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# ARM BASED EVENT DATA RECORDER AND EVIDENCE COLLECTING SYSTEM FOR CAR

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## ABSTRACT

*ARM based Event Data Recorder and Evidence Collecting System using different sensors,GPS and GSM module gives information about the engine temperature,front obstacle, speed of the vehicle and positionof the vehicle on real time basis and also there is alcohol detection.This information collected by ARM7 processor will be given to the monitoring station.The difference sensors and modules are connected to the processor which helps in fetching the information.This system also records the data in real time which can help people to analyze the fault at extreme condition,in which event data recorder(car black box) displays the messages on LCD.It also helps to analyze the accidents easily so that many problem related to car such as performance of driver, vehicle maintenance, insurance clearance can be easily solved.*

***Keywords:*** *ARM7 processor, event data recorder, sensors,GPS and GSM module.*

## I. INTRODUCTION

In 2008, Road Traffic Injuries (RTI) positioned fourth among the main sources of death in the world. Around 1.3 million individuals die due to road accident every year.As the population increasing,the number of vehicles are incresing on the roads and highways which results in more accidents due to rider's poor behavior such as drunk driving,speed driving or a long-time driving tiredness.

To overcome all these problems,the proposed module provides information about accident to the nearby hospital and police station.Sometimes accidents may also occur due to bad weather conditions such as vapor,fog and so on.The project is mainly on composition and functioning of the car black box. Just like black box of aeroplane ,car black box is used to record information such as driving data,collision data,vision data and position data before and after the accident so that fault can be analysed easily[1]. In addition to these functions ,the car black box equipped with wireless communication system can also be used to send information to the emergency centers in real time so that the drivers who need help can receive help easily from nearby hospital and police station .This helps to construct safer vehicle, which improves the treatment for accident person and also helps insurance companies with their investigations,and improving road status in order to decrease the death rate [5].

## II. RELATED WORK

In this system, it not only records the audio and video, also prevents collision of the vehicle by limitimg the speed of the vehicles.In case accidents takes place, time and location is sent through GSM for immediate treatment.But this system does not contain alcohol sensor door sensor which we have employeed in our project [1].

This system has two main units like vehicle to vehicle collision avoidance unit (VVCAU)and black box. VVCAU is used to avoid crashing between vehicle and black box is used to record all the information about car[2].

This system is mainly on how to collect and manage the data effectively that are obtained from car black boxes .This system which collects evidence and event data can reduse driver privacy concerns and communication and management overheads[3].

## III. PROPOSED WORK

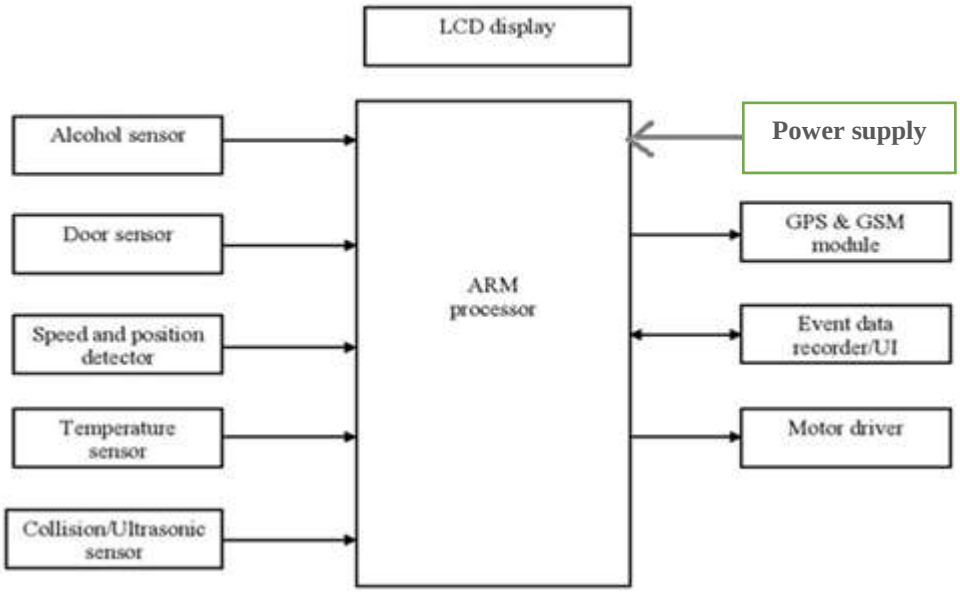


Fig1: Block Diagram

3.1. Methodology and implementation

Vehicles and discovery records the applicable insights about a vehicle, for example, motor temperature,distance from obstacle,speed of vehicle,brake status,co2 content,alcohol content,accident direction,trip time. Another structure for leading controlled driving conduct thinks about in light of multiuser organized 3D virtual condition. In This undertaking, a procedure to gather basic video cuts from auto secret elements utilizing advanced mobile phones. Basic video cuts operating at a profit box are hashed to give information

trustworthiness before being transmitted to the police server. The sythesis and capacity of a propelled controller arrangement of auto black box The framework can't just record the principle driving information of the auto thoroughly and precisely continuously, yet additionally remake the mishap with information process programming, which can enable individuals to break down the mishap quickly and honestly after an impact. The proposed confirm gathering framework can decrease driver security concerns and correspondences and administration overhead. Vehicle security framework which would not just record sound and video, yet in addition attempt to keep a conceivable impact while restricting the speed of the vehicle in clumsy territories. If there should arise an occurrence of a mischance, the time and area is sent through GSM to a preset number for safeguard and treatment, recorded information can likewise be utilized for legal sciences ,the issues that caused the mishap and producer a thought for development.Methodology and Implementation

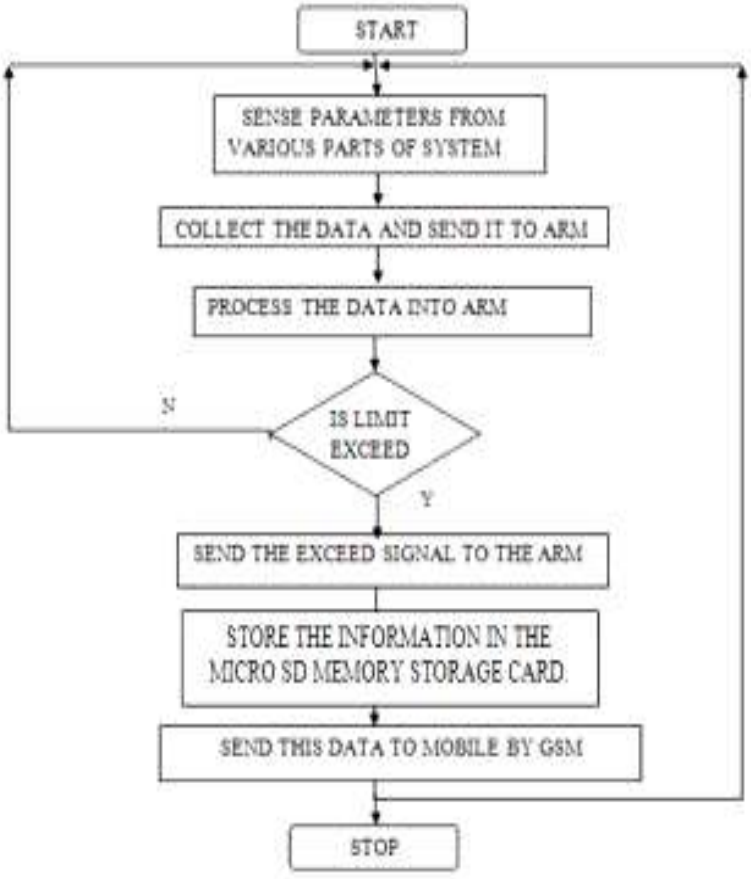


Fig2: Flow chart

Framework stream is appeared in figure2, at the bigining, sensors are instated and parameters are detected. Sensors are associated by means of CAN transport to benefit the upsides of CAN convention. Presently sensors sense parameters from different parts of the framework. ARM is modified to check for outrageous states of sensors. On the off chance that cutoff surpasses at that point send the information through CAN module to capacity card. Additionally this information is send by means of GSM mode to police or

approved individual (predefined). In the event that estimation of sensors is under cutoff then it goes to detecting mode. Framework Stops when Vehicle with EDR stops.

## IV. RESULT

Fig.3**:** Result of Alcohol detection


Fig.4: Warning after Alcohol detection

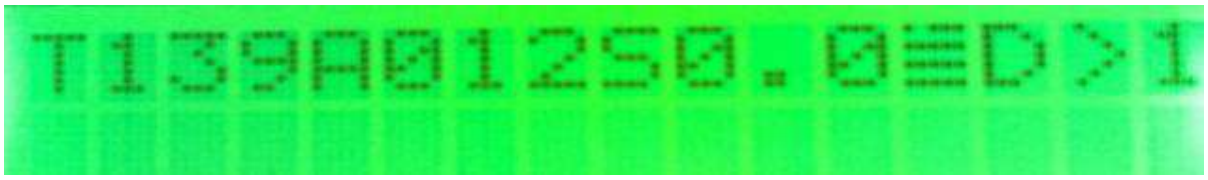

Fig.5: Result for Exceed temperature


Fig.6: Warning after Temperature exceed

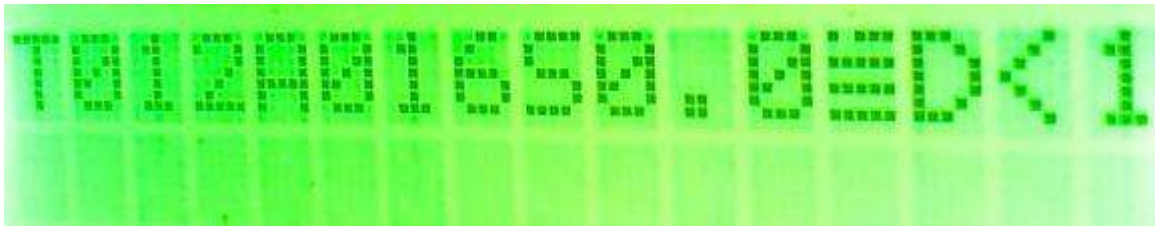

Fig.7: Result for distance crossed at less than 1 feet


Fig.8: Warning after Temperature exceed


Fig9**:** Output of GPS on LCD Screen

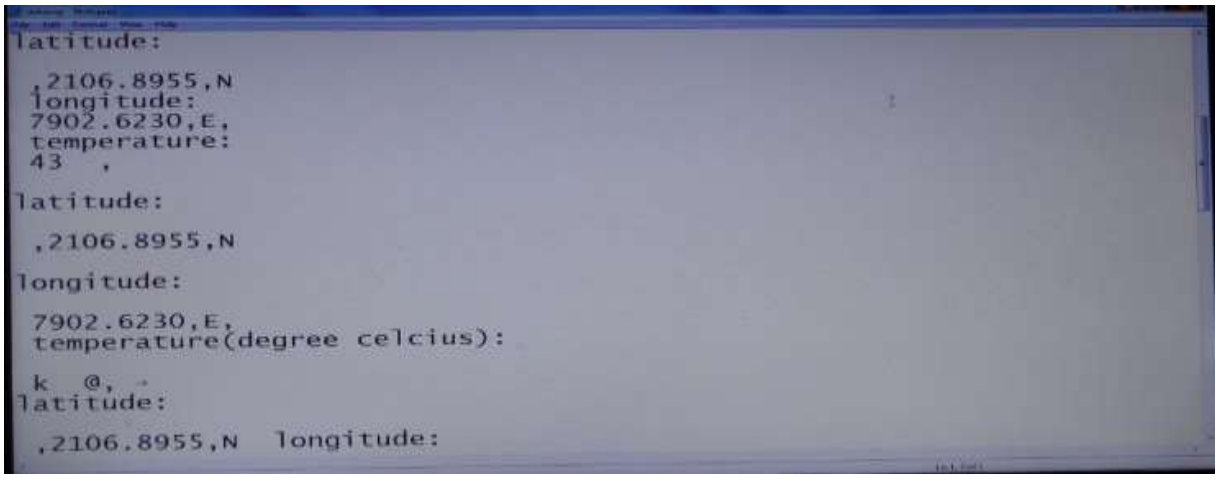


Fig10: Data stored in .txt format

## V. CONCLUSION

The proposed module is mainly on the functioning of the car black box which records all the information like driving data,collision data,vision data and position data before and after the accident so that faults can be analysed easily and many problems related to car can be solved. .It also send information to the nearby hospital and policestation in real time so that the drivers can be saved from the cause .This reduces the death rate due to accident in our country.This module can be used for personal vehicle,insurance companies and for military purpose.This system is user friendly and can be installed into any vehicle.

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