

Automatic Accident Notification System In Vehicles

Mr. Ramesha K S¹, Dr. C. Mallikarjuna²

^{1,2}Dept of Industrial Automation Engineering

²Associate Professor, Dept of Industrial Automation Engineering

^{1,2}VTU Regional Centre, Mysuru, Karnataka

Abstract- Now a days as the population grows, the number of vehicles increases, but accordingly the vehicle crash rates also accelerated quickly. Despite the fact that accident is minimal, the individual will die due to huge blood loss lack of first-aid treatment and the late reach of the ambulance on spot. If this technique is executed, then over seventeen lives can be safeguarded per hour. This task is utilized as automated crash detection and information system, by utilizing this applications human life is secured and the theft vehicles location traced effectively by using GPS module.

Keywords- Controller unit, GSM device, GPS module, Sensors and Indicating devices.

I. INTRODUCTION

Seventeen people die every hour in road accidents in India according to The Indian Express intelligence report of 2016. It means more than 400 people lose their lives daily driving. The report exposed that 46.3% passed away in road accidents were young {between involving the age of 18 to 35 years, and 83.3% are of working age group of 18 to 60 years. The major reasons for the accidents are rash driving, over speed and drink and driving.

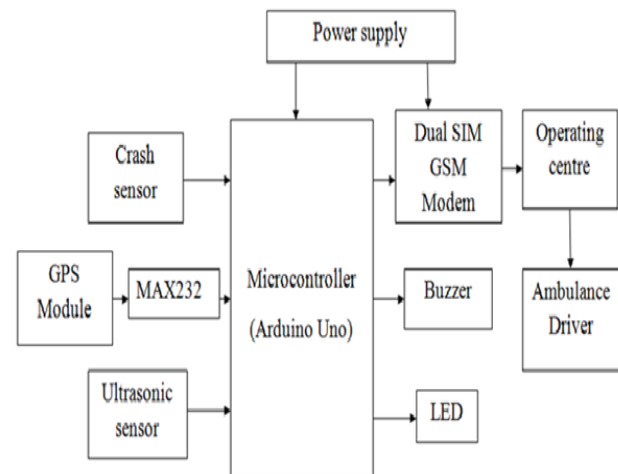
To lessen the life of individuals dying on road, the recommended system sends SMS to the ambulance operating link which is linked to all the ambulance drivers through Global Information System (GIS) and the ambulance will meet place immediately and saves life. Crash sensor used for discovering vehicle accident or any vehicle crash and transmits SMS to the close by Ambulance driver by using GSM modem. GSM is a dual SIM device, it will call, send SMS to the Ambulance operating hub during accident.

The main aim of this system is to deduct the fatality of human because of crashes on road by mailing regular SMS to the ambulance and so can save human life. This serves {the security to patient and serving them during the occurrence of accident is the key role plays in this task.

With this venture we are using GSM and GPS navigation modules, these components helpful for tracking the vehicles when they are robbed or theft. And this project as an

features of vehicle accident recognition, information and vehicle tracking during theft and helps in recovering the theft vehicles. This task is easy to use and less costly.

II. BLOCK DIAGRAM



III. BLOCK DIAGRAM DESCRIPTION

i. Arduino Uno Microcontroller:



Arduino Microcontroller is brain of the system. {This is a microcontroller panel predicated on the ATmega328. It really as 28 pins with 14 digital I/O pins, from it 6 for PWM outputs and 6 dedicated for analog inputs. The Uno is recent group of controller boards. It includes all the helping materials, the program loading is performed by simply hook up this to computer with USB cable connection. This can be run by using either AC to DC adapter or electric battery or

power supply. It features the Atmega8U2 designed as USB to serial converter. The advised voltage runs from 6 to 20 volts.

ii. GSM modem:



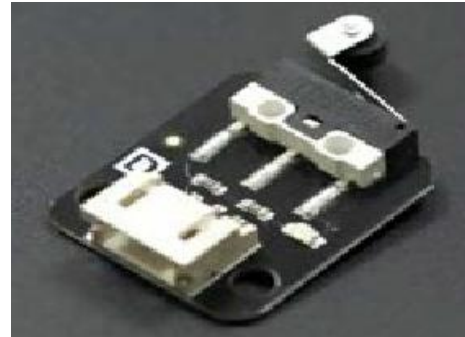
The component used is SIM900A with Dual Band GSM/GPRS engine unit. It functions at a rate of recurrence runs from 900 to 1800MHz. The modem attaches to Laptop or computer as well as controller mother board through a RS232 cable connection. The baud rate is 9600 to 115200. Modem manages based on the program, the instructions must start with AT directions. Where AT means "Attention". GSM working is comparable to cellular phone, but it generally does not have keypad and screen to interface with an individual. Through the use of GSM we can receive and send SMS and phone calls and can gain access to internet.

iii. GPS Module:



Questar GPS component is employed} in this job for seeking the spot properly by its longitude and latitude. The voltage runs from 3.8 to 5Volts. It includes} 56 parallel programs and 4100 search bins to provide fast satellite tv indication fetching and little set up time. USB serial software is provided for the connection. It is employed in the functions which requires good performance, fast indication fetching, less financial and the least risk. Applicable in the domains of Satellite navigation systems, Vehicle tracking, Property tracking and } vehicle recovery.

iv. Crash sensor:



In this framework we utilized SEN0138 R Crash sensor. The crash sensor is a consistently working miniaturized scale switch or an electric switch which is incited by applying a little measure of physical power. It is generally pertinent in the fields of Electrical circuits, Machineries, Industries and in vehicles. It has just 3 pins one is for computerized yield, one for Vcc and other for Ground. Airbag sensor takes a shot at the premise of this sensor as it were. It is utilized for detecting any mishap on crash on the vehicle. When this sensor activated it sends message to the inside through GSM.

v. Ultrasonic sensor:



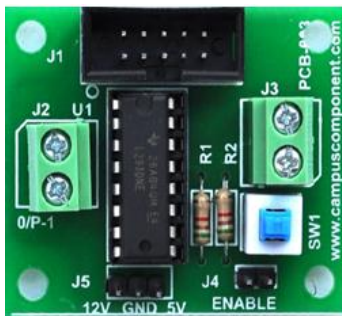
HCSR04 Ultrasonic sensor is utilized as a part of this undertaking as deterrent sensor or a range sensor. The extending separation of this module is from 2cm to 400cm. It as 4 pins: Vcc, Gnd, Trigger and Echo. Trigger is the yield flag created from the sensor, it goes every which way and when it hits or sense any protest or vehicle on their way, it considers it as a hindrance and sends a flag back to the controller and this flag is called as Echo flag. It works at 5V DC.

vi. BO motors:



BO remains for Battery Operated DC engine for speed control. This gives an elite PWM yields at three diverse voltage levels 12V, 24V and 36V individually with speed control. It is utilized to give smooth variable speed capacity to versatile types of gear.

vii. Motor driver module:



The L293D engine driver module is utilized to furnish an opportunity to interface with different applications. It works as Current enhancer, it acknowledges the low present and gives high yield current. This is acquired with a decent quality Printed Circuit Board (PCB).

viii. Buzzer:



Signal is utilized as a sign gadget. It creates a signal sound to alarm vehicle driver that some hindrance is going ahead the path to the vehicle and educates him to back off or stop the vehicle to maintain a strategic distance from the vehicle crash and human passing. Its made up of Noryl material with a fixed structure, and is Black in shading.

ix. LED:



Light Emitting Diode is likewise utilized as sign gadget, it offers flag to the driver by squinting the light when it gets any flag from the ultrasonic sensor.

IV. METHODOLOGY

In this framework, if a mishap happens then crash sensor in the vehicle detects vehicle crash and sends programmed message and advises to the microcontroller that the mischance has happened and the GPS modem consistently gets the co-ordinates by its scope and longitude and gives the answer to microcontroller, at that point the microcontroller sends the data brought from the GPS modem through the GSM modem to the working center and break down the spot and offers data to the close-by rescue vehicle driver through working focus so the emergency vehicle can achieve the mishap scene in the blink of an eye and spares human life. Ultrasonic sensor gives the sign of mischance through Buzzer and LED. This can be additionally utilized as an Accident knowledge framework.

V. CONCLUSION

By executing this undertaking, we can decrease and keep away from the rate of mischances by detecting obstructions out and about by the impact of range sensor and it sends flag to vehicle driver by sign gadgets, for example, ringer and LED.

This stops the vehicle before it hits that impediment. Despite the fact that the mischances occurs by some different structures, the crash sensor is activated to send SMS to rescue vehicle working focus and through GPS it finds the correct place and teaches the closer emergency vehicle driver to achieve the spot at adjust time to spare the life of a casualty.

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