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GPS GSM BASED VEHICLE TRACKING

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LOCKING SYSTEM

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Abstract - *This article features a method of designing a GPS and GSM based application. Currently most of the people own vehicle, theft is happening on parking and unsecured places. Safety of vehicles is extremely essential for public vehicles. Vehicle tracking and locking system helps to track the vehicle and locks it as per the instructions given by the owner. The place of vehicle can be searched using the Global Positioning System (GPS) and Global System Mobile Communication (GSM). The system can be interconnected with the car alarm system and alert the owner on his mobile phone. This tracking system is composed of ATmega16 and SIM 908 module. GPS Receiver gets the location information from satellites in the form of latitude and longitude. The Microcontroller processes this information and the information is sent to the owner using the GSM modem. The presented application is a low cost solution for automobile position and status, very useful in case of car theft situations.*

1. INTRODUCTION

In this era of technology security has become a big question in all over the world. ATmega16, SIM908 module have been used as the hardware part. Software part is done using C language which is the programming language. The interconnection of all the features provides flexibility to the user and is more reliable ensuring higher safety and protection against car theft. The system has Global Positioning System (GPS). The GPS will receive the coordinates from the satellites among other critical information. Tracking system is very important in modern world. The system is microcontroller based that consists of a global positioning system (GPS) and global system for mobile communication (GSM). This project uses SIM908 module device which has GPS and GSM on the same module. GPS tracking systems are used to track anyone and anything these days. Technology has rapidly advanced in the past few years and it has become very easy for the average person to use a tracking system. The development of satellite communication technology is easy to identify the vehicle locations. Vehicle tracking systems have brought this technology to the common persons day-to-day life. Today GPS used in many appliances like cars, ambulances, flights and police vehicles are common sights on the roads of developed countries. All the existing technology support tracking the vehicle place and status.

1.1 Objective

The main aim of the project is to design and develop an advanced vehicle Tracking system in the real time environment. The user can lock the vehicle after it is stolen by sending a text LOCK using mobile phone as soon as the system receives the text it will LOCK the vehicle. The other main aim of this project is to send the location of the vehicle to the user as soon as it receives the text LOCK , the system will immediately send the details of the locations like the latitude and the longitude using SIM908 module. So the user can get to know the exact location of the vehicle where it has taken. The user can use the latitude and the longitude which is obtained in the sms to find the location of vehicle pointed out on the Google maps. The main aim of this project is to

lock the vehicle after it is stolen and find the location of the vehicle and to design and implement a microcontroller based GPS/GSM based advanced security system which will secure the vehicle.

1.2 Technique Of Vehicle Tracing System

Vehicle Tracking System can be broadly distinguished into Real Time Location Based System and the prediction system. Real Time Location Based System uses the current location and speed of the vehicle to calculate the arrival time of vehicle and prediction system takes into consideration the traffic pattern on the route to calculate the arrival time of the vehicle. However, here the emphasis is on real time location based system. Techniques for Vehicle Tracking System Real Time Location

Real Time Location Based Systems can also be standalone systems that displays the arrival time of the transit vehicle on the LCD screens that are placed on every stop, through SMS facility, web based application or by using android application using GPRS (General Packet Radio Service).

i. Real Time Location Based Systems uses LCD screens. These screens are placed on every stop, displaying the arrival time of the vehicle using RF (Radio Frequency) transceivers. The location is displayed on the LCD screen along with vehicle number as the vehicle enters the range of reception.

ii. SMS is used over the GSM (Global System for Mobile communication) networks to transfer the vehicle location coordinates. The location information is sent to the central server over the GSM networks using SMS and is stored in the database. The commuter sends the request and receives the information through SMS.

iii. Through the web based application users can track the vehicle graphically. Also the web based systems permits users with different operating systems platforms to easily reach the details with the help of internet access.

i. Vehicle Tracking System using Android application has inbuilt GPS service provided by the Smartphone to get its GPS coordinates. These GPS coordinates are transferred to the central server. The users can retrieve information through android application. Another type of vehicle arrival time system is based on prediction system. It is based on the large amount of collected data.

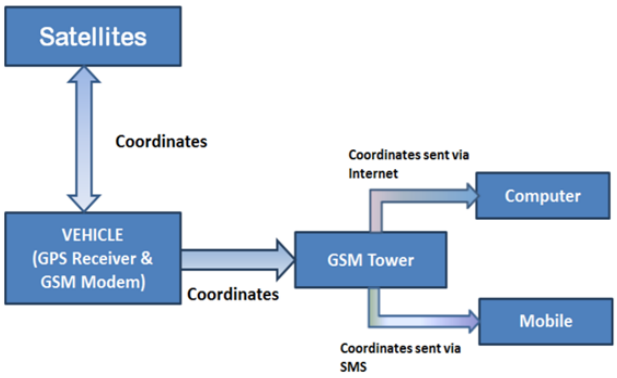

Figure-1: Block Diagram of Vehicle Tracking System

2. CONCLUSIONS

Vehicle tracking system brings large profits due to its fleet management. Better scheduling or route planning can enable you handle larger jobs loads within a particular time. Vehicle tracking improves safety and security both in case of personal as well as business purpose for communication

medium, performance monitoring and increases productivity. So in the coming year, it is going to play a vital role in our day-to-day life. Main motto of the project is to incorporate different types of sensors so that they help in decrease the chances of losing life in such accident which we can't stop from occurring.

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