Abstract - The basic concept of the novel work is to track a vehicle travelling from one place another. The GPS continuously takes input data from the satellite and stores the latitude and longitude values in microcontroller buffer. The GPS element track the vehicle. To activate the GSM module sever has to send a message by which it gets activated. Once GSM gets activated it takes the last received latitude and longitude positions values from the buffer and sends a message to the particular number/server, which is predefined in the program. The system is implemented using GSM (SIM300) and GPS module. The software configuration accomplished by Arduino firmware. 

Keywords- Tracking, GSM, GPS, Arduino

I. INTRODUCTION

The main aim of this system is to provide security for all the vehicle. This system enables the user to observe and track particular vehicle and find out vehicle movement and its past activities. When the vehicle is stolen, the location data from tracking system can be used to find the theft and to inform the police for the further action.

In GPS/GSM system is one of the important system of the project. GPS track the location of vehicle and GSM module send the message to the server. (GPS) Global Positioning system modem requires minimum 3 satellites to calculate the exact location this modem communicates in unidirectional way with microcontroller. Which means it can only transmit data to microcontroller. GPS modem cannot receive any data from microcontroller. In the same way GPS modem does not send data to satellite, it only receive signal from satellite.

This hardware is fitted on to the vehicle which is not visible to anyone who is inside or outside of the vehicle. Thus the system not only tacks the location of the vehicle but also useful to detects the accidents and location of the accident occurred and sends continuously the location data in the form of message to the registered number. And this is how we are providing a safety not only to the vehicle but also to the users.

This new technology popularly called as “vehicle tracking system”

It is also useful for managing the traffic by simply viewing the location of the vehicle and if the accident is indicated the direction of their routes can be changed. So this is how tracking is useful for all the busy countries by controlling all the traffic problems with the help of this system.

II. METHODOLOGY

This project consist of GPS receiver and GSM modem with a microcontroller and the whole device is attached to the vehicle. The GPS system will send the latitude and longitude values corresponding to the position of the vehicle, the SMS will be send to the GSM modem and then to the microcontroller and finally a data will be received in the form of message in the registered mobile number. Also the message will only be received if its matches to the password which is already being
registered. So the owner can only access it and nobody other can use it, and it will only track if it matches to the registered number.
For e.g. if the vehicle is stolen we can easily get its location by simply sending a message i.e. already set in the GSM and the device will send back the response to the registered number and we will easily get its location in the form of latitude and longitude value.

The password of the device can later be changed according to the user. And nobody can see the device who is inside or outside the vehicle.

III. PROPOSE SYSTEM
The block diagram mainly consist of a GPS receiver, crystal oscillator GSM, LED indicator, LCD, RSS 232 interfacing and a power-supply. This system is mainly proposed to design a system which is used for tracking and positioning of any vehicle with the help of GPS (global positioning system) and GSM (Global system for mobile communication).

In this project microcontroller is used to interface various hardware peripherals. It is interfaced serially to a GSM Modem and GPS Receiver. The hardware interfaces to microcontroller are LCD display, GSM modem and GPS Receiver.

In which GSM modem is used to send the position (Latitude and Longitude) of the vehicle from a remote place. The GPS modem will continuously give the data i.e. the latitude and longitude indicating the position of the vehicle and LCD display which displays the current status of the vehicle and the serial converter IC uses RSS 232 protocol to convert TTL level voltage levels into RSS 232 voltage levels.
IV. CIRCUIT DIAGRAM

4.1. Expected Output
Whenever we send “Track Vehicle” to the GSM module. It will send a message of location in the form of latitude and longitude to the registered number.

V. CONCLUSION
Vehicle tracking system makes better fleet management and which in turn brings large profits. Better scheduling or route planning can enable you to handle larger jobs loads within a particular time. Vehicle tracking both in case of personal as well as business purpose improves safety and security, communication medium, performance monitoring and increases productivity. So in the coming 1year, it is going to play a major role in our day-to-day living.
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