

Intelligent Ignition Interlocking device for motorcycles

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Abstract

Ignition Interlock Device or IID is the mounted system inside a car that needs the driver to respire into the unit before the car is started. The engine will not begin if the IID detects that the alcohol or blood alcohol (BAC) content is greater than the accepted value. The IID will log the event, warn the driver, and then launch an alarm if the driver can't provide a smooth airborne sample. The IID is intended to avoid crashes caused by influential driving (DUI). Due to its mobility and purchasing power, the Philippines are still largely equipped with IIDs on four wheeled cars as two-wheel cars increase. Although riding motorbikes are more hazardous when you are drunk, motorbikes and scooters have only a tiny amount of appliances installed. The main goal of the research was to create a system that would implement motorcycle IID with hardware and software. The study used a descriptive research method. The research concluded that the infrastructure had a point-to-point interaction, the helmet breathalyzer had to respond to ethanol, and that the bike microcontroller was supposed to recognize and interpret all of the IR signals from the helmet and that the GPS shelf had unimpeded line-of-sight interaction with the GPS satellites.

Keywords-IID (Ignition Interlock Device), BAC (Blood Alcohol), DUI

INTRODUCTION

Ignition Interlock or IID is a car system that needs the driver to breathe into the unit before the car starts. The engine will not begin if IID detects the amount and the content of alcohol or blood alcohol (BAC), above the accepted value. In addition, IID will involve a random breathing sample to avoid a driver from giving a breathing sample[1], [2]. The IID will record the incident, warn the driver and begin an alarm if the Driver is unable to provide a sample of a smooth breath[3]. The IID is aimed at preventing accidents caused by the DUI. One of the misconceptions with IID is that when alcohol is identified, it merely turns off the engine[4]. The interlock producers will therefore be held responsible for an unsafe driving scenario. The breathalyzer that determines the driver's alcohol toxicity by exhaling to the instrument is an important element of IID[5]–[8]. The auto respirator calculates BAC and enables the automobile to only get started if BAC is within the range. Those accepted values differ from nation to nation and have a peak content of 0.5 mg / ml in the Philippines. In general, the IDs are supported on the equipment above the car radio with breathalyzer and a lengthy cord integrated. Motorcycles generally have extremely restricted room to mount equipment like IID. That implies that it is also

important to consider the place of IIDs on motorbikes. Because IID requires another driving test, the driver can't take another test while driving because leaving one hand off the gate leads to a hazardous driving experience and thus has the choice of stopping and proceeding with the test for a while. This can lead to delays, which will result in the bike driver having a log detail with adverse outcomes if there are no stopping areas like roads or roads. Another problem with IID mounted on motorcycles is circumvention. This implies that the driver is allowed to breathe in a nice individual and to pass the BAC that starts the engine despite the driver not being the test driver. By expanding the IID order to the offender and fining the individual who gave the sample, the law is avoided.

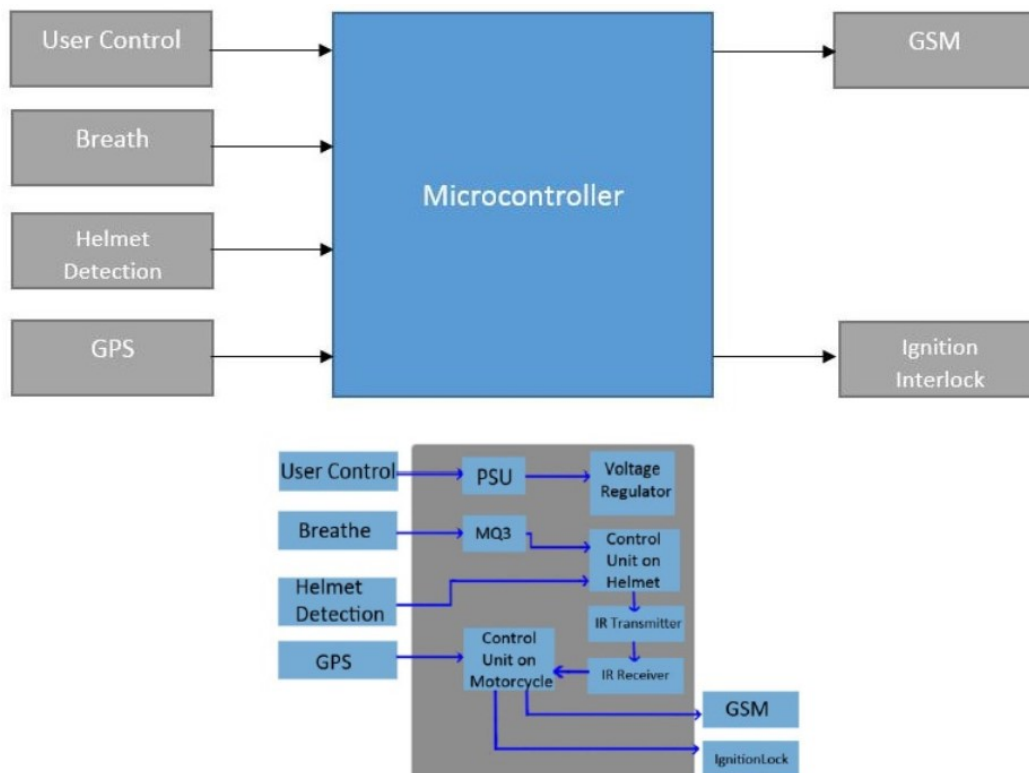


Figure1- Level one design of IID for Motorcycles

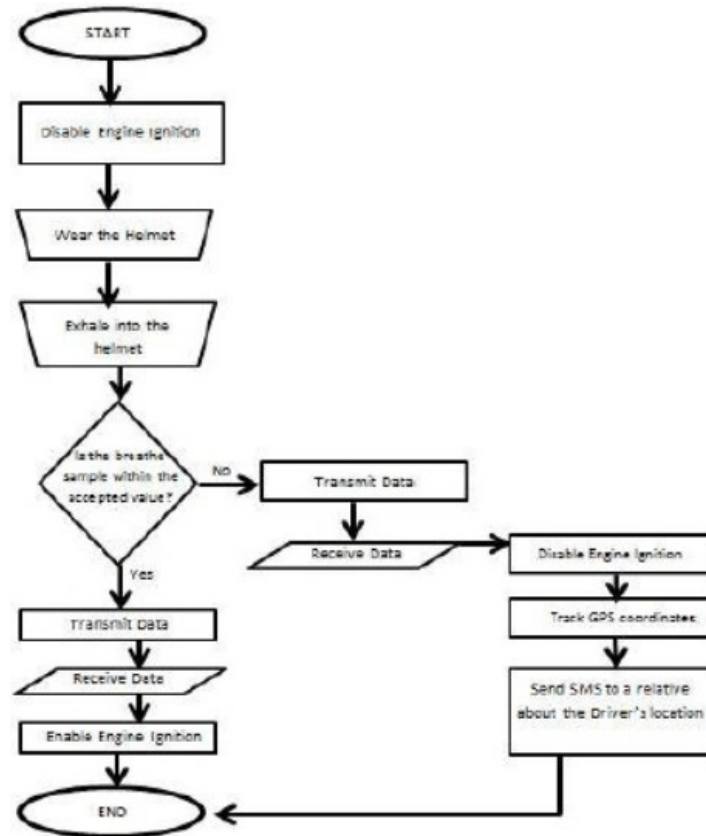


Figure2- system flowchart of IID for motorcycles

CONCLUSION

The infrardous transmitter and receiver should be communicated point by point in order for the receiver to obtain the signal from the transmitter in order to ensure the inclusion of the sensor to verify that the driver is using the motorcycle helmet, and that it can be used as a sensor to verify that the driver is taking breath samples. Also, the helmet's micro switch should be put above to make sure someone wears the helmet. The sensing MQ3 should respond to ethanol and the sensor need to be calibrated, because the sensor is sensible in wet environments, to install the breathalyzer in the helmet to determine the amount of alcohol of the driver. Furthermore, the control unit in the helmet should be able to calculate the amount of alcohol to correctly determine if the driver has a 0.5% BAC that determines whether or not it will be prevented by the scheme. The IR receiver linked to the microcontroller should recognize all IR-signals sent by the transmitter and interpret the signal in order to develop the control unit that controls motorcycle actuators based on information collected through the sensors, if the system allows the motorcycle to function normally. In addition, the relay mounted on the motorcycle should have the right battery requirements. In addition, other actuators, such as horns and lights of the

motorcycle, can be monitored in order to improve the development of the control unit that controls motorcycle actuators on the basis of the data collected by these sensors.

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