

Review paper on-Rider Protective& Assistive Bike

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Abstract: To follow the traffic rules is important because most of peoples not follow these rules. For that we make a system that will allow to ride vehicle who have a license. 2wheeler accidents are increasing rapidly and results in loss of the many lives. In our country there is law to wear a helmet and do not ride a bike while influence of alcohol but most of the time law will not obeyed by the people. For this, "Rider Protective & Assistive Bike", is developed. It consisting of intelligent system embedded into the helmet and the vehicle. It consist of smart helmet unit that will check the rider wear helmet and also check rider under influence of alcohol. This system is connected to the bike unit to on-off the ignition switch if this two condition are not met. Bike unit checks and detect the accident and send the SMS. We can simply trace the location of rider by using GPS. Also this System provides theft prevention as helmet is compulsory to wear. To overcome manual dipping problems of headlights, an automatic mechanism has made.

Keywords: Vehicle theft safety, accident detection, intelligent, Assistive Bike, SMS

I. INTRODUCTION

In this century, craze about riding a bike is increase. Most of the people afford a bike so the numbers of riders are also increase. When accident is happen due to short time for medical help the person could die. Therefore, the need of such system that makes compulsion on rider to wear a helmet and carry the license. That is helpful to obey our government law. One of the important safety is Automatic upper dipper using Light Dependent Resistor (LDR). To overcome the manual dipping problems, an automatic mechanism has made.



Figure 1: Helmet

The main objective to develop this paper is to follow government's traffic rules while riding the bike. We make such a system that will provide safety while riding a bike. The intelligent helmet system make with various sensors that will make compulsory to wear a helmet. To reduce cause of an accidents by designing protective intelligent helmet and automatic upper dipper system.

II. LITERATURE SURVEY

According to reference [1] this paper have discussed that to design Smart helmet for rider radio frequency link is used. After helmet is wear by driver, transmitter radiates the RF signal and Receiver section which is placed in ignition switch of bike sensed this signal and bike get started. When helmet keep out from head bike will start operating.

According to reference [2] this paper discussed the design and implementation of vehicle tracking system in real time. This system provides the location of vehicle where the accident occurs. When collision is detected by sensor immediately it sends this data to receiver. Receiver decodes this data using RF decoder and transmit it to controller. Also message will be sent to ambulance & family members with help of GPS coordinate using GSM module.

According to reference [3] this paper is similar to above paper with addition of other sensors.

According to reference [4] in this paper LDR is used. it senses automatically the bright headlights of opposite vehicles and decides whether our system's headlight should be upper mode or dipper mode. Due to this circuit driving becomes smooth and also accidents are reduced.

III. COMPARISON (EARLIER SYSTEM VS PROPOSED SYSTEM)

Table 1: Comparison

Parameter	Earlier System	Proposed System
1) Data transmission device	GSM	ESP8266
2) User safety	Less	More
3) Accuracy	Less	More
4) Complexity	Less	More
5) Causes of accident	Moderate	Less

IV. BLOCK DIAGRAM

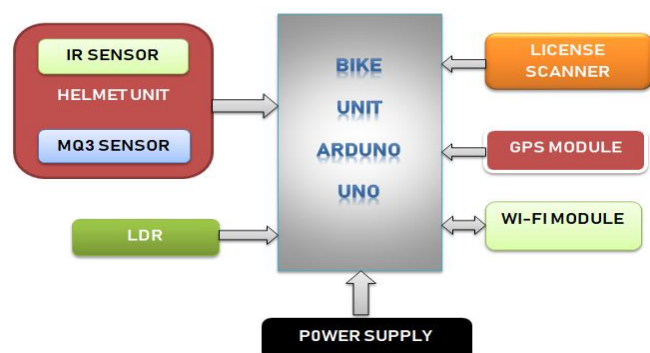


Figure 2: Block Diagram of System

In this system first step is to scan license. A license scanned authenticated vehicle starter system in which license scanned using barcode scanner. A barcode scanner consists of three different parts including the illumination system, the sensor, and the decoder. In real, a working of barcode scanner is scan black and white parts of a barcode by illuminating the code with a red light, which is then converted into matching text. The sensor in the barcode scanner detects the reflected light from the illumination system and generates an analog signal that is sent to the decoder. The decoder interprets that signal.

To start ignition, the first step is to identify the rider wear the helmet or not. If helmet is detected then ignition can begin otherwise it will remains off till helmet is not wear. For these we use IR sensor. The second step is alcohol detection, for this we used MQ-3 sensor which is place just front of the face. It determines by helmet unit is use for detection of alcohol. Helmet unit decides whether rider is drunk or not.

The working of this smart & protective helmet is very simple, vibration sensors are placed in different places of helmet where the probability of hitting is more which are connected to microcontroller board. So when the rider crashes and the helmet hit the ground, these sensors sense and gives to the Arduino Uno board, then controller extract GPS data using the Wi-Fi module that is interfaced to it. When the data exceeds minimum stress limit then Wi-Fi

module automatically sends message to ambulance or family members with the help of IOT.

One of the important safety features that need to be installed is automatic upper dipper control of headlight. Automatic Dipper using Light Dependent Resistor (LDR). While driving a car in the night many drivers does not dip the head lamps of their vehicles in night while approaching. Many times it is situation that because of upper mode of headlight the vehicle coming from front suffer from blindness cause accident. To overcome these manual dipping problems, an automatic mechanism has made.

V. FLOW CHART

The first step of project is it initializes all the port and next step is ignition system if all three conditions satisfied then bike will start. Second step is, headlight is initially at high beam (upper) if it receives signal from passing vehicle then it change to low beam (dipper) automatically then it will goes to third step. Third step is step is Accident Detection using vibration sensor if accident detected, stop everything and send message with location to ambulance or family members. If No accident then it will goes to previous step.

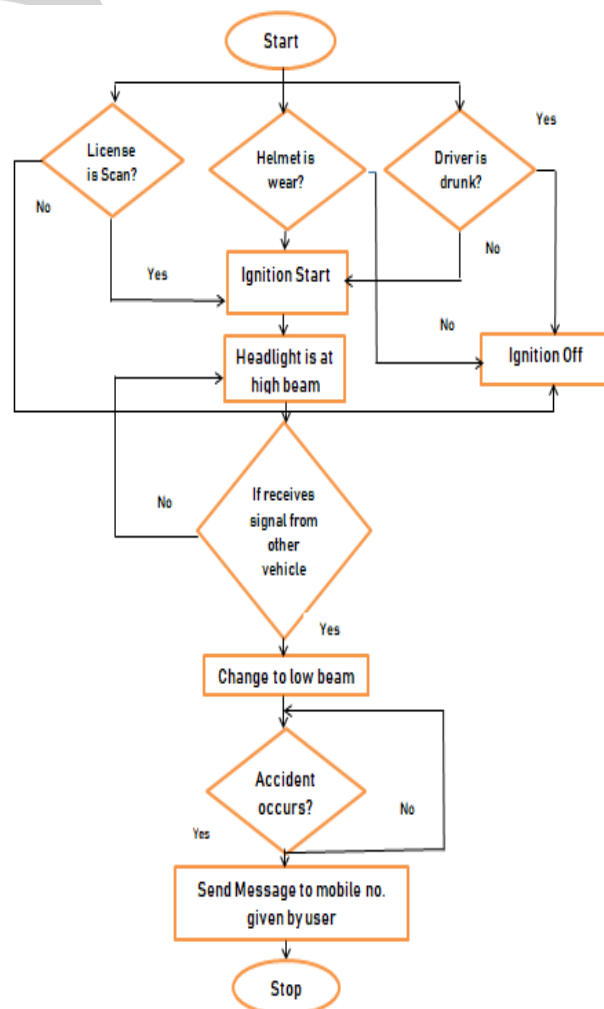


Figure 3: Flow Chart

VI. ADVANTAGES & APPLICATIONS

ADVANTAGES

1. We can easily get the location of the accident and medical services provided immediately.
2. Implementation of Government Traffic Rules.
3. By detecting alcohol drunken drive can be avoided and resulting reduces the probability of accident.
4. System can be operates on Battery as well as on Solar.
5. System is easy to implement, cost effective & efficient.
6. Due to use of variable sensors they are easy to replace.

APPLICATIONS

1. System can be used in real time safety system.
2. System can implement whole circuit into smaller module later.
3. It can be enhance further in car by replacing seat belt with helmet.

VII. CONCLUSION

The result of the paper have showed that to start bike ignition License should scan, helmet should be wear by driver & driver should not drunk. Also automatic upper dipper system also developed. So, this will decrease automatically the accidents and it can helpful from bike being stolen. More importantly it helps to follow traffic rules. Arduino is very useful for controlling this system and various sensors.

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