IOT based Accident Detection System

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INTRODUCTION

An accident detection and notify system for requesting help from the emergency services and alerting the family for any kind of accident happened to the vehicle and send the status of geographical location, position and condition of the vehicle using GSM, GPS and various sensors.

Also clicking the images of vehicles/people who cause damage or other vehicles which crash lightly to cause a minor accident and send them to the owners using E-mail.

PROBLEM STATEMENT

To develop a vehicle accident/damage detection and notifier system for notifying the emergency services and alerting the family for sending immediate help at the accident site using GPS, GSM and various sensors.

METHODOLOGY
(block diagram/Flow Chart)
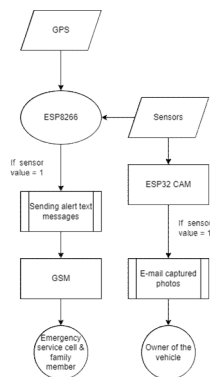
PROTOTYPE

This Accident Detection System uses Node MCU ESP 8266 as the main microcontroller board to which the GPS, GSM, and different sensors are attached and also uses ESP32 CAM for clicking the pictures of the surrounding when an accident occurs.
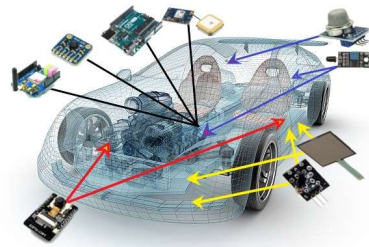

Figure 1. Proposed Implementation.

In this prototype different sensors are used like Accelerometer for finding the physical position of the vehicle, shock sensors and impact switches are used for detecting minor accidents. Fire and smoke sensors are used in the system. The impact switches and shock sensors trigger the ESP 32 CAM to take pictures of the surrounding of the car.

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CIRCUIT DIAGRAM
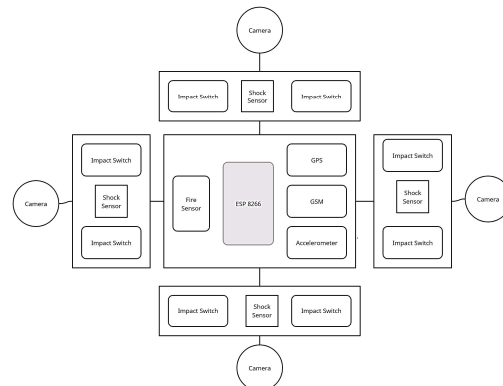
RESULTS

1] Whenever an accident occurs this accident detection system senses the physical position of the vehicle and sends a text message to the emergency services cell and the family of the owner of vehicle with the geographical location, Position and Fire/Smoke condition of the vehicle.

2] Whenever a minor accident takes place the sensors trigger the cameras to take pictures of the surroundings of the vehicle and send them to the owner of the vehicle. Thus the owner is able to identify the true cause of accident.

ADVANTAGES

- Real time accident detection
- Quick notification to emergency services
- Capturing of images at time of accident
- Quicker rescue of people
- Decreased fatality rate after an accident
- Value for money

CONCLUSION

The project uses IoT technology to detect and convey notifications of any kind of accidents occurred to the vehicle. This accident detection system focuses on decreasing the fatality rate after an accident. A value for money system as it helps to rescue people at accident site at a much faster speed.

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
√	√	√	√	√	√		√		√	√	√	√	√

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