A Survey on Android Application for Antitheft Security using SMS

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Abstract—Nowadays the world is become digital. Numbers of Android users are increased day-to-day. With increasing number of android device the possibility of stealing Android smart phones are also increased. Security is one of the main concerns for Android smart phone users today. This application will helps user to find his stolen android smart phone. For this problem user only need to send an SMS with specific command. For this process user doesn't require internet connection. This is the main advantage of our system. User also will get notification if SIM card will change by thief. User will get mobile number of thief by SMS on secondary mobile. User can change his android smart phones profile mode like silent to vibrate or general. User will get exact location of android smart phone using GPS through SMS. We provide password protection for our application so thief cannot uninstall our application without entering correct password which is set by user.

Key words: Remote Access, Android Smart Phone Security, Theft Protection, Password Protection

I. INTRODUCTION

Nowadays, the mobile has become an important part of human life. Number of persons use mobile in their day-to-day activities. We can refer the current time as the era of android smart phone. In android smart phones user save his critical and sensitive data like automated call records, photos, videos and saved passwords of web pages. So everyone take care of his android smart phones because losing the smart phone means a very high amount of irrecoverable data loss. So our android application is claims that even the thief theft your android smart phone and change the SIM then our application can track location of your android smart phone. Therefore by using our android application user can find his stolen android smart phone easily. The main feature of our android application is that we can identify thefts mobile number when he change the SIM in stolen smart phone and by tracking the location we get the smart phone. The mobile location can be tracked using the GPS. This helps to find the exact information of android smart phone. This application takes online backup of this application setting like username, password, email, mobile number, IMSI etc.

II. LITERATURE REVIEW

The various algorithms are used to obtain the final location estimation from the network-based and satellite-based system. Most of the system provides solutions using tracking methods to monitor a mobile device. But by just enabling the cell phones with GPS system and retrieving the information about the new SIM would be insufficient to track the Android smart phone. Hence came the idea of developing SAPT – A Stolen Android Phone Tracking application, with few more features which help in controlling the lost android Smart phone and retrieving it back. By using location-based services (LBs) like GPS or global system for mobile (GSM) network to track a mobile device.

A. Mobile tracking approach is presented by Chao-Lin Chen[1].

It uses a hybrid location scheme, which combines both the satellite-based and the network-based signals. The proposed scheme uses the two-step Least Square method to estimate the three-dimensional position (i.e. the longitude, latitude, and altitude) of the mobile devices.

B. Sangwoo Cho et.al.[2]

Presents a method to track a mobile device by monitoring the signal powers of the mobile transmitter measured at several base stations. The tracking method uses a constrained Bayesian bootstrap filter with signal power measurements in order to improve accuracy.

III. PROPOSED SYSTEM

We will design this system for easily tracking the exact location of stolen android smart phone. We can track the exact location by sending just one SMS with some commands. The main feature of our android application is when thief change the SIM of stolen android smart phone user immediately gets update on secondary mobile.

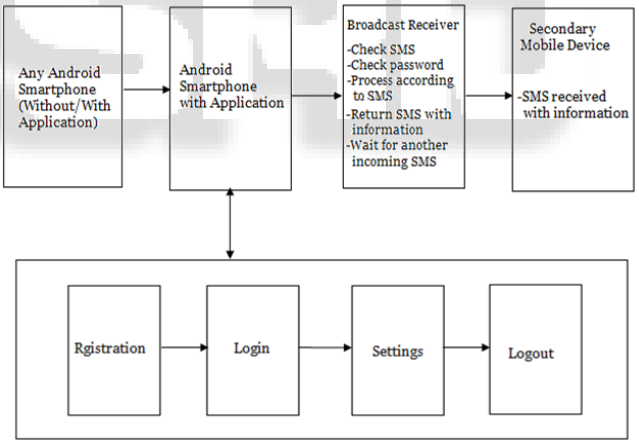

Fig. 1: Architecture of Proposed System

IV. METHODOLOGY

For the implementation of our android application we use three methods. One method is used to retrieve information after sending SMS. Another method is used to find the latitude and longitude of stolen android smart phone. By using this method another method will show exact location using Google map.

A. SMS

User will send SMS to stolen android smart phone. User send Command with Password through SMS. Our application detect SMS received event and get details from SMS. Application check command in background and perform action according to specific command from SMS. If user send command for retrieving location then the SMS

will like "Pass location". Application first check the password and if password matches then it will perform action for getting current location of stolen android smart phone. After getting details the application automatically sends information to the number from which user sends the SMS.

In maximum cases of stealing android smart phones, the thief will firstly changes the SIM card in it. Our application will detect it. The proposed application will save the previous SIM identity. If thief had changed the SIM then our application will check the identity of SIM with new SIM. If it does not match with previous one then alert message will be sent to the secondary mobile.

Also the alert function will provide by the proposed system. After the alert SMS send to the stolen android smart phone the phone will ring for some specific time. Also the ring will stop if user will enter the valid password.

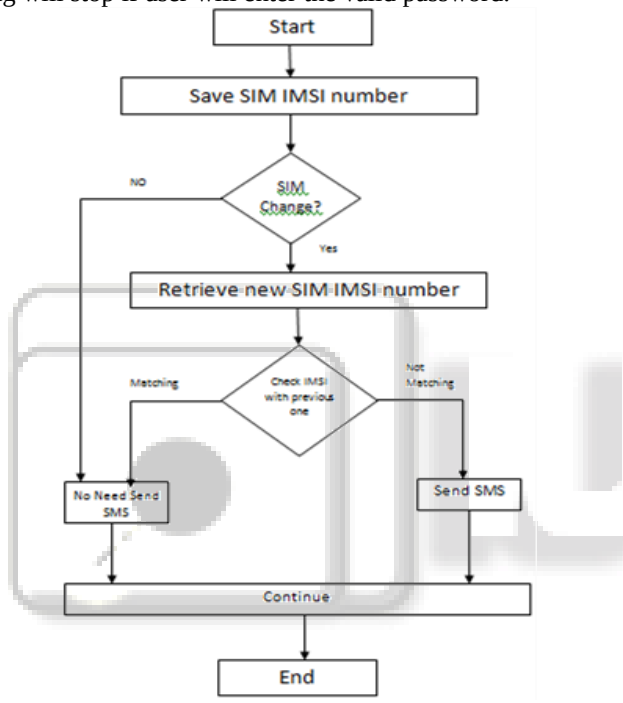

Fig. 2: Flowchart for SIM change

B. Global Positioning System (GPS)

If the user's android smart phone is stolen and user want to track the location of android smart phone then user will send SMS with specific command. After receiving SMS from user our system will fetch the information about latitude and longitude using GPS. By using this information we track the location of android smart phone with the help of another method.

C. Google map

Google map required co-ordinates such as latitude and longitude to show the exact location. GPS fetch information of latitude and longitude by using this information Google map will show the exact location of stolen android smart phone. This location information will help to find the stolen android smart phone.

D. Internet

Internet is present in android smart phones. We can use it for our application. We use it for sending email alert on users email id when android smart phone will stole. The email id is provided by user at the time of registration. Also we can take backup of users setting on the web server.

V. Plan of Implementation

Our proposed model will be implementing in the Android 4.0.3 platform Operating System. To implement the proposed model we use Eclipse IDE which uses Java programming language. This application will provide information about stolen android smart phone by SMS.

In our application user need to register first. While registration he have to provide information like First Name, Last Name, Mobile Number, Secondary Mobile Number, Email, Password and Command Password. Command password is used for authentication when mobile will stole by thief. User have to send this command password with command in SMS when mobile will stole. When the SMS is received on stolen android smart phone then our application will check the commands in that SMS and send appropriate information to secondary mobile through SMS. Charges for the SMS will deduct from the SIM which is used in stolen android device. If thief changes the SIM then SMS will receive through that SIM to secondary number. Cause of this user will also get the thief mobile number. Also user can change the profile mode of android smart phone from silent to vibrate or general and vice versa through SMS.

We will be add extra feature in our application as if we reached in that area where android smart phone is present and we can't find the exact location of stolen android smart phone. So by using our function of android application we send one specific alert message. After receiving that alert message stolen android smart phone starts ringing until user not enter specific password to stop that ringing of android smart phone. Also after some specific time of interval the android smart phone stops ringing. This functionality of our android application helps to find the exact location of android smart phone.

VI. Conclusion

In this paper we propose a system which easily finds the stolen android smart phone location by sending just one SMS. That SMS contains Password and associated command. This application will perform actions on SMS Received event. Also it will use IMSI number to detect SIM change and notify to the user by using secondary mobile number. Also the alert function is used to ring the android smart phone till the valid password is provide otherwise the ringing will stop after the specific time interval. The proposed system will implement on Android Operating System platform.

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