

Intelligent Vehicle Tracking System Using GPS on Android Smartphone

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ABSTRACT

GPS is one of the technologies that are widely accepted and used in a huge number of applications today. One of the applications is keeps regular monitoring and tracking your vehicle. Intelligent Vehicle Tracking System (IVTS) can inform you information can be observed from any remote location and the route and location travelled by vehicle. Intelligent Vehicle Tracking System (IVTS) includes the web application that provides exact and precise location of target vehicle. Intelligent Vehicle Tracking System (IVTS) helps user to track target vehicle in any weather conditions. In Intelligent Vehicle Tracking System (IVTS), GPS tracker device is attached to the vehicle. If the vehicle is stolen it automatically sends location of the vehicle to its owner as a SMS through GSM modem. Intelligent Vehicle Tracking System (IVTS) will be a much simpler and cost effective technique compared to others. Through Intelligent Vehicle Tracking System (IVTS) technique additional information about vehicles (e.g. exact location, speed) will be obtain. In Intelligent Vehicle Tracking System (IVTS), Geo fencing technique is used.

Keywords— GPS (Geo-positioning system), VTS (Vehicle Tracking System), And IoT (Internet of Things), and IVTS (Intelligent Vehicle Tracking System).

ARTICLE INFO

Article History

Received :22nd January 2016

Received in revised form :

24th January 2016

Accepted :26th January , 2016

Published online :

28th January 2016

I.INTRODUCTION

The ability to track, trace and control anything by anyone from anywhere on the planet has been mankind's unfulfilled desire. The usefulness of GSM and GPS has made them popular in their own context; integrating these technologies can prove to be an accurate solution for many unsolved problems. The idea of IVTS is to integrate these two technologies into one system and provide an effective application for vehicle tracking as well as personal tracking. To implement a multi tracking system use of the following two technologies can be made, firstly GSM (Global System for Mobile) which is a set of standards to describe technologies for Second Generation (2G) and GPS (Global Positioning System) which is a satellite-based navigation system consisting several satellites revolving around the earth. IVTS will provide solution for tracking and tracing of multiple movable objects at a same time, so the name

Intelligent Vehicle Tracking System (IVTS). IVTS show current location of the object and other add-on features, for vehicles there will be live tracing, tracking and road surface condition via GPS, controlling its subsystem parts via GSM network using SMS or GPRS. IVTS will be implemented in .NET Technology with android application.

1.1 What is IVTS?

Intelligent Vehicle Tracking system (IVTS) is tracking or tracing system for vehicles. IVTS will be useful because of its features such as Geo-fencing and vibration sensing technology. Geo-fencing mechanism used to inform the user whether vehicle is in boundary or out of boundary. Using vibration sensing mechanism quality of road will be displayed on map.

II.REALTED WORK

In Real time tracking system GM862 quad band of cellular module is used for implementation. [1] A graphical user

interface and monitoring server on a website is also developed using ASP.net and Microsoft SQL Server 2003 to view the proper location of a vehicle on a specific map like google,bing. Real time tracking system provides information about the vehicle status such as mileage, speed. Automobile anti-theft system using GSM and GPS module system [2] allows anti-theft system which makes easy for the user to protect their vehicle on the basis of RFID tracking system. Automobile anti-theft system using GPS module and GSM module system uses geo-fencing. Automobile anti-theft system using GPS module and GSM module system alerts the user by message on the user's android smart phone. Main advantage of Automobile anti-theft system using GPS module and GSM module is tracking of vehicle is easy because of RFID tag. Development and deployment of GPS and GSM module based Vehicle Tracking and Alert System. [4] Development and deployment of GPS and GSM module based Vehicle Tracking and Alert system allows inter-city, intra-city transport companies to track their vehicles in real-time and provides security from accident occurrences and armed robbery. Development and deployment of GPS module and GSM based Vehicle Tracking and Alert System useful for large size organization. Tracking and Routing System for Mobile Vehicles in Large Area system allows vehicle tracking system using GPS tracker and sensor attached to the vehicle. [5] As transport companies travel a long distance in a circuit Routing and Tracking System for Mobile Vehicles in Large Area system helps the companies to track their particular vehicles. Development and deployment of GPS module and GSM based Vehicle Tracking and Alert system and Routing and Tracking System for Mobile Vehicles in Large Area system are developed for same purpose. Cloud Computing for Agent Based Urban Transportation System [7] allows storing the information of the particular vehicle. The coordinates (latitude and longitude) are stored as the vehicle moves through a path. Coordinate information helps the user to track the vehicle. The server stores the information in a key format and used later for tracking operation. Real time pothole detection system using Android smart phones with accelerometers system allows [8] the user to get the reliability of the road. The accelerometer is a sensor which gives the intensity of the obstacles in the road. Real time pot-hole detection system using Android smart phones with accelerometers system will also indicate the driver about the time required to travel that particular road. Android Interface Definition Language (AIDL) [9] system allows the user to navigate through the application. Android is used to make an application for the ease of the user. An efficient GUI is designed to get the tracking details about the vehicle. Advantage of Android Interface Definition Language (AIDL) system is user friendly GUI. Safe Driving Using Mobile Phones system allows [10] the user to track the motion of the vehicle. The android application provides a graphical view of the moving of the vehicle with the help of Google maps. As geo-fencing is used, Safe Driving Using Mobile Phones system will also alert the user through message or by indicating it on the map. Intelligent Transportation Systems Society of Canada [6] is knowledgeable source for advice and information on intelligent transportation systems in Canada, and positions itself to be fair and unbiased by not lobbying for or

promoting government policy or any specific commercial interest.

III. PROPOSED SYSTEM

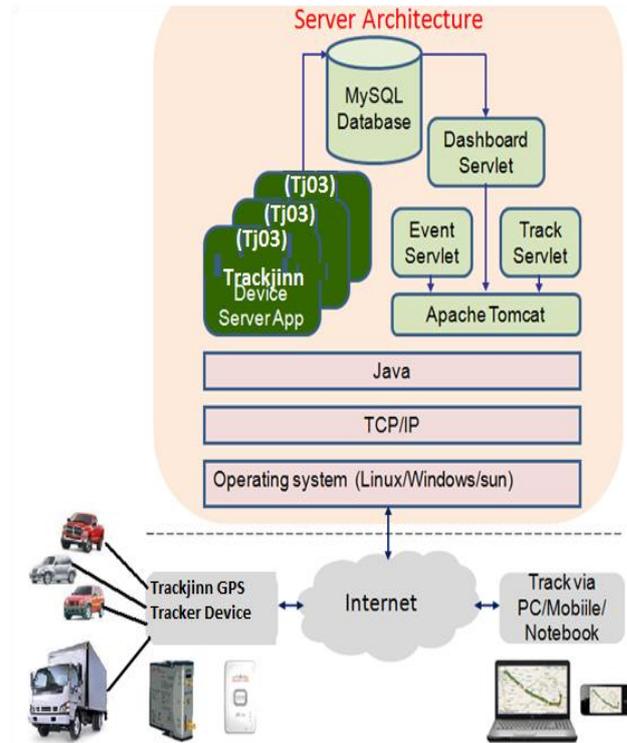


Fig1: Proposed system of Vehicle Tracking System

There are some challenges in developing a smart Transport System –

1. Sustainable tracking is not possible just by increasing the infrastructure available. Considering infrastructure which uses less space and is efficient is a major task to perform.
2. Implementing Vehicle tracking system becomes a big deal when additional features are added to its infrastructure like safety, privacy, large fence area, etc. Changing the traditional methods to completely intelligent tracking system is a total change of the system. The main problems that are hampering this change to materialize are not just technological limits, but conceptual, social, cultural, emotional, political and economic hurdles.

IV.FUTURE WORK

The GPS-based model was applied to a running vehicle tracking service as well as used to simulate a hypothetical public security service. The development and deployment of a GPS-based model is a contribution to the literature survey. Future improvements to the model should include the addition of reports of obstacles, vehicle details, intrusion detection and better algorithms.

V.CONCLUSION

Intelligent Vehicle Tracking System Using GPS on Android Smartphone paper deals with the efficient way of tracking the vehicles and easy communications between two

ends. The geo-fencing technique use provides a better security for the vehicles to travel in a given area. The sensors may perform to the fullest a store data in the information repository. The methods used for storage of data makes it easy to store as well as retrieve the data whenever needed. Nowadays as people are using smart-phone devices which are easy to carry same goes to the system proposed as a simple android application helps the user to register the vehicles and track them whenever needed. It also provides a security to the rental data which is stored neat, clear, and not lost or spilled. Vehicle Tracking using GPS and IoT is one of the emerging research fields. It is still in a plagiarism phase, but is evolving now days and will soon be regarded as a lawful branch of scientific research.

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