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12_Smart Vehicle Security Black Box

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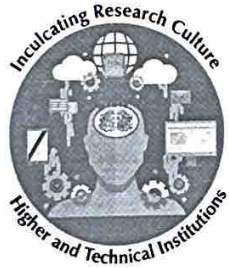

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Smart Vehicle Security Black Box

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***Abstract*— The primary goals of this project are to create a smart vehicle black box prototype, provide vehicle safety, and find a way to automatically warn drivers to drive carefully. It is utilized in aircraft. There are so many accidents happening all around us today for unknown causes. [1] According to statistics, over 1.35 million people worldwide die in mishaps each year. Each year, there are more than 4.5 lakh fatalities just in India. The Black Box was installed in the car to avoid accidents. For use in accident inquiry, data from the sensors is stored on an SD card mounted on a Raspberry Pi computer or in the cloud. This article describes a method for creating a GSM-GPS-based intelligent vehicle monitoring system with a Raspberry Pi controller. The suggested system makes use of a MQ135 light sensor. For the purpose of preventing car collisions and warning proprietors of vehicle collisions, alcohol sensors, temperature sensors, GPS, and GSM modems are used. The info collected is useful for further research. This project's extra feature alerts the driver any time the sensor values surpass the standard specification value. The SD card that is connected directly to the Raspberry Pi contains the data.**

Keywords—Light sensor, Alcohol sensor, Raspberry pi, GSM, GPS

I. INTRODUCTION

We undoubtedly encounter difficulties whenever we alter the demands of society[2]. Hence, everyone must constantly innovate our technology to discover solutions to the issues facing society in order to meet these challenges. This article presents a cutting-edge and reasonably priced vehicle monitoring system that uses GSM and GPS (Global Positioning System) for informative purposes alone (Global System for Mobile Communications). The system uses the GPS module to track the location and speed of the car, and then uses the GSM module to send an SMS message containing this data to the registered phone number. A Raspberry Pi- Pico, a GSM module, and a GPS module are all included in the system [3].

Besides from this, the prototype also contains some advanced features. It contains accident-detecting sensors.The SD card stores the date and time, which may be used to calculate the vehicle's trajectory and display its motion on a Google map. The system will offer answers to the issues that truck, car, and other vehicle owners encounter while travelling. Because, as we know, road accidents are a major threat to India. The project's goal is to track down incidents and report their locations along with previously provided contact information so that the patient can receive instant assistance from an ambulance [4][5]. In the modern era, car technology is advancing quickly every single year, and accidents are also happening more frequently every single second. In order to use some technologies, such as black boxes installed in cars, it is necessary to upgrade the vehicle's internet service. The job of the car black package is similar to that of the aircraft black package[7]–[9].

The first objective of this project is to cut back on human work. Automation has perpetually been a first-rate issue for

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APPRECIATION

This is to certify that Dr. **Vikas Gupta** has contributed for a **Full** length paper with the title **Smart Vehicle Security Black Box** in the **International Conference on Communications, Computing & Data Science (IC-CCDS 2023)** organized during February, 24th & 25th, 2023 at Thakur College of Engineering and Technology, Kandivali (E), Mumbai.

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