

## **An eye blink sensor and BS4 are used in a GPS, GSM, MEMS, and Arduino-based vehicle accident detector and messaging system.**

Ms. B.Nanthenidevi,M.Priyadharshinika

Assitant professor  
krishnasamy college of engineering andtechnology,cuddalore.

### **ABSTRACT**

Technology that is always getting better has made our daily lives easy. In the same way that every coin has two sides, technology has both pros and cons. There are more car crashes now because of better technology, which kills a lot of people. Our country doesn't have very good emergency services, which makes the problem worse. We are going to solve this problem with our project. Our project says that if a car has an accident, a monitor on the car will quickly notice it and send a message to the computer. A GSM modem is then used by the microcontroller to send the warning message to a police control room or relief team. The GPS will include the location in the message. Along with the warning message, the location of the accident will also be sent to the victim's family. In case there are no injuries, the driver can end the ALERT message by using a switch in the car. This will help the relief team save time. With the help of a monitor and a microprocessor, our project can help find the accident very accurately. As an example of how things could be better, we could add a portable webcam that would take pictures of the accident scene

and help get the right help to the victim as soon as possible. It can connect to both a car's safety system and a bomb monitor.

### **INTRODUCTION**

The advent of technology has also increased the traffic hazards and the road accidents. Due to the lack of best emergency facilities available in our country the lives of the people are under

high risk. An automatic alarm device for vehicles is introduced in this paper which sends the basic information to the medical rescue team within a few seconds of an accident. This device can detect accidents and sends an alert message to rescue teams in significantly less time which will help in saving the lives of the people. The alert message contains the geographical coordinates, time and angle in which the accident has occurred. In cases where there is no casualty the message can be terminated with the help of a

switch in order to avoid wasting the valuable time of the rescue team. When an accident occurs it is detected with help of a sensor which activates the device, the sensor gives its output to the microcontroller.

The microcontroller sends the alert message automatically to the police station and the relatives of the person. The message is sent through the GSM module and the location of the accident is detected with the help of the GPS module. Hence with this project implementation we can detect the position of the vehicle where the accident has occurred so that we can provide the first aid as early as possible.

## **METHODOLOGY**

### **WORKING**

A sensor will sense the occurrence of an accident and give its output to the microcontroller. Here a button sensor is used for detection which will get pressed when the vehicle meets with an accident. ii. A buzzer is present in this system with starts beeping indicating that the system is now

activated.

iii. The GPS detects the latitude and longitudinal position of the vehicle. It is essential to locate the position to provide medical assistance.

iv. The phone numbers are pre saved in the EEPROM by the user. These numbers can be changed at any point of time.

v. The microcontroller sends an alert message to these pre saved numbers using the GSM module. Any message can be pre entered in the system by the user.

vi. A LCD screen displays the status of the output.

vii. In case there is no casualty, the sending of the message can be terminated with the help of a switch. The switch will restart the microcontroller and its function will start from the beginning.

## **2.2 GSM- Global System for Mobile Communication**

GSM is an open, digital cellular technology used for transmitting mobile voice and data services. The GSM system is the most widely used cellular technology in

use in the world today. It has been a successful cellular phone technology for a variety of reasons including the ability to roam worldwide with the certainty of

being.

operate on GSM networks. It is also highly economic and less expensive .

**FIGURE:**

**GSM MODULE**



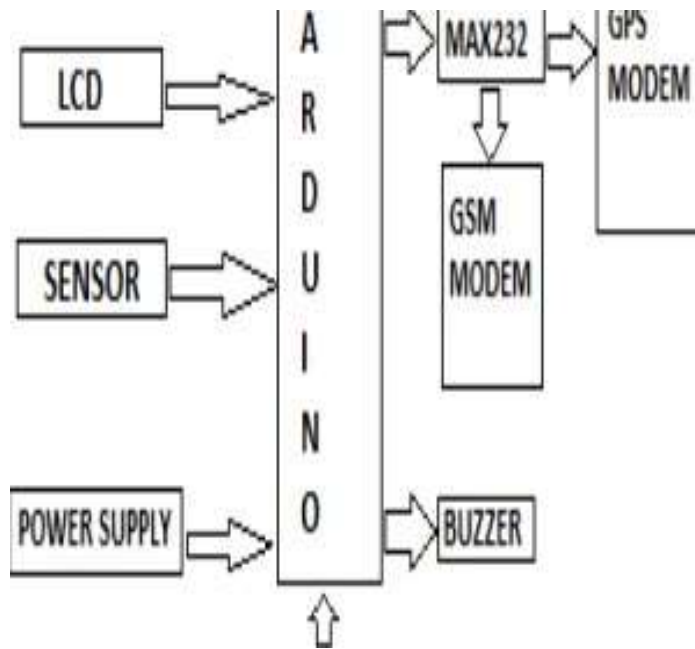
## **HARDWARE DESCRIPTION:**

I Eye blink sensor: This project helps in controlling accidents due to unconsciousness through Eye blink. Here one eye blink sensor is fixed in vehicle where if  
iii. .

driver loses consciousness, then it is indicate through alarm.

ii. Bharat stage: It is used to detect the collision selection and avoid air pollution

## **BLOCK DIAGRAM:**



i. **SENSOR:** A button sensor is used here as accident detection sensor. This sensor is pressed when an accident occurs which activates the device. The sensor sends a message to the microcontroller.

ii. **MAX232:** The MAX232 is a dual transmitter/dual receiver that typically is used to convert the RX, TX, CTS and RTS signals. It is an integrated circuit which converts the signals from the RS232 serial port to the proper signal which are used in the TTL compatible digital logic circuits

iii **BUZZER:** A buzzer is

an electrical device that makes a buzzing noise and is used for signaling. The buzzer beeps when an accident occurs to indicate that the device has been activated.

iv . **EEPROM:** The phone numbers of police and relatives can be stored in EEPROM by the user which can be changed anytime. The data stored will retain even if the power is off for long time.

v. **GPS:** The GPS detects the latitude and longitudinal positions of the vehicle. It is used for both tracking and navigation, GPS receiver can pinpoint the location

using a process called trilateration.

vi. GSM: The GSM sends the message with the location to the pre saved numbers. It is also used to control and monitor the transformer load from anywhere by sending a message.

vii. LCD: The LCD screen is used to display the operating

instructions and status of the output.

viii. RESET: The reset button is used to reset the microcontroller at any stage of work. It can be used to terminate the sending of the message. If the reset switch is pressed, the microcontroller restarts and the function will start from the beginning



## GPS TRACKING SYSTEM

### ADVANTAGES

- i. Provides security against term
- ii. Monitors hazards and threats.
- iii. Alerts police and medical units about accidents.
- iv. Simple design and can be interfaced with other systems.
- v. Easy to operate by the user.
- vi. Reliable system.
- vii.

## APPLICATIONS

- i. **Stolen Vehicle Recovery:** In case of theft, the vehicle can be tracked by using vehicle positioning system. The GPS system allows the tracking of vehicle from anywhere
- ii. **Airbag System:** This system can be interfaced with vehicle airbag system for safety. When an accident occurs both the systems will be activated for the safety of the victim.
- iii. **Bomb Detection:** This system can be used for bomb detection by connecting it to a bomb detector. The buzzer can be used to alert the presence of a bomb in the vehicle.
- iv. **Fleet Management:** When managing a fleet of vehicles, knowing the real-time location of all drivers allows management to meet customer needs more efficiently. Whether it is delivery, service or other multi-vehicle enterprises, drivers now only need a mobile phone with telephony or Internet connection to be inexpensively tracked by and dispatched efficiently

## CONCLUSION

This method is the best way to fix the problem of not having enough emergency services for people who have been in car crashes. Through this technology, people can be sent a message right away after an accident to let them know what happened. The bad thing about this method is that it can't be used without a network. The system won't be able to send the alert message in places where there is no network. The suggested way would be very helpful to the car business. The emergency teams will be able to get to the scene of the crash faster, which will save lives. By linking it to other systems, you can always find ways to make it better.

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