

Real Time Vehicular Tracing System using RASPBERRY PI

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Abstract:-With the emerging technological innovations, users are looking for automotive system than the manually operated system. As the number of vehicle users increased, the number of accidents and thefts are increasing. Due to a convergence of multiple technologies usage of Internet evolved in the field of networking, which helps objects to be sensed and controlled remotely. Pi based Embedded System for Vehicle Monitoring, tracking and controlling over internet uses mobile or computer device to monitor, track, and control the vehicle. It can provide tele-monitoring system for inter-city transportation vehicles. This system is integrated with GPS and GSM to provide features like Location information and Real time tracking using SMS. The vehicular module is used to track, observe, and investigate and finds the accident place and intimate to the monitoring station. The proposed design provides information regarding vehicle Identity, speed, and position on real time basis. This information are together by the RASPBERRY PI by using different section and dispatch it to the observing station where it stores the information in database and display it on graphical user interface (GUI) that is user friendly. This system implemented for real time ambulance tracking system. If Ambulance get damaged at anywhere on its route then our system will send message to its nearby hospitals.

Keywords:-Raspberry pi kit, GSM (Global System for Mobile communication), GPS (Global Positioning System), Memory card, SIM, Embedded system.

I. INTRODUCTION

We daily see or read this particular activities that are raising the issue of our security and safety both in private and public industries. So there's necessity of real-time monitoring and monitoring the vehicle also storing and upgrading its database of specific situations. The system that functions as a tracking and a security system have been designed that uses two main underlying concepts. These are GPS (Global Positioning System) and GSM (Global System for Mobile Communication). This system can deal with both pace and security. The VMSS (Vehicle Monitoring and

Security System) is a GPS based vehicle tracking system that is used for safety applications as well.

This is done with the help of the GPS satellite and the GPS module attached to the vehicle which needs to be tracked. The Global Positioning System (GPS) is a satellite-based routing system made up of a network of 24 satellites placed into orbit by the U.S. Department of Defense. GPS was originally intended for military applications, but in the 1980s, the government made the system available for civilian use. GPS works in any climate conditions, anywhere in the world, 24 hours a day. The GPS antenna present in the GPS module receives the information from the GPS satellite and it reveals the position information. This information received from the GPS antenna is sent to the guiding station where it is decrypted. Thus, the complete data related to the vehicle is available at the controlling unit. This information is sent to the owner or to the concerned person using a GSM modem. This GSM modem has an antenna too. The suggested system get observing information from the vehicle like vehicle number (Unique ID), location, speed, Date, Time and store in to the database of Raspberry pi. Due to increase in a number of Internet users in and around the world, vehicle tracking, controlling and monitoring over the internet has advantages over other technology to establish a communication between clients and end user. The locations are reported by SMS message which takes an advantage of wireless technology.

II. LITERATURE SURVEY

A. Vehicle Tracking System

Global Positioning System (GPS) is most widely used for the tracking system. The most common ways to track vehicle is the Global Positioning System (GPS) and Global system for mobile communication (GSM) technology. The real time vehicle tracking system, used for many applications. The use of GSM and GPS technology together to allow the system to track the vehicles which provide most up-to-date information. The locations are reported by SMS message which takes an advantage of wireless technology in

providing powerful transportation. The GSM modem at the control center receives an SMS of the coordinates. This will update the main database and the position of the vehicle is displayed through Google map. Tracking of vehicle has been made simpler with the advent of GPS technology. Real time tracking of many vehicles on app was developed and it makes easy to track many vehicles at a time using the GPS and GSM. . GPS positioning technology plays an important role in positioning, monitoring, and navigation . The combination of GPS and GSM technology enables the user to track/locate the vehicle in ease and convenient manner.

B. Vehicle Monitoring System

Vehicle theft becomes a social real time problem now a day’s . Hence, it’s become necessary to monitor the vehicle and also driver activity in a certain situation to overcome the problems. The Combined technology of GSM and GPS helps to monitor the vehicles speed . GPS is used to get geographical coordinates at real time and GSM/GPRS is used to transmit the vehicle location to the database. A Smartphone application is developed to monitor the location of a vehicle. Android Smartphone is used to monitor the vehicle. Here GPS is used to get the vehicle position and send the data over the cellular network. The designed system is feasible for monitor the vehicle.

C. Vehicle Controlling System

GPS is used to find the location of vehicle and GSM is used to send SMS to send the control signal. GSM network is used to control the vehicle movement i.e. moving forward, backward, Left and Right .for controlling vehicle GSM is used.

III. PROPOSED SYSTEM

We daily see or read this particular activities that are raising the issue of our security and safety both in private and public industries. So there's necessity of real-time monitoring and monitoring the vehicle also storing and upgrading its database of specific situations. The system that functions as a tracking and a security system have been designed that uses two main underlying concepts. These are GPS (Global Positioning System) and GSM (Global System for Mobile Communication). This system can deal with both pace and security. The VMSS (Vehicle Monitoring and Security System) is a GPS based vehicle tracking system that is used for security applications as well.

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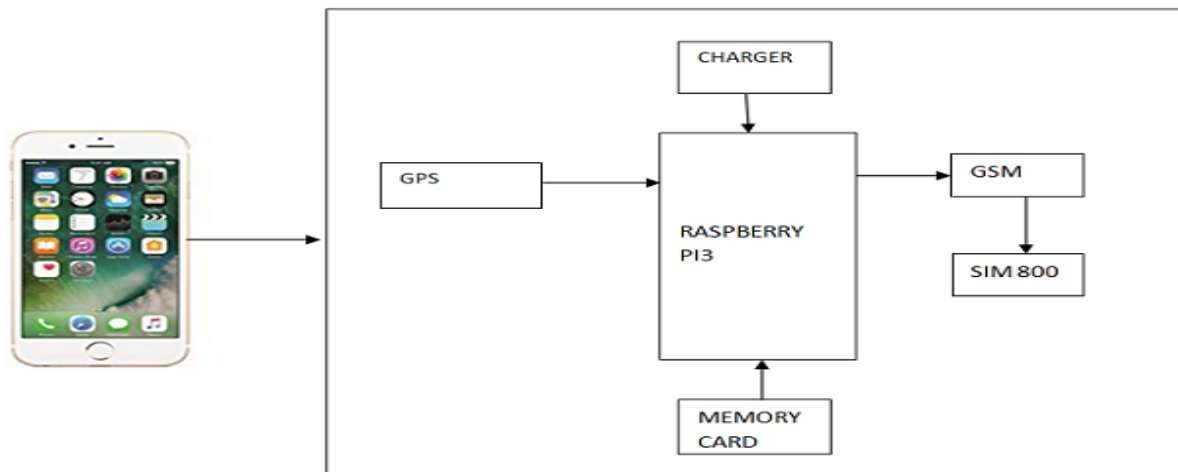


Fig 1: System Architecture

IV. CONCLUSION

The Vehicular System provides information of a vehicle like position through a GPS module and identity of a vehicle to a monitoring station and to a mobile phone according to a definite event stored in a program or a query from a monitoring station. And sends this information in real time to a hospital/police station. The monitoring station display these information on web page for tracking, which may be installed in cargo trucks, cars, motorcycle, and boat. The system can be used in many applications.

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