Intoxicated Driving Prevention Device for Young Adults: A GSM Technology

Michael Mayberry

Opportunity and Significance
One of the largest dangers to a young driver’s safety, is intoxicated driving. A solution to the problem is proposed that involves using a configurable, and reprogrammable, detection and prevention unit. When the driver enters a vehicle, they will be required to breathe into a sensor, and on upon detection of alcohol, the vehicle’s ignition will be deactivated and the GPS location of the driver will be sent to a parent, or preferred persons. The technology developed in this project can lead to parental peace of mind and lowered fatal accident rates.

Technical Approach
The proposed method takes input from an alcohol sensor and transfers it to an Arduino Uno microcontroller. The data is then processed, and the Arduino decides if the alcohol content is too high. If so, vehicle ignition will be disabled and GPS coordinates will be collected, then sent to a specified phone through text message, via a GSM.

Technical Objectives
- Alert parents when their teenagers are attempting to drive intoxicated.
- Implement an alcohol sensor and GPS unit with a microcontroller to collect driver data.
- Interface with a GSM module to send data via SMS messaging.

Related Work and State of Practice
- Current techniques to curb alcohol related teen driving accidents revolve around law enforcement and social programs.
- The Technology developed builds upon Dr. Alazzawi’s work relating to reconfigurable computing for smart vehicles and driver’s safety, using GSM modules specifically.

Development
Further work is required to develop/construct the hardware and software for the system. Once complete, testing of the device will begin and implementation can be evaluated.

Commercialization Plan & Partners
The proposed device is the first in-vehicle, tech based solution to curb young adult, alcohol impaired driving. Its relatively inexpensive and is highly user configurable, making it an attractive option to be developed further and commercialized with Auto companies.

References