

SMART VEHICLE AUTOMATION WITH BLACKBOX USING IOT

A. Nithya¹, Dinesh. K.R², Sandeep. S³, Jayashree. R⁴

^{1,4}Assistant Professor, Department of Information Technology, Panimalar Engineering College, Chennai, India.

²UG scholar, Department of Computer Science & Engineering, Panimalar Engineering College, Chennai, India.

³UG scholar, Department of Information Technology, Panimalar Engineering College, Chennai, India.

Abstract - The main goal of this work is to develop a prototype of the incident detection system using the black box. In the event of an accident, if an accident has occurred to the driver or passengers of the car, a loss of life may occur due to delays in medical assistance. The given sensor is connected to the micro controller and it just record the various driving data parameters in ubidots (open source cloud). It presents the prototype automobile black box system it is having the group of sensor and also gives the black box sends an alert message to pre stored mobile number.

Key Words: Medical Assistance, Black Box, Passengers, Incident Detection, Data Parameters, Micro Controller, UbiDots etc

1. INTRODUCTION

The project aims to find the occurrence of any incident and to report the position of Incident with the previously fed contact number so that immediate assistance can be provided by ambulance to patient. Nowadays automobiles technologies are rapidly increasing each and every year and also each and every second accident count also increase. So while using some technologies like black box placed in the automobile means creating a new level of data service in vehicle. The vehicle black package has occupation comparable to an aircraft black package. It is highly useful to analyze the cause of vehicular accidents and prevent the loss of life and property arising from vehicle accident.

1.1 PROJECT SCOPE

The Etching of Vehicle Information Black box to the Cloud in a Secure Fashion presents the prototype automobile black box system it is having the group of sensor and sends an alert message to pre stored mobile number. The given sensor is connected to the Micro controller and it just record's the various driving data parameters in ubidots (open source cloud) the system.

1.2 EXISTING SYSTEM:

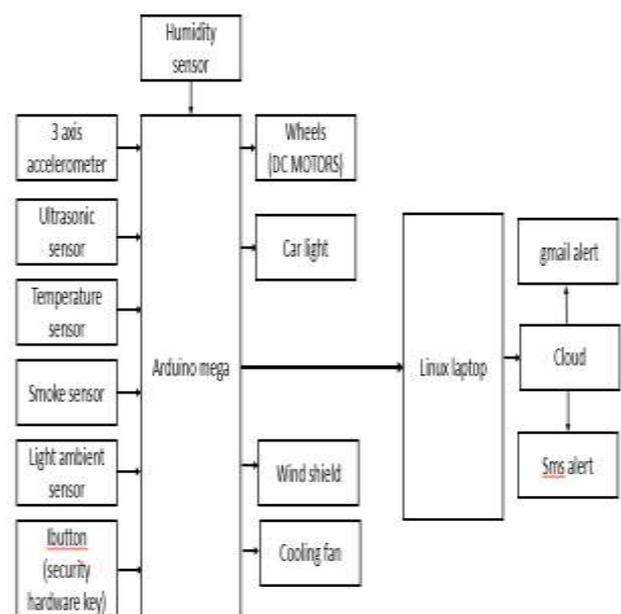
Normally black box cost is high so no one prefer to install in the vehicle and normally black box is just store the data In existing system black box is done by using the sensors with GSM if any of the parameter reach above the threshold level it sends only the message. In an existing system circuits

looks very bulky and not in compact. Black Box has proved indispensable to improve the reliability of safety. Unfortunately, in most real-life situations, Black Box fails to deliver their most essential feature: a faithful replay of events in real time. The flight recorder of the aircraft, Black Box continuously records the various run parameters, even on distributed systems, record the execution for post-mortem analysis. We plan the flight recorder for real-time traffic accident info.

2. PROPOSED SYSTEM:

To monitor the various sensors such as alcohol sensor, temperature sensor, light sensor, accelerometer, ultrasonic sensor, GPS are connected to Arduino board. Arduino board is connected to Ubidots (open source cloud). The output of the sensors is read from Arduino and communicated to single board computer. The data is stored in the cloud the given system is proposed in IOT.

3. ARCHITECTURE DIAGRAM



Below is the detailed instruction to implement the project.

3.1 UPLOAD A PROGRAM TO ARDUINO BOARD:

- The respective sensors are to be installed with arduino board. We use five types of sensors and EM-18 Modular reader used in with.
- Ultrasonic sensors are used to calculate the distance of opposite object. If any obstacles are detected within two meters then the motor is automatically stopped. This process is clearly written in program.
- LDR sensors are used to sense the light to turn on when the car goes to dark area.
- Smoke sensors are used to analyses the air. When the car gets fire then it automatically stops the engine and prevents the life before dies.
- Temperature sensor and 3-axis accelerometers are did the same way to protect the cars.
- Then the respected program is created in arduino.c. and the program is uploading to the board.

3.2 EXECUTE THE PROGRAM AND LINK THE DEVICE TO THE CLOUD:

- Open ubidots (open source cloud) create the account and copy the API credentials.
- Copy that API credentials within program. The program is created with Microsoft visual studio 2013.
- This program is used to upload the device to the cloud to view live monitoring.

3.3 UBIDOTS (OPEN SOURCE CLOUD):

- Open ubidots and add the device. The variables are already created in it.
- Use the card reader turn on the device and watch the live monitoring and location of the car.
- Create the events which give alert to our e-mail or phone number.
- In case of abnormal the message is received from cloud.

4. MODULES AND DESCRIPTION

4.1 CLOUD FUNCTIONING:

1. Live Monitoring
2. Alerting System

4.1.1 LIVE MONITORING:

Our live monitoring is powered by ubidots (open source cloud). In the cloud we have create the events according to our sensors. Once the device is linked with cloud it shows with green signal. After that start the device with card. The cloud shows the live monitoring and location of the device.

4.1.2 ALERTING SYSTEM:

Suppose if any case the car got an accident or something goes abnormal. For eg: temperature value got high. It alerts the user with SMS or E-mail with location. From this message we prevented bfr accident or something gonna happen.

5. CONCLUSION & FUTURE WORKS

5.1 CONCLUSION

In this paper the current tendency of investigate on expansion of energetic lend a hand systems was examined. The center of attention was on accident caution and accident prevention organization and their shock on drivers reassurance security and interchange flow. The means of transportation based support organization have few obstructions to get ahead of previous to they can be used extensive. The habits in which routine accident manage organization can get better the driver's reassurance and the dissimilar viewpoints of the protection are discussed. A safe and comfortable design requires longer headway between the vehicles. Accident caution and escaping organization have the additional difficulty that they be supposed to be able to be familiar with a dangerous circumstances and they exchange a few words it to the driver. The human factor issues are of great importance and therefore a section in this paper was dedicated to this subject. This appraisal of the investigate on driver support organization, crash caution and prevention organization; make available a expedient way of assessment of the current investigate go forward in the meadow. It serves as thorough reference for researchers and engineers in automotive engineering and will also be an introduction for those who are less familiar with the subject.

5.2 FUTURE WORK:

We have planned to enhance the model and the software to support in real time cars. However, the achievement of these cars will depend on the excellence of in sequence produced and dispersed by the intellectual sensors entrenched in them. Auto producer will need to unite smart sensors and highly developed analytics to create truly victorious smart cars.

5.3 REFERENCES

- [1] Accident Detection System using Black Box System Proposed by: Tushar shelke¹, NilimaRaut², Swati Sayare³, Shital Bhade⁴, Shital Manmode⁵, Rajashri Sadawarti

- [2] Online Black Box System for Cars
Proposed by: 1, Mr. Kishor Rane, 2, Mr. Rahul Tichkule,
3, Mr. Mohit Shinde.

- [3] Intelligent Safety Information Gathering System Using a
Smart Black box Proposed by: Chanjin Kang and Seo
Weon Heo,