

# Location Tracking Using Sms Based On Android Mobile

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## ABSTRACT

Android platform is a new generation of smart mobile phone platform launched by Google. Android provides the support of location service. So far, the development of location applications is complex and difficult. This paper introduces the architecture and component models of Android, and analyzes the anatomy of an Android application including the functions of Activity, Intent Receiver, Service, SMS, and etc. Based on Android, the design method of a location-based mobile service is then presented. The design example shows that it's so easy to implement location application which fetches latitude and longitudinal values and sends through the desired phone number.

**Keywords** :— Location Tracking, SMS, Smart Mobile, Android.

## I. INTRODUCTION

Every day the features and capabilities of Mobiles are increasing surprisingly. For this reason we want to create

an Android application which gives us the opportunity to improve our knowledge of Mobile developing [1].

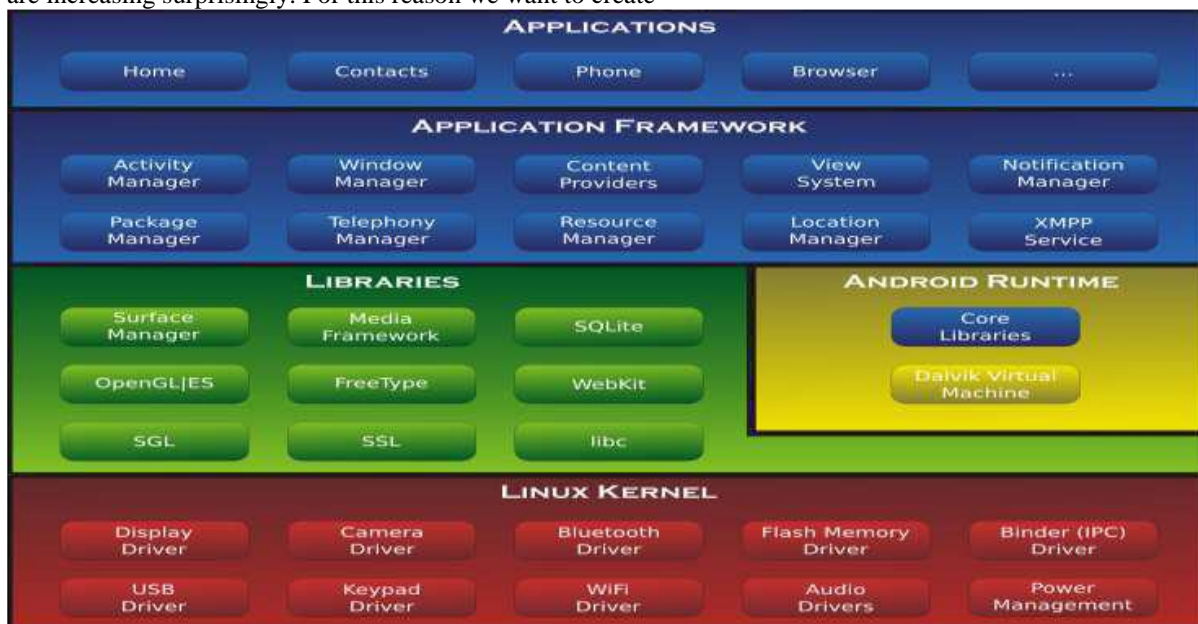


Fig 1: Architecture of Android OS [1]

### Applications Layer

Android ships with a set of core applications, that including an email client, SMS program, calendar, maps, browser, contacts and others. All applications are built using the Java. Each of the application aims at performing a specific task that it is actually intended to do.

### Application Framework Layer

The next layer is the application framework. This includes the programs that manage the phone's basic functions like resource allocation, telephone applications, switching between processes or programs and keeping track of the phone's physical location. Application developers have full access to Android's application framework. This allows them to take advantage of Android's processing capabilities and support features when building an Android application. We can think of the application framework as a set of basic tools with which a developer can build much more complex tools.

**Libraries Layer**

The next layer contains the native libraries of Android. These shared libraries are all written in C or C++, compiled for the particular hardware architecture used by the phone and preinstalled by the phone vendor.

**Android Runtime Layer**

Android Runtime layer includes Dalvik Virtual Machine (DVM) and a set of core java libraries. Every Android app gets its own instance of DVM. Dalvik has been written so that a device can run multiple virtual machines efficiently and it executes files with .dex (Dalvik Executable Format) extension optimized for minimum memory.

**II. RELATED WORK**

**Ringer**

A silent phone can be extremely tricky to find. If you're in the habit of losing a silent cell phone, you may wish to invest in a phone sensor, also known as a phone detector. These are tools that, when placed near a cell phone, will actually pick up the call signal and make sounds to indicate that the phone is somewhere within proximity. If the phone is lost, all you need to do is have someone call you as you walk around with the sensor until the device begins to indicate that a call signal is nearby. When you hear the signal, you then have a basic idea of where to start looking for your cell phone.

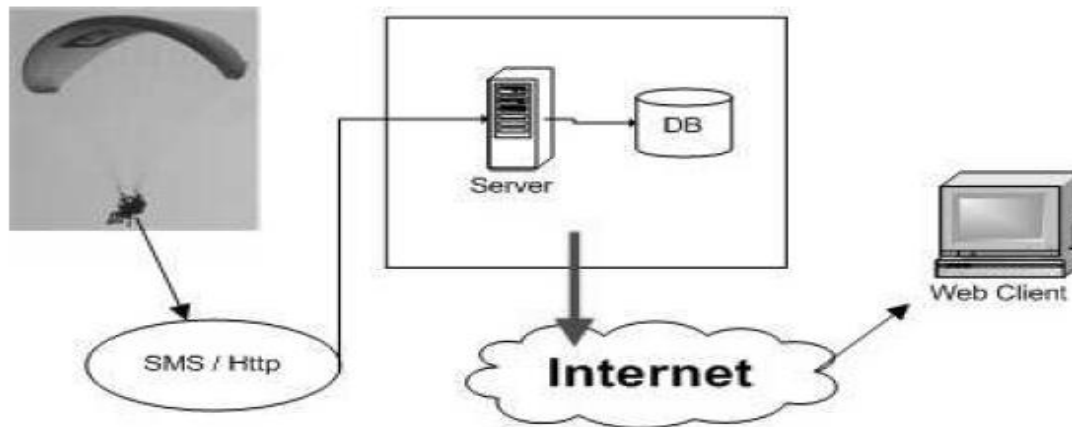


Fig 2: GPS tracker: General schema

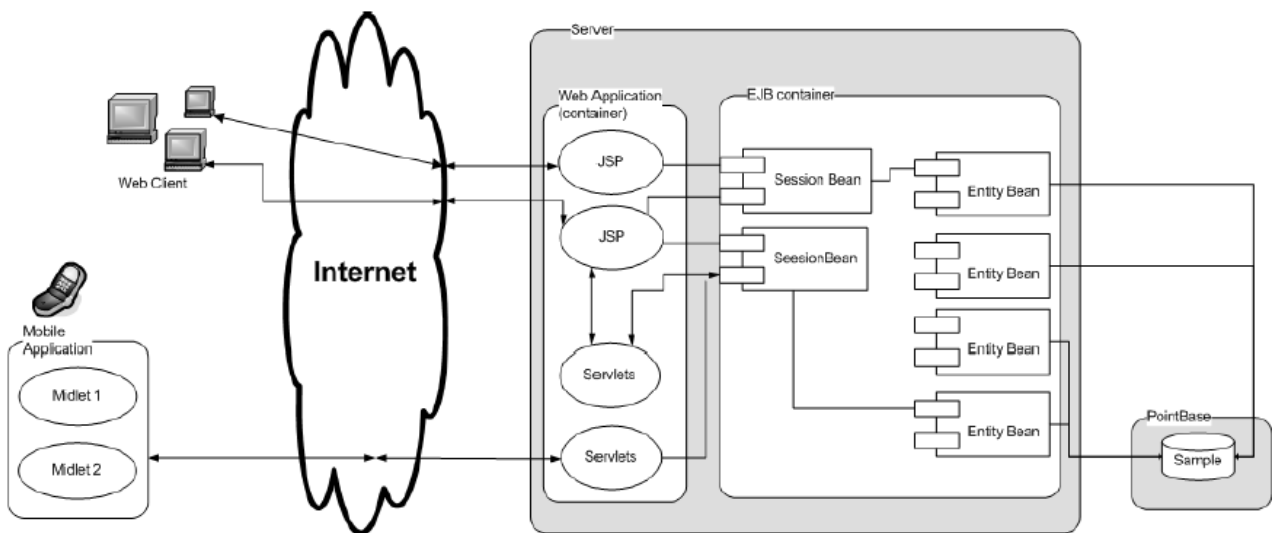


Fig 3: General Architecture of GPS Tracker application

**Phone Tracking Using IMEI Number:**

Every phone comes with a unique International Mobile Equipment Identify Number which can come in useful

to track it in case of loss or theft. This number can be accessed by dialing \*#06# and it is advisable to make a note of it as soon as you purchase your handset. In case the phone gets

stolen, file an FIR with the police and give them its identity number. Pass on a copy of the FIR and IMEI number to your service provider who will then be able to track your handset. With its IMEI number, a device can be traced even if it is being used with another SIM or even if it is switched off. Once the handset is located, request your service provider to block it from being used till you are able to get your hands on it again.

### III. PROPOSED WORK

This paper explains all the details of development process for the **Location tracking of an Android device using SMS [DroidLocator]** software system. The main feature of **DroidLocator** is to provide location tracking functionalities to Android devices using SMS. This application locates device by making device ring and get latitude and longitude of an Android device. Also the **DroidLocator** have the capability of authentication to share the location information with the sender of SMS. The Android application gives the opportunity to share location information with the users through SMS. In order to do that, the application receives each SMS, matches contents of SMS with predefined attention word. If attention word matches with the predefined word than application makes device ringing or get

location details of device and acknowledges the user through SMS [1].

Android's Network Location Provider determines user location using cell tower and Wi-Fi signals, providing location information in a way that works indoor and outdoor, responds faster, and uses less battery power. The purpose of location-based services is to find the Physical location of the device. Access to the location-based services is handled by the LocationManager system Service. To access the Location Manager, request an instance of the LOCATION\_SERVICE using the get System Service() method.

Current Location can be fetched using two ways:

1. GPS (Global Positioning System)
2. Network Service Location

#### GPS (Global Positioning System)

The Global Positioning System (GPS) uses a constellation of 24 satellites orbiting the earth. GPS finds the user position by calculating differences in the times the signals, from different satellites, take to reach the receiver. GPS signals are decoded, so the smart phone must have in-built GPS receiver. To get access to GPS hardware of android we request using following statement **LocationManager.GPS\_PROVIDER;**

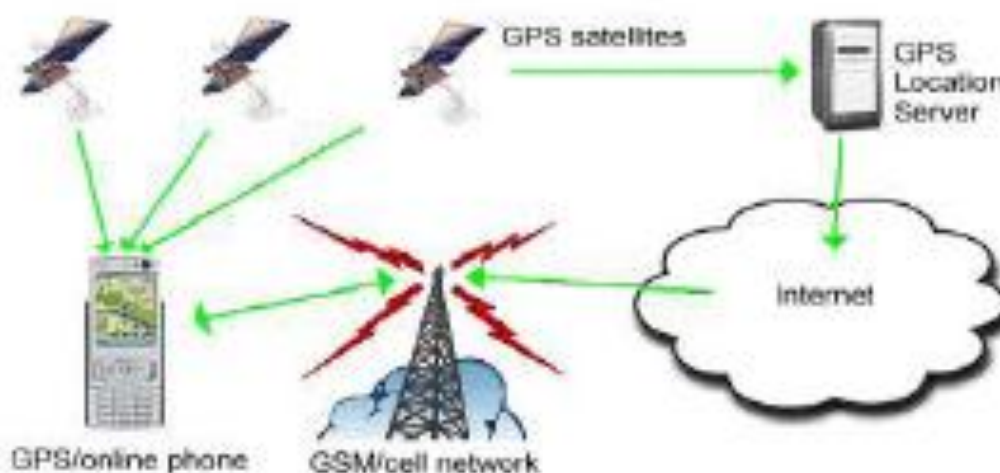


Fig 4: Architecture of A-GPS System

#### Network Service Location

The current cell ID is used to locate the Base Transceiver Station (BTS) that the mobile phone is interacting with and the location of that BTS. It is the most basic and cheapest method for this purpose as it uses the location of the radio base station that the cell phone is connected to. A GSM cell may be anywhere from 2 to 20 kilometers in diameter.

Other approaches used along with cell ID can achieve location granularity within 150 meters. The granularity of location information is poor due to Wide Cell Range. The advantage is that no additional cost is attached to the handset or to the network to enable this service. To get access to Network Provider android we request using following statement **LocationManager.NETWORK\_PROVIDER;**

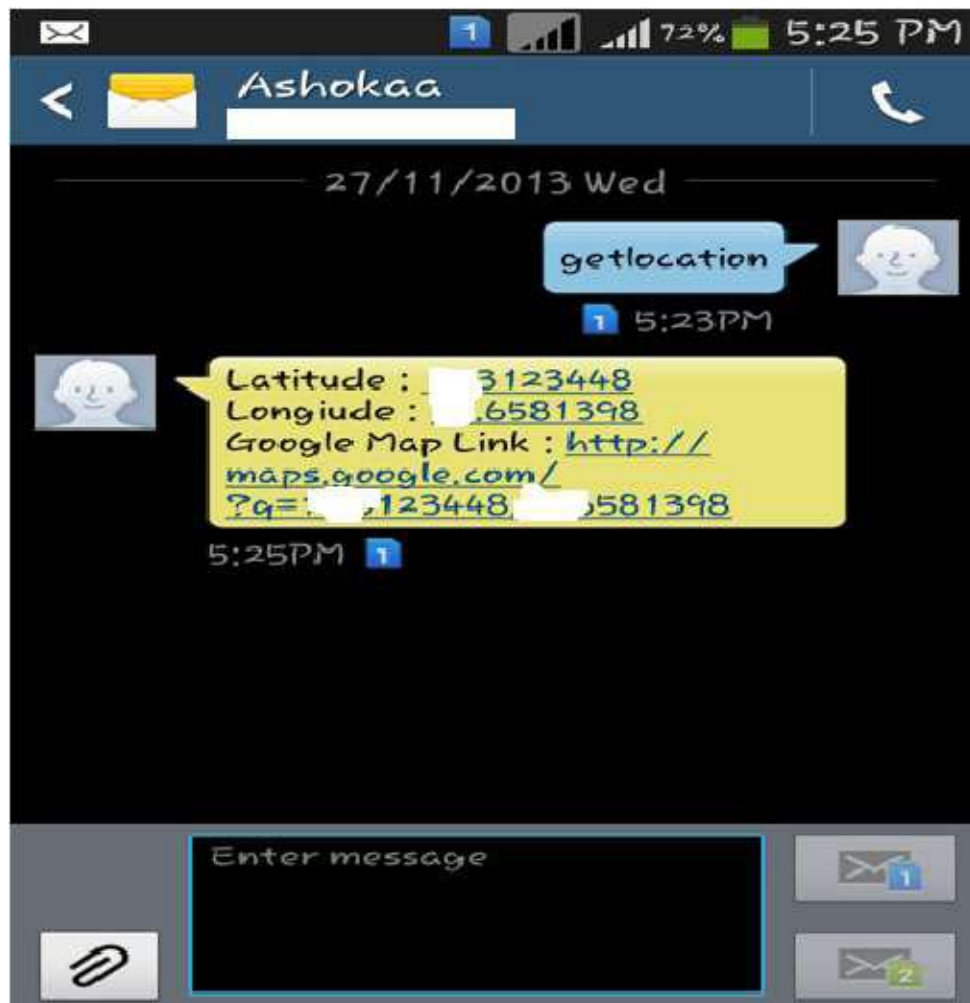


Fig 5: GPS location detail acknowledgement

#### Geocoding and Reverse Geocoding

Geocoding lets us translate between street addresses and longitude/latitude map coordinates. This can give us a recognizable context for the locations and coordinates used in location-based services and map-based activities. The Geocoding lookups are done on the server, so our applications will require us to include an Internet uses-permission in our manifest. The Geocoder class provides access to two geocoding functions: Forward Geocoding and Reverse Geocoding. Forward Geocoding converts the address into latitude and longitude. Reverse Geocoding converts latitude and longitude to corresponding address

#### IV. CONCLUSION AND FUTURE WORK:

We have created features, which will enhance the existing cell tracking system. Application stands different from the existing system as it's not only the GPS value it makes use of but it works on GSM/ text messaging services which makes application a simple & unique one. This paper explains all the details of development process for the **Location tracking of an Android device using SMS**

[DroidLocator] software system. The main feature of **DroidLocator** is to provide location tracking functionalities to Android devices using SMS. This application locates device by making device ring and get latitude and longitude of an Android device.

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