

# Android Application for Antitheft Security through SMS

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**Abstract**— Numbers of Android users are increased day-to-day. The world is become digital with increasing number of android device. The possibility of stealing Android smart phones are also increased nowadays. Our android application 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 get notification if SIM card change by thief. User get mobile number of thief by SMS on which received on secondary mobile. User can change his android smart phones profile mode like silent to vibrate or general. User 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. Security is one of the main concerns for Android smart phone users today.

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

## I. INTRODUCTION

In present world most of the peoples are use android smart phone. There are many tasks which are easily completed by using android smart phone. So most of the peoples are using android smart phones to their regular important work. Android smart phones are also helps to store the critical and sensitive important data like automated call records, photos, videos and saved passwords of web pages. If android smart phones are lost or stolen then our relative data which stored in android smart phone are also lost or may it misused by theft. It is not affordable to buy a new android smart phone to everyone. So our android application helps user to find his lost or stolen android smart phone. In most stolen cases of smart phones theft change the SIM cards. At that time our android application detects that SIM\_CHANGE\_EVENT and sends information to secondary mobile number which is provided by the user at the time of registration. User also get new SIM number which is inserted by theft. In our android application we defined some commands which is helpful to user to get information about stolen android smart phone. When user send specific command for checking location to stolen android smart phone then he gets location link through SMS on secondary mobile.

## 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.

Kaur S. and Kaur M.<sup>[3]</sup> Implementing Security on Android Application proposes smartphone application through Short Message Service. It proposes a model to return smartphones from any kind of missing or stolen condition. This android application uses for smartphone security and theft protection.

Luís Carlos Moreno Varandas, Binod Vaidya, Joel José Puga Coelho Rodrigues<sup>[4]</sup> proposes an "mTracker: A Mobile Tracking Application for Pervasive Environment". It proposes tracking application tool, called mobile tracker, which uses location-based services (LBs) like GPS or global system for mobile (GSM) network to track a mobile device. Through the known geographic position, this application enables the user to track a mobile device and send alerts if it is out of the radius around an interest point, previously defined by the application administrator.

## III. IMPLEMENTED SYSTEM

We 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.

### A. Database Module Implementation

In this module we develop database which has a table with columns like Login\_password, Message\_password, and Secondary Mobile Number etc. While registering all this information get stored in local database. Because of local database the speed of our Android Application is increased. Also for storing database our Android Application doesn't require internet connection.

### B. Communication Module

This module is used for interacting with user. User provides input Login\_password, Message\_password, and Secondary Mobile Number etc. and gets output like current location, theft mobile number, etc. from this module.

#### 1) Registration

For registration process users have to enter required information and click on register. As shown in above figure user has to fill all mentioned information in registration form. After clicking on register button all information get stored in local database as well as on server. While storing filled information we stored IMSI number of SIM card in database. This IMSI number helps us to detect SIM\_CHANGE event.

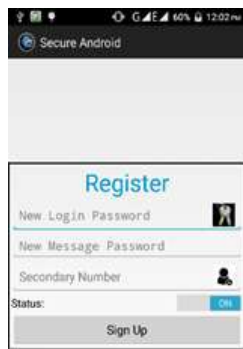


Fig. 1: Registration

2) Settings

User has number of options like change login or message password, change secondary mobile number, update IMSI number, mobile alert, etc.



Fig. 2: Settings

a) Change login or message password  
For changing login or message password user first have to enter current password and then new password. After filling all that information user to click on save button for update information.



Fig. 3: Change login or message password

b) Change Secondary Mobile Number  
For changing secondary mobile number user first have to enter current secondary mobile number and then new secondary mobile number. After filling all that information user to click on save button for update information.

c) Update IMSI Number  
When user register in our application that time by default our application save the IMSI number of that particular SIM

which present in android smart phone. If user wants to change his SIM card that time after changing the SIM user have to login to his account and click on update SIM in settings for saving new IMSI number.



Fig. 4: Update IMSI number

d) Mobile Alert  
We added 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.

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 shows the exact location using Google map.

A. SMS

User sends SMS to stolen android smart phone. In that SMS user send Command with Password. 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 as "Pass location". Application first check the password and if password matches then it 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 first changes the SIM card and may or may not insert his SIM. Our application can detect that the SIM change by someone when thief insert his SIM. Our application save previous SIM identity. If thief had changed the SIM then our application check the identity of SIM with new SIM. If it does not match with previous one then alert message sent to the secondary mobile.

Alert function also provide by our application. 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.

#### 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 can send SMS with specific command. After receiving SMS from user our system 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 and by using this information Google map shows the exact location of stolen android smart phone. This location information helps to find stolen android smart phone.

#### D. Internet

Internet is present in every android smart phone. We use this for our application. Using Internet we send email alert on users email id when android smart phone is stolen. That email id is provides by user at the time of registration. Also we can take backup of users setting on the web server.

### V. IMPLEMENTATION PROCESS

Our application is implemented in the Android 4.0.3 platform Operating System. To implement our application we use Eclipse IDE which uses Java programming language. This application provides 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 is stolen by thief. User has to send this command password with command in SMS. When the SMS is received on stolen android smart phone then our application check the commands in that SMS and send appropriate information to secondary mobile through SMS. Charges for the SMS deduct from the SIM which is used in stolen android device. If thief changes the SIM then SMS receive through that SIM to secondary number. Because of this user 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.

### VI. CONCLUSION

In this paper we explain our implemented application which easily finds the stolen android smart phone location by sending just one SMS. That SMS contains Password and associated command. This application performs actions on SMS received event. Also it use IMSI number to detect SIM change and notify to the user by using secondary mobile number. The alert function is used for ringing the android smart phone till the valid password is provide otherwise the ringing will stop after some time of interval. Our application implement on Android Operating System platform.

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