security and public safety which future solutions are totally evaluated before deployed.

6. FUTURE WORK

In future we can add acknowledgement to the current application. By using this we can get the status of our message like whether it is delivered or not. If it is delivered we can get an acknowledgement like message delivered longitude and latitude values are generated successfully.

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