ACCIDENT DETECTION AND REPORTING SYSTEM USING GPS AND GSM

Prof. Vikas Desai.

Prajakta Hoval, Shruti Kulkarni, Pooja Lone

AISSMS IOIT, Pune

prajaktahoval19@gmail.com, shrutikulkarni0505@gmail.com, poojalone08@gmail.com

Abstract

Speed is one of the basic reasons for vehicle accident. Many lives could have been saved if emergency service could get accident information and reach in time. Nowadays, GPS has become an integral part of a vehicle system. This seminar analyses the capability of a GPS receiver to monitor speed of a vehicle and detect accident basing on monitored speed and send accident location to an Alert Service Center. The GPS will monitor speed of a vehicle and compare with the previous speed in every second through a Micro-controller Unit. Whenever the speed will be below the specified speed, it will assume that an accident has occurred. The system will then send the accident location acquired from the GPS along with the time and the speed by utilizing the GSM network. This will help to reach the rescue service in time and save the valuable human life

I. Introduction

In present days the rate of accidents has been increased rapidly. Due to employment the usage of vehicles like cars, bikes has been increased because of which accidents are caused due to over speed, due to unavailability of advanced techniques, the rate of accidents can't be decreased. To reduce the accident rate in the country this introduces an optimum solution. Automatic alert system for vehicle accidents the main objective is to control the accidents by sending a message to the registered mobile using wireless communication technology. When an accident occurs the message is sent to the registered mobile through GSM module in less time. Arduino is the heart of the system which helps in transferring the message to different devices in the system.

GPS system will help in finding the location of the accident spot. The system will check whether an accident has occurred and notifies to the nearest medical centers and registered mobile numbers about the place of accidents using GSM and GPS modules. The location can be sent through tracking system to cover the geographical coordinate over the area. This system is also used in the trains there they use the CAN BUS protocol. Ultrasonic sensors generate high frequency sound waves at regular time intervals. These propagate

in the air the velocity of sound. If they strike the object then they are reflected back as echo signal to the sensor. This reflected echo signal further process to decrease the vehicle speed.

Ultrasonic are a great solution for clear object detention. This design, is a system which can detect accidents in significantly less time and sends the basic information to first aid center within a few seconds covering geographical coordinates, the time and angle in which a vehicle accident had occurred.

> ➤ **Block Diagram**

implementation of hardware (system architectural diagram)
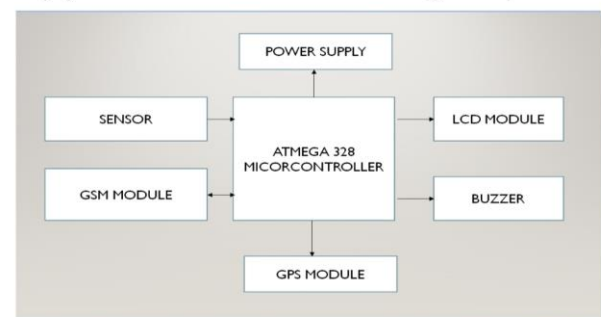
➢ **Proposed system**

This Project present an automatic localization system using GPS and GSM Service

The above given is the system model. This intelligent accident identification and location display system will be fitted the cars which will work as-

Initially the system will turn on with turning on of the car. Once the car starts moving the sensors will detect motion and location of the car will be saved and transmitted over the gps/gsm system.

If the car meets with an accident that is within the x y plane of the sensor then the sensor would generate signal and send it over the gps/gsm system to the emergency system that will include the rescue team, nearest hospital, nearest police station, family member, etc.

Once this message and the location is received by the emergency system within a shorter period of time, the respective officials will reach at the location provided by the gps module and aid would be provided.

The 2 stages are if the obstacle is detected ta the min distance then the sensor would only generate a message and display to us. But if the obstacle is detected at the ma range then a message will generate also the engine would be turned off instantly at the spur of the moment.

Thirdly if the car meets with an accident but doesn't fall within the x y planes but accident has taken place then in this case tilt sensor will act as the signal provider to the arduino.

Thus this would save lives and medical aids if needed would be provided easily and in a hurry.

III. Advantages & Application

Advantages :-

The advantages of our project are as mentioned below.

1. The immediate medication will be provided to the accident victims in remote areas.

2. Mobile number can be changed at any time.

3. The system is not police dependent.

4. Monitor all hazards and treat

Application:-

These system are used for operational functions such as routing security dispatched and collecting on-board information.

These are also used for fire detector in large vehicle like train bus etc.

The application for this project are in military, navigation, automobile, aircraft, fleet management, remote monitoring, security syste etc.

IV . CONCLUSION

Speed is one of the most significant causes of an accident. Nowadays, GPS receiver has become an integral part of a vehicle. Besides using in other purposes, the GPS can also monitor the speed and detect an accident. It can use a very cheap and popular GSM modem to send the accident location to the Alert Service Centre. It can also send the last speed before accident which will helps to assess the severity of the accident and can initiate a voice call. Beside the automatic detection system, the vehicle occupant will be able to manually send the accident situation by pressing the Manual Detection Switch. A rescue measures in time with sufficient preparation at the correct place can save many life. Thus, the proposed system can serve the humanity by a great deal as human life is valuable

V. **References**

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