Wireless Black Box for Cars

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ABSTRACT: The main purpose of making this project is to develop a vehicle black box system that can be installed into any vehicle all over the world. This paradigm is often designed with minimum range of circuits. Wireless black box is basically a device that will indicate all the parameters of a vehicle crash and will also store and display its parameters of every three second such as date, time, temperature, location, vibration, alcohol limit etc. Whenever the accident held the message will sent from the system built inside the car to the registered mobile numbers such as emergency numbers of police stations, hospitals, family members, owner etc. We have used various types of sensors like temperature sensor, which is used to measure temperature and humidity. Vibration sensor measures vibrations felt by the car during accident. Alcohol sensors are located on the steering wheel which will indicate whether the driver is drunk. Gyroscopic sensor is used to indicate tilt during the accident. All the parameters sensed by the sensors will send the signal to Arduino mega2560. GSM module, SD card module, GPS module are some of the devices used in our project which helped in accomplishing the output.

KEY WORDS: Arduino mega2560, GSM module, SD card module, GPS module, Gyroscopic Sensor

1. INTRODUCTION

The purpose of using the black boxes in the car can be many but what we are trying to implement here and show is quite a few of them. The black boxes in the car could be used to improve road safety to a great extent. This is a current technology to monitor and educate all the drivers everywhere at all times. The main purpose of having a black box installed in the car is to get various types of information if in any case any mishap has occurred. In case of any accidents, we show that the black box is capable of calculating and informing certain parameters that are further discussed and explained. In this project, we have proposed the GPS (Global Positioning System) for driver assistance and car surveillance. Accelerometer and GPS tracking system is developed for monitor the accident. The system consists of cooperative components GPS device. The threshold algorithm is employed to work out speed of motorbike and fall or accident in real-time. The project works satisfactorily in real time, can locate the vehicle travel locations in the form of longitude and latitude. This system also logs the information like speed, maximum speed and distance information of the vehicle.

2. EXSITING METHOD

Figure 1: Hardware setup

The device keeps a data log of track and acceleration data for 1 minute before and after an accident. The police and insurance examiner can obtain accident history using black box to investigate accident situations from data-logger.
3. PROPOSED SYSTEM

The system aims to develop a wireless black box project is to develop a vehicle black box system that can be installed into any vehicle all over the world. This paradigm is often designed with minimum range of circuits. Wireless black box is basically a device that will indicate all the parameters of a vehicle crash and will also store and display its parameters at every three seconds such as date, time, temperature, location, vibration, alcohol limit.

![Block Diagram of Proposed System](image)

**Figure 2: Block Diagram of Proposed System**

System Design

The main purpose of our project is to provide vehicle safety and a solution that automatically alert the driver to be cautious. In this system we continuously monitor the vehicle performance using sensors.

![Flow Chart of Proposed System](image)

**Figure 3: Flow Chart of Proposed System**
4. RESULTS

The Hardware components of the wireless black box for car are connected and the power supply is given and it shows as figure 4.

Figure 4: Hardware setup

Step 1: When the power supply is given, it shows Black Box with SMS alert as shown in the figure 5.

Figure 5: Displaying Black box with SMS alert in LCD

Step 2: When alcohol is detected it displays high alcohol detected as shown in the figure 6.

Figure 6: Displaying High Alcohol level detected in LCD

Step 3: It sends the message to the organized person. It display Message Sending as shown in the figure 7.
Step 4: It displays message sent in LCD display as shown in the figure 8.

Step 5: It sends message as high alcohol level detected with live location as shown in the figure 9.
5. CONCLUSION

This project is proposed to detect and rescue the system from accidents. The database supplies accident data. Once the accident occurred the alert message is sent to one of the contact person and nearby hospital and nearby police station with location. Message sent via WI-FI network is the accident occurring. The scheme was tested with automobiles in real world applications. There will be no false alert message about the test results.

REFERENCES