INTERNATIONAL JOURNAL OF

MULTIDISCIPLINARY RESEARCH

IN SCIENCE, ENGINEERING AND TECHNOLOGY

INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 7.521

Antitheft and Security control for Android Smartphone

[1]T.Pradeep, [2]Dr.D.Hari Prasad

[1]Assistant Professor, Department of Computer Applications, Sri Ramakrishna College of Arts & Science,

Coimbatore, India

[2]Associate Professor & Head, Department of Computer Applications, Sri Ramakrishna College of Arts & Science,

Coimbatore, India

ABSTRACT: The Ultimate security for Android device in case it is ever lost or stolen. Powerful and unique features mean accurate tracking of stolen or lost smart phone. Owner's SIM card gets registered with Application database. If SIM get changed without user's knowledge, application will trigger a SMS from new SIM to registered or predefined contact numbers. Application performs all its features in background. Application completely runs in background, so the person who stole the device has no clue on what is happening in devices background. Even application's icon itself won't be visible in device's "All Applications List". Whenever SIM changes, then in background, without current user's knowledge, application will switch ON device GPS and fetch the location and send it to user's predefined number through SMS. Application will perform SIM change detection, Sound Audible Alarm and Contact Backup using SMS keyword. With Anti-Theft for Mobile, you can remotely lock the phone and protect the information it contains with a single SMS message. With the help of the new remote locator feature, you always know where your phone is located. If the phone is stolen and the thief changes the SIM card, the Theft Control feature will send SMS to predefined contact number automatically and informs you of the new number. As an ultimate safety measure to prevent misuse.

KEYWORDS: SIM, Android device, Alert System, Control Systems

I.INTRODUCTION

The Global Positioning System (GPS) is a space-based satellite navigation system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites. The system provides critical capabilities to military, civil and commercial users around the world. It is maintained by the United States government and is freely accessible to anyone with a GPS receiver. A GPS receiver calculates its position by precisely timing the signals sent by GPS satellites high above the Earth. Each satellite continually transmits messages that include The time the message was transmitted and Satellite position at time of message transmission. The receiver uses the messages it receives to determine the transit time of each message and computes the distance to each satellite using the speed of light. Each of these distances and satellites' locations define a sphere. The receiver is on the surface of each of these spheres when the distances and the satellites' locations are correct. These distances and satellites' locations are used to compute the location of the receiver using the navigation equations.

This location is then displayed, perhaps with a moving map display or latitude and longitude; elevation information may be included. Many GPS units show derived information such as direction and speed, calculated from position changes. In typical GPS operation, four or more satellites must be visible to obtain an accurate result. Four sphere surfaces typically do not intersect. Because of this we can say with confidence that when we solve the navigation equations to find an intersection, this solution gives us the position of the receiver along with accurate time thereby eliminating the need for a very large, expensive, and power hungry clock. The very accurately computed time is used only for display or not at all in many GPS applications, which use only the location. A number of applications for GPS do make use of this cheap and highly accurate timing. These include time transfer, traffic signal timing, and synchronization of cell phone base stations. Although four satellites are required for normal operation, fewer apply in special cases. If one variable is already known, a receiver can determine its position using only three satellites. For example, a ship or aircraft may have known elevation. Some GPS receivers may use additional clues or assumptions such as reusing the last known altitude, dead reckoning, inertial navigation, or including information from the vehicle computer, to give a (possibly degraded) position when fewer than four satellites are visible

II.METHODOLOGY

The Ultimate security for Android device in case it is ever lost or stolen. Powerful and unique features mean accurate tracking of stolen or lost smart phone. Owner's SIM card gets registered with Application database. If SIM get changed without user's knowledge, application will trigger a SMS from new SIM to registered or predefined contact numbers. Application performs all its features in background. This application provides following features:

DEVICE LOCATION TRACKING - The feature of this application will provide you the information about your lost Android phone location through GPS. We can track the lost device using this feature in the application. The broadcast receiver component of the android helps you to receive the cell tower signals to track your device.

CONTACT BACKUP- The feature of this application will help the user to back up the whole contact of the new sim inserted to the lost device in silent this feature specifically runs on background where the user can get all the contact list of the lost device's new sim through an SMS. Service is the component of Android used in this application feature it commonly runs on background.

ENCRYPTION AND HIDING OF DATA - Encryption is a process of translating a message, called the Plaintext, into an encoded message, called the Cipher text. This is usually accomplished using a secret Encryption Key and a cryptographic Cipher. Two basic types of Encryption are commonly used: Symmetric Encryption, where a single secret key is used for both encryption and decryption. Asymmetric Encryption, where a pair of keys is used -- one for Encryption and the other for Decryption.

USER REGISTRATION- The feature of this application enables user to register the user name and password to enable the admin settings of the application to change the emergency contacts and names stored in the application and also it enables the user to register the specific Track device options with their password.

SMS COMMANDS - This particular feature of this application enables user to send a Specific SMS keyword to the lost device to make an Alarm and Contact backup in silent mode.

SOUND AUDIBLE ALARM - This feature enables user to identify their lost device in case if it is kept in silent mode with a SMS keyword the user can activate the alarm of the particular lost device and they can identify. This feature in this application helps user even if they forget their device in their own place after kept in silent mode they can identify by activating the alarm by sending an SMS keyword to the device

SIM CHANGE DETECTION - This feature in this application will run automatically if the device lost the user can receive a SMS to the registered emergency contact about the IMSI (International mobile subscriber identity) number of the new sim inserted with that IMSI number the owner of the lost device can get the details from the new sim operator about the details of the current user of the device.

LOCK DOWN OF THE DEVICE - This particular feature of this application enables the owner of the lost device to lock down their lost device with a specific password where the device cannot be performed by anybody.

FINDER´S INFORMATION.- This feature related to the concept of IMSI where the owner of the lost device can get the information about the current user of the lost device by help of the operator.

Fig-1Mobile Eco-System

III.RESULTS AND DISCUSSION

In this Section we are comparing the existing model and proposed model with some of the parameters such as XML Http Response , JSON and XML Transfer rate The related graph of both the models have give below.
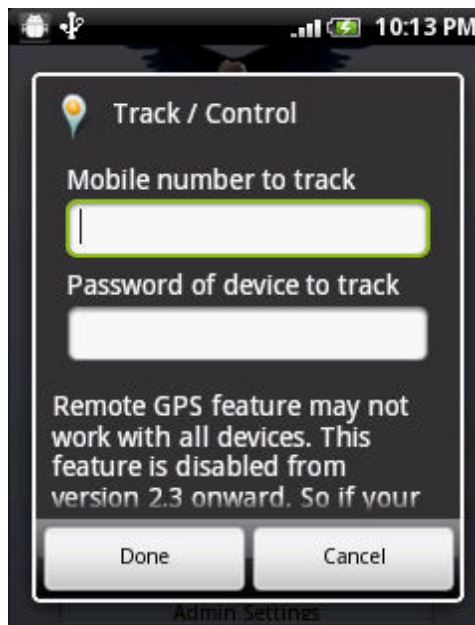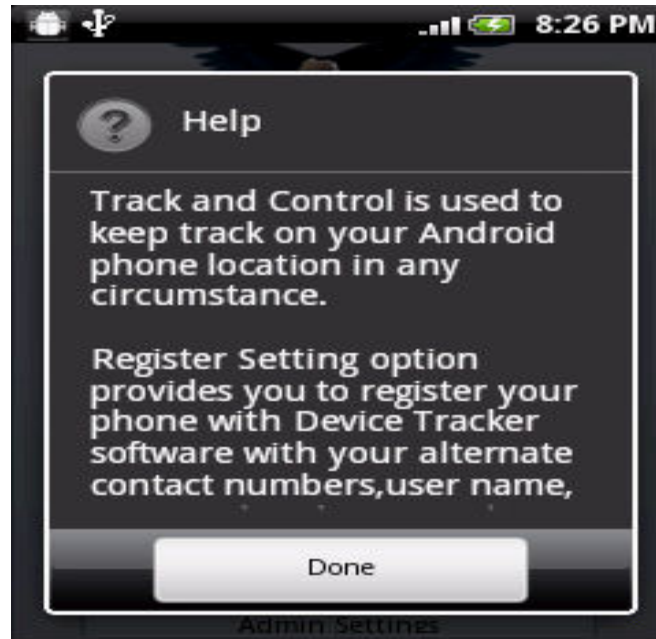

Fig 2. Sample results

Fig 3. Sample results

IV.CONCLUSION AND FUTURE WORK

Our system would send alert SMS to owner alerting him of the phone number without the knowledge of thief in silent mode. This application protects, secure and prevent theft of our mobile and make it hunder for a thief to steal. Entire application runs in background, without user's interaction on device. Only for registration and configuring purpose user need to open the application.SMS processing in lost device happens in background and not get stored into device. Apart from antitheft, this application also provides any information on user request on any particular location.

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