AUTOMOBILE BLACKBOX

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College : Sambhram Institute of Technology

Branch : Department of Electronics and Communication Engineering

Guide(s) : Dr. Sapna M.K

Student(S): Mr. Numan Shariff R

Mr. Anandhan V. S

Keywords

Black box, evidence collecting, evidence securing,

Introduction

In the present world, most of the crime events are executed in four wheelers and the most used vehicle is car, were lack of information the justice is denied and it is very hard to solve the case. The worst situation is when the vehicle is burned or destroyed completely, for example the case of finding Sukumara Kurup were the person and car where burned totally leaving no evidence. Lack of technology, it took 37 years to solve the case, which could have solved in 37 hours by the technology called Black Box. When a vehicle collides with another vehicle, pedestrian, animal, road debris, or other stationary obstruction, such as a tree, pole or building. Traffic collisions often result in injury, disability, death, and property damage as well as financial costs to both society and the individuals involved. Road transport is the most dangerous situation people deal with on a daily basis.

Inspired from the news article of Indian Express, the concept like Black Box which is present in Airplanes which helps to rectify the mistake by the human negligence or internal vehicle faults or by the external conditions

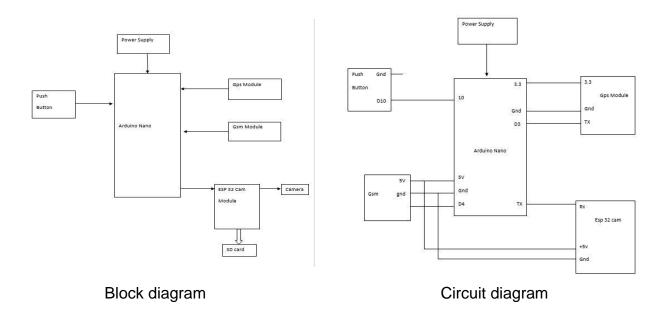
Objective

- (a) To collect and secure the collected DATA/EVIDENCE of the incident
- (b) To help in investigation
- (c) To secure the evidence
- (d) To analyze the incidence
- (e) To transfer the data to Gmail
- (f) To collect the image

Methodology

- (a) Whenever the push button is triggered the Arduino nano will receive the signal, then the image will be captured using ESP32 CAM.
- (b) At any moment of time, the captured image stored in the local disk or the internal storage of ESP32 CAM is protected in the shell.
- (c) At the same time the gps coordinates are received from gps module converted into

- the google maps link.
- (d) Along with the accident message the google maps link will be sent to the registered mobile number.
- (e) The email is sent to the registered GMAIL ID along with the image captured by ESP32 CAM
- (f) Using the same, SMS is also sent to the registered mobile no.
- (g) All the images are stored offline (internal storage) as well as online (Gmail).
- (h) Even if the vehicle or the black box intentionally been destroyed, the evidence/DATA that is stored in the Gmail is only accessible by the authorized person or the INVESTIGATING department.
- (i) The DATA which is stored on the Gmail is only readable or non-editable.



Results and Conclusion

- (a) SMS will be sent to the registered mobile number with the link of the location
- (b) The DATA (image) stored in the internal memory of ESP32 CAM
- (c) The captured image is also sent to the registered Gmail ID
- (d) This reduces the risk of editing or misusing of the evidence
- (e) The evidence is saved in the Gmail where only authorized person will have the access to it
- (f) It can help in analyzing the accident and also helpful for the investigating process

Future Work

- (a) The model can be further extended from image to video recording
- (b) This can be done using Raspberry pi microcontroller and micro python coding
- (c) The storing medium can be changed from Gmail to cloud storage(firebase, AWS)