

Fortuity Notification Using Ardu-Analyser

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Abstract: Due to the technology revolution people don't care about what's happening around them they keep on moving without any care because of which we designed a system to detect accident. This is used to detect the accident automatically and victim analysis plays an important role to reducing the time laps which will reduce the death rate. As the name indicates this project is about advanced technologies in cars for making it more intelligent and interactive for avoiding accidents on roads. By using ARM7 this system becomes more efficient, reliable & effective. As now a day's mobile is common electronic gadget that is present with everyone and this problem can be solved by it only. By the short message service (SMS) on of the fetcher of mobile will help to solve this problem. There are only few system which is used to detect accident only and this system is most common in the luxury cars. This module consist of real time sensor which will not only detect accident but also reduce the speed of the cars in the public place The main components of the system consist of number of real time sensors like gas, eye blink, alcohol, fuel, impact sensors and a software interface with GPS and Google Maps APIs for location

I. INTRODUCTION

In India the road facility and the quality of road are improper in some place like hilly region and in village where more accident are happening. India faces the highest number of accidents and accidental Fatalities in the world. The maximum number of accidents are reported from the transport sector i.e. road as well as railways.

In fact, motor vehicle accidents are the most common cause of death in the United States more than cancer or heart attacks. When we think about the serious accident, it could change your life- and not for the better. Trucks and two-wheelers were responsible for over 40 percent of accident related deaths in India. Besides road accidents, accidents taking place at the workplace also pose a formidable risk to employees' safety. It is hard to get reliable data of occupational diseases and workplace accidents in India due to lack of specific system for reporting and recording. This is because the notification system are only placed in costly Cars and middle class people will don't even know of this system. The main motto of this system is to provide a low cost notification system for every cars in India.

According to this system, whenever a person sits in driver seat of the vehicle, the system checks for the Following parameters with the driver. The Alcohol sensor, which checks if the person has consumed alcohol or not. The eye sensor makes sure that the person in driver seat does not falls asleep. In case of any accident, the vibration in vibration sensor increases beyond the limit and information is sent to GSM module. The GSM can send message to respective authority. Thus this system ensures

the life security. Another advantage of this system is to reduce the speed when it reach the area like school and college

I. SYSTEM DESIGN

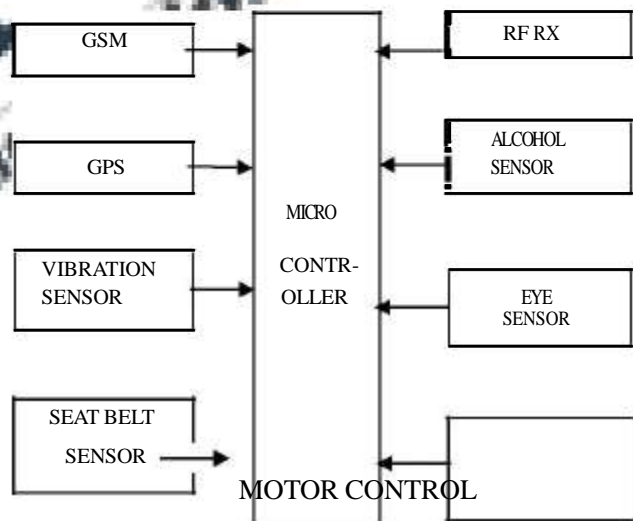


Fig 1.1-Block Diagram proposed method

The heart of system is MICROCONTROLLER which will access the data. In our

project we will use 'ARM' controller. The proposed method consist of various sensor which will not only used to notify but also to stop the accident before it happen. This method has already been done but it will not notify all accident and no circuit is used our model will tell the driver to slow down if necessary in the public place. As given in (Fig 1.1) we had included more sensor to reduce the amount of damage from accident

II. HARDWARE DESCRIPTION

We included various hardware module in order to prevent accident one of them is the speed detector which is used to control the speed of the car automatically till it gone out of the zone the working of this is given by the Rf transmitter and receiver

Transmitter design:

Transmitter module is placed in the specific zone. Transmitter and receiver both operate at a frequency of 430 MHZ. transmitter receives data serially and sends the data to the receiver continuously. The RF transmitter is placed in zones like school zone, college zone, U turn. When the vehicle reaches those zones, it will automatically reduce the speed to 20 KM. When the vehicle leaves the zone it will regain its speed. The receiver module is placed in the vehicle. When the signal from transmitter is received it will decode the encoded data and indicate the controller to reduce or limit the speed of the vehicle when the vehicle leaves the zone it will regain its speed. The receiver module is placed in the vehicle. When the signal from transmitter is received it will decode the encoded data and indicate the controller to reduce or limit the speed of the vehicle.

Receiver design:

The receiver prototypic design. The RF module consists of RF transmitter and RF receiver. The RF module has an encoder in transmitter and decoder in the receiver. The encoder is used for encoding the parallel data for transmission while the reception is decoded by decoder in the receiver. The RF receiver is connected with PIC microcontroller. The RF receiver will be always in listening state, if it receives any signal of same frequency as of receiver, it will automatically indicate the controller which in turn reduces or limits the speed of the vehicle until the vehicle leaves that particular zone. From this, the accident in school and college zone will get reduced. The accelerometer is connected with microcontroller and placed in vehicle. If any accident occurs in the highways, the vibration sensor will indicate the controller and controller will in turn transmit the message to the hospitals and police stations through GSM technology. The message will contain the details of vehicle number, place of accident which was gathered using GPS. The function of GPS is the most promising technology to acquire the position information in outdoor environments. In recent days most of the accident

occurs due to drunken driver and improper use of seat belt. Before the vehicle starts the driver will be checked by the alcohol Sensor. Also if the driver is not wearing the seat belt it will also indicate it and also will not allow the driver to move the vehicle.

Alcohol Sensor:

This alcohol sensor is suitable for detecting alcohol concentration on your breath, just like your common Breathalyzer. It has a high sensitivity and fast response time. Sensor provides an analog resistive output based on alcohol concentration.



Fig 1.2 Alcohol gas sensor-MQ-3

This will find weather the driver is drunken or not if there is any alcohol content in the car it will notify and stops the car so that the accident can be reduced

Features of alcohol sensor

- Operating power will be 5v DC or AC
- Operating temperature will be 10 to 70 degree
- Size of the module is 16.8mm in diameter and height will be 9.3mm without pins

GSM Module

It is similar to the mobile phone without any display the transmission from this system can be done by giving a SIM card which will act as the mode of transmission which will send the information to the specified number. The GSM is not only used for voice communication but it will use short message service and GPRS to transfer data from the given module to the specified number It operates at either the 900 MHz or 1800 MHz frequency band, in addition there are two others frequency bands but most common are mentioned above. The transmission rate of GSM is 270 kbps. The GSM modem utilized the GSM network to send the location of the accident. The modem can be controlled by the microcontroller.



Fig-1.3-GSM Module EFCOM

The above module is used for GSM communication which is of 4 Frequency GPRS/GSM Module-EFCOM Pro is an ultra-compact and reliable wireless module. It is a breakout board and minimum system of SIM900 Quad-band GSM/GPRS module. It can communicate with controllers via AT commands

Features of GSM Module

- power supply will be of +5v
- it can be used for ARM/arduino/FPGA
- low power consumption
- the size of this system will be 60mm*53mm

III. INTERFACING MODULE

By interfacing the given module in the microprocessor we can continuously scan for various parameter of cars like fuel, engine temperature speed, steering position, eye blink and alcohol sensors, as soon as impact id detected more impact related sensors comes in pictures. The μC stores all this data in the internal memory.

If the driver is found to have alcohol in the breath, it warns and then turns the ignition off and hence possibility of accident is avoided. Also we have designed an eye blink sensor which continuously monitors the number of times the eye blinks, if the eye blinks count decreases that means the driver is sleepy, in that case a buzzer is operated.

If accident happened by using impact sensors we are able to found out on which side the impact occurred. After collecting all information which is stored in internal memory, μC send this data to base or surveillance unit via SMS using GSM modem. On the base side we receive the data such as engine temperature, fuel, speed, eye blink status, alcohol level, impact etc. and also the GPS coordinates on the online Google maps.

The PC unit has the online VB software which graphically shows all the data to the analyst so that the reasons of crash or accident can be understood better and the crash is verified

IV. SOFTWARE DESCRIPTION:

The software used is Keil μ -Vision is a Windows based front end for the C Compiler and Assembler. μ -Vision IDE (Integrated Development Environment) allows developers to create embedded applications using the Keil development tools. Keil Software provides you with software development tool for the 8051 family of microcontrollers with these tools; you can generate embedded applications for the multitude of 8051 derivatives. Proteus VSM allows professional engineers to

run interactive simulations of real designs, and to reap the rewards of this approach to circuit simulation. Proteus 6 Professional separated into two main components, which are ISIS 6 Professional and ARES 6 Professional. ISIS 6 Professional mainly involved on circuit designing and simulation. Code for this system is written in assembly language in Keil. Then we connect our circuit on Proteus and burned the code from Keil on microcontroller and simulate the circuit in Proteus for verification that the system is working properly or not.

V. PROPOSED METHOD:

We have proposed a method which will reduce the accident rate and save life. From all the above study there are different kind of technologies that are present for the accident detection among them enhanced accident detection and victim analysis is most preferable even though there are few more feathers to be added. Prevention is better than cure. So a system that has pre analysis about the driver can prevent the accidents. Fig 1 represents the modified operation flow of Accident Identification system for Indication of Victim Status. In order to do this system should have alcohol detector and by using alcohol sensors sensing of drunk state of the driver if it is in proper way next seat belt sensing module will come into appearance then it will sense that weather the seat belt is used or not. If all these conditions are ok then vehicle get start.

Once vehicle get started GPS system will be continuously monitor for the accident prone area. If vehicle entered into that area it will alert the driver that it is an accident prone area and at the same time like school gone it gives an alert to the driver that to be careful while driving. If an accident is caused then the vibrating sensors that are present in the system get sensed and by using GPS locations is tracked. And then it get try to analyze the condition of the victim that rate of heart beat, coma stage and body temperature by an SMS. Then SMS is sent to emergency center and to an alternative mobile number which was given in the modem this help message consist of the exact location of the crash and the source for accident. This module also had motor control which will reduce the speed of the motor if the driver consumed any alcohol product.

The main motto of this paper is to save life at very low cost by introducing a system that will help to find accident before it happen and to control it.

CONCLUSION:

The road accident is mainly due to the drivers fault by not taking this serious and causing danger for public by drunk and drive. By the help of this design we can help people from the accident before it happen this can be achieved by the help of various sensor which are placed it the setup which will not only save life but also the cost of

the project. Our life is more important than money once our life gone even money can't buy it so people must take this serious and they need to use this notification system to save life

REFERENCE:

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- http://en.wikipedia.org/wiki/GPS_tracking_unit

