GPS and GSM Based Driver Safety using Microcontrollers for Minimize Road Accidents

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Abstract. The unavoidable threat of road traffic affects the general public now more than ever. Population increasing and the manufacturing of vehicles growing exponentially, road accidents are all but avoidable. As a service to the community, we can help in a way that increases the response time towards accidents and helps contain this catastrophe. In recent years, road crashes have produced a large number of deaths and injuries the world over. It has been calculated that 1 million deaths and 20 to 50 million injuries are occurred due to driver inattention. Driver drowsiness and driver distraction are two leading causes of this driver's inattention to help in minimizing these fatalities, this paper introduces a new Driver Care Automated System. The proposed system using Arduino, Sim 808 GPS/GSM module, and other modules such as gas module, vibration module, and speed detection module to detect driver drowsiness and distraction and sends an alert of the accident to pre-assigned parties with information such as Geolocation. Global Positioning System (GPS) device finds the exact location of the vehicle. Global System for Mobile (GSM) module sends a notification message including the link of location in the google map to the pre-assigned parties. This system has been tested on prototypes and has a very high success rate. This review paper aims. to make drivers more cautious about their speed and intoxication, develop a new Driver Care Automated System, and minimize road accidents.

Keywords: *Driver Care Automated System (DCAS), Global Positioning System (GPS), Global System for Mobile (GSM), Geolocation, Speed Limit*