ISSN 2395-1621

Accident Alert and Vehicle Tracking System

#1Priyanka, #2Sampada, #3Dhanashri, #4Bharati, #5Prof.A.D.Bhosale

1piuuu.yerunkar@gmail.com

#12345Computer Department,Tssm's PVPIT , Savitribai Phule Pune University, Bavdhan,Pune,Maharashtra,India

ABSTRACT

Vehicle accidents are one of the most leading causes of fatality. The time between an accident occurrence and the emergency medical personnel are dispatched to the accident location is the important factor in the survival rates after an accident. By eliminating that time between an accident occurrence and the first responders are dispatched to the scene decreases mortality rates so that we can save lives. One approach to eliminate that delay between accident occurrence and first responder dispatch is to use An Accident Alert and Vehicle Tracking System, which sense when a traffic accident is likely to occur and immediately notify emergency occurred. In this paper, that system is described the main application of which is early accident detection. It can automatically detect traffic accidents using vibration sensors and immediately notify a central emergency dispatch server after an accident had occurred using GPS coordinates. Along with that data it will send ambulance which is near to that location. This system uses the things i.e. Raspberry Pi, Vibration Sensors, GPS and GSM modules to detect traffic accidents.

ARTICLE INFO

Article History

Received :24th May 2016

Received in revised form :

26th May 2016

Accepted : 28th May 2016

Published online :

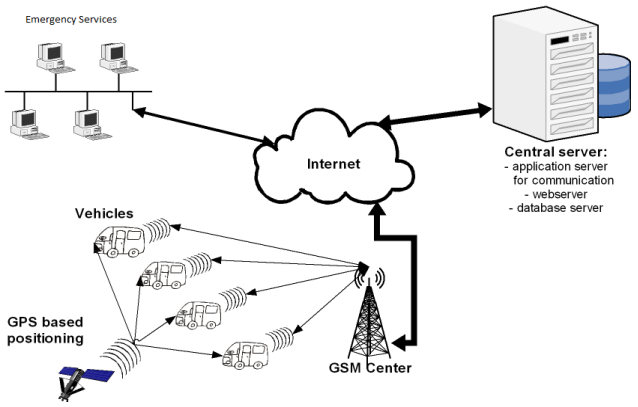
30th May 2016

I. INTRODUCTION

The high demand of vehicles has also increased the traffic hazards and the road accidents. Life of the people is under high risk. This is because of the lack of best emergency facilities available in our country. An automatic alert system for vehicle accidents is introduced in this paper. This design is a system which can detect accidents in significantly less time and sends the basic information to first aid centre within a few seconds covering geographical coordinates, the time and angle in which a vehicle accident had occurred. This alert message is sent to the central emergency dispatch server in a short time so that the emergency dispatch server will inform to the ambulances which are near to that location, which will help in saving the valuable lives. A Switch is also provided in order to terminate the sending of a message in rare case where there is no casualty, this can save the precious time of the ambulance. When the accident occurs the alert message is sent automatically to the central emergency dispatch server. The message is sent through the GSM module and the location of the accident is detected with the help of the GPS module. The accident can be detected precisely with the help of vibration sensor. This application provides the optimum solution to poor emergency facilities provided to the roads accidents in the most feasible way.Vehicle tracking system main aim is to give Security to all vehicles. Accident alert system main aim is to rescuing people in accidents. This is improved security systems for vehicles. The latest like GPS are highly useful now a days, this system enables the owner to observe and track his vehicle and find out vehicle movement and its past activities of vehicle. This new technology, popularly called vehicle Tracking Systems which created many wonders in the security of the vehicle. This hardware is fitted on to the vehicle in such a manner that it is not visible to anyone who is inside or outside of the vehicle. Thus it is used as a covert unit which continuously or by any interrupt to the system, sends the location data to the monitoring unit. When the vehicle is stolen, the location data from tracking system can be used to find the location and can be informed to police for further action. Some Vehicle tracking System can even detect unauthorized movements of the vehicle and then alert

the owner. This gives an edge over other pieces of technology for the same purpose. This accident alert system in it detects the accident and the location of the accident occurred and sends GPS coordinates to the specified mobile, computer etc.

II. SYSTEM ARCHITECTURE



In this architecture give the overall view of vehicle tracking system.In vehicle fit the GPS module and sensors to sense abnormal behaviour of the vehicle . Here we are use to the vibration sensor sense to vibration in accident, temperature sensor to sense the temperature in case fire of accident and accelerometer.

Here we have to use cloud as central database server that convey the message GPS module to the hospital management.

Continuously provide the internet service to access GPS location.

III.GPS

GPS abbreviates global positioning system and this is used to detect the latitude and longitude of the particular position and it also shows the exact time. It detects these values anywhere on the earth. In our project it plays main role and it is the main source of the latitude and longitude of the vehicle to know the accident occurred location, or even for theft tracking of the vehicle. This gadget gets the coordinates from the satellite for each and every second. This device is the main component of vehicle tracking project.

Figure: GPS modem

Vehicle tracking system working

This system takes input from GPS and which goes into rs232. This Rs232 sends data into max232 and it converts the data format and sends it to the Rx (receiver pin) of microcontroller and this microcontroller stores this data in USART buffer and the data stored is sent again through Tx pin into max232 this max 232 sends the data into GSM via rs232. This is how vehicle tracking works using GSM and GPS. The lcd interfaced to the microcontroller also shows the display of the coordinates. This lcd display is only used to know the working condition of the vehicle tracking system.

Accident alert system working

Accident in the sense it could be collision of two vehicles or fire accident inside the vehicle. These shock sensors are attached to the car on all sides of the vehicle and they all are connected to the OR gate .OR gate is used because to detect at least one sensor is high .the output from the or gate is connected to the interrupt pin of microcontroller and whenever this pin 12 is high the micro controller sends the message about the accident.

IV. HARDWARE COMPONENT

1. Raspberry-pi

The Raspberry Pi is a low cost, creadit-card size computer that's plug into computer moniter, standard keyboard and mouse. It is capable little device that enables people of all ages to explore computing and learn how to program in language like python.

2. GPS Module

A GPS navigation device is a device that accurately calculates geographical location by receiving information from GPS satellites.

GPS devices may have capabilities such as:

1. maps, including street maps, displayed in human readable format via text or in a graphical format.
2. turn-by-turn navigation directions to a human in charts of a vehicle or vessel via text or speech.
3. directions fed directly to an autonomous vehicle such as a robotic probe.
4. traffic congestion maps (depicting either historical or real time data) and suggested alternative directions,
5. information on nearby amenities such as restaurants, fueling stations, and tourist attractions

.

V. CONCLUSION

Vehicle Tracking System is recognise the accident location with the help of GPS module and give alert to the ambulance system in hospital.

Decrease the mortality rate in accident cases and time management policy are increase.

REFRENCES

[1] Watthanawisuth, N. "Wireless black box using MEMS accelerometer and GPS tracking for accidental monitoring of vehicles", IEEE conference in Jan, 2012

[2] Hoang Dat Pham, "Development of vehicle tracking system using GPS and GSM modem" IEEE conference in Dec,2013

[3] Shuming Tang, "Traffic-incident detection-algorithm based on nonparametric regression" IEEE conference in March,2005

[4] Fogue, M. "Automatic Accident Detection: Assistance Through Communication Technologies and Vehicles", IEEE conference in August, 2012

[5] L. Chuan-zhi "Method of Freeway Incident Detection Using wireless Positioning," in Proceedings of the IEEE International Conference on Automation and Logistics, 2008, pp. 2801 - 2804

