Embedded Based Complete Vehicle Protection

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Abstract: - The Primary aim of this Project is to design the project for a Complete Vehicle Protection with Embedded Technology. In this project there are two sections, one is a vehicle unit another one is a monitoring unit. In a vehicle unit Accident is measured with the help of vibration sensor. Temperature is measured with the help of temperature sensor. Fuel Level measurement using Float. That sensor's output is given to the amplifier unit. After the amplification this output is given to the ATMEGA controller. Speed measurement using proximity sensor. This sensor's output is given to ATMEGA controller via (Signal Conditioning Unit) SCU. ATMEGA calculate the speed from this signal. If the vehicles have very high speed immediately turn off the vehicle by relay circuit. Here we used flash type reprogrammable controller. In the event of Accident ATMEGA controller transmits all these signals to the (personnel computer) PC via (Global System for Mobile communication)GSM MODEM. Other unit is a monitoring unit.GSM MODEM will receive those signals where the PC act as the Police station server. In case of accident some voice sound can be generated in the PC for attention. RS 232 is a serial communication cable. All sensed parameters are displayed in the Police station server. If vehicle is theft means we can locate the vehicle with the help of (Global Positioning system) GPS by using Internet Maps. And also we can stop the vehicle with the help of relay. This project is helpful for Police investigation purposes.

INDEX TERMS: - *Fuel Level measurement, ATMEGA*

1. INTRODUCTION

Present industry is increasingly shifting towards automation. Two principle components of today's industrial automations are programmable controllers and robots. In order to aid the tedious work and to serve the mankind, today there is a general tendency to develop an intelligent operation. Road accidents are human tragedy . They involve high human suffering and monetary cost in terms of untimely deaths injuries and loss of potential income. Although we have undertaken many initiatives and are implementing various road safety programs, During the year 2010,there were close to 5 lakhs road accidents in India, which resulted in more than 1.3 lakh deaths and inflicted injuries on 5.2 lakh person these numbers translate into one road accident every minute and one road accident deaths every 4 minutes unfortunately more than half the victims are in the economically active age group of 25-65 years. Road traffic accidents are amenable to remedial action. Many a countries have curbed the menace of road accidents by adopting a multipronged approach to road safety that encompasses broad range of measures such as, traffic management, design and quality of road infrastructure, application of intelligent transport systems, safer vehicles, law enforcement, effective and quick accident response and care etc. The Government alone cannot tackle road safety problems. There is a need for active involvement of all stack-holders to promote policy reform and implementation of road safety measures. Addressing road safety in a comprehensive Manner underscores the need to involve multiple agencies or sectors like health, transport and police. This Project Concern Different sensor like Vibration, Temperature, Speed, Level and also Limit switches those signals fed to ATMEGA. ATMEGA Microcontroller is the heart of the device which handles all the sub devices connected across it. It has flash type reprogrammable memory. It has some peripheral devices to play this project perform. It also provides sufficient power to inbuilt peripheral devices.

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We need not give individually to all devices. The peripheral devices also activates as low power operation mode. These are the advantages are appear here. In past day's Black Box system, this system should available in the air-craft for the purpose of investigating the accidents. This project is very helpful for Police Investigating purposes.

II. RELATED WORK

In general Vehicle Black Box system [1] should store position information and in-vehicle data have Store position information and in-vehicle data have reliable position solution (Position reliability information should be provided by the positioning module) Use wireless communications for data exchange with the box allow third party services with reference queries[1] DiffUser: a differentiated user access control[2]. In this paper, we propose this model to enhance smart phone security and user privacy. It is likely that Smartphone will have a strong presence in the future mobile phone market. Smartphone are often equipped with additional functionality such as GPS systems, cameras, Wi-Fi, FM radios, Bluetooth, and various sensors. They can support many new applications such as Internet services, photography applications, and location based services. There are many demands for smart phone securities models, current smart phone OS'es have no mechanisms to support these demands, not to mention user access control. We implement a prototype of Different User on a real Smartphone system, Android, which is an open source platform. Although Android is based on the Linux kernel, it is a new OS specifically designed for mobile devices. This system have three different users such as(1) administrative users, who have complete control over Smartphone; (2) normal users, who have many Smartphone privileges but cannot install or uninstall critical system applications; (3) guest users, who have very limited privileges. Finally this paper we cannot fix exiting security flaws in smart phone system with reference queries [2]. Wireless Black Box Using MEMS Accelerometer and GPS Tracking for Accidental Monitoring of Vehicles [3] In this work, wireless black box using MEMS accelerometer and GPS tracking system is developed for accidental monitoring. The system consists of cooperative components of an accelerometer, microcontroller unit, GPS device and GSM module. In the event of accident, this wireless device will send mobile phone short massage indicating the position of vehicle

by GPS system to family member, emergency medical service (EMS) and nearest hospital. The system is compact and easy to install under rider seat. The system has been tested in real world applications using bicycles. The test results show that it can detect linear fall, non-linear fall and normal ride with high accuracy. Only Possible for two Wheeler sere discussed in reference paper[3].Evidence collection from car black box system [4] those paper concern will transmit the information from Black Box to the server through Smartphone. Initially Smartphone will authenticate to the server by means of password. After Authentication black box will transmit the information to the smart phone. Driver handles the smart phone to transmit the information to the vehicle. Here this method is difficult to transmit the information because during accident driver also .In many cases without VANET Infrastructure,3G networks can be used for transmitting video clip data. Every car is equipped with car black box,, Global Positioning System(GPS) and GSM MODEM. The devices are always turning ON When car moves. Car Black Box and can communicate with each other in order to transmit data by wireless communication.

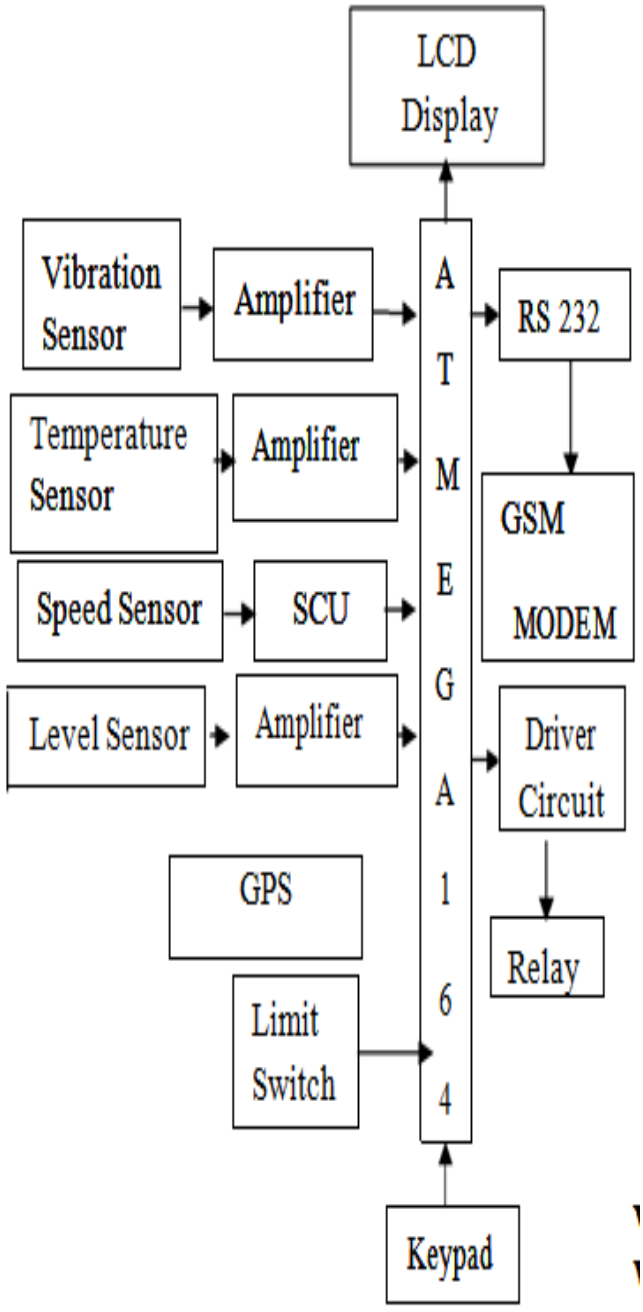
III. OUR CONTRIBUTION

In this paper has proposed many cases without VANET (Vehicular Ad-Hoc networks) Infrastructure, 3G networks can be used for transmitting video clip data. Black box is the device .It consists of many sensors such as Vibration, speed, Temperature sensors, Fuel level measurement using float and limit switches. Every car is equipped with car black box ,Global Positioning System(GPS) and GSM MODEM. The devices are always turning ON When car moves. Car Black Box and can communicate with each other in order to transmit data by wireless communication. Those sensed values displayed in the LCD display in the vehicle unit. In the event of accident the vibration sensor enabled. Immediately sensed details are transmitted through GSM MODEM to the Police station server. The Police station server common Number have fixed through Keypad. This police station server act as the Monitoring unit. It consist of monitor the sensed values. It is helpful foe Police Investigating purpose. The Vehicle Kept high speed immediately turn-off the vehicle by Relay circuit. There by Reducing the Accidents.

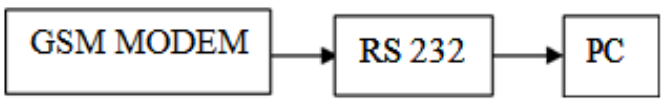
IV. PROOF OF THIS PROJECT

A. Set up phase

Transmitter Section



Receiver Section



B. Verification Phase

V. CONCLUSION AND FUTURE WORK

The progress in science & technology is a non-stop process. New things and new technology are being invented. As the technology grows day by day, we can imagine about the future in which thing we may occupy every place. The proposed system based on ATMEGA microcontroller is found to be more compact, user friendly and less complex, which readily be used in order to perform. Several tedious and repetitive tasks. Though it is designed keeping in mind about the need for industry, it can extended for other purposes such as commercial & research applications. Due to the probability of high technology (ATMEGA microcontroller) used this

"**EMBEDDED BASED COMPLETE VEHICLE PROTECTION SYSTEM**" system is fully software controlled with less hardware circuit. The feature makes this system is the base for future systems. The principle development of Science is that" nothing is impossible" so we shall look forward Bright and sophisticated World.

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