Alcohol Detection Helmet– A Review Paper

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Abstract—Our project is on alcohol sensing helmet Nowadays most of the countries are forcing the motor riders to wear the helmet and not to use the vehicles when the person is in drunken condition. But still the rules are being violated by the users. In order to overcome this we introduces an intelligent system Smart Helmet, which automatically checks whether the person is wearing the helmet and has non- alcoholic breath while driving. Here we have a transmitter at the helmet and the receiver at the bike. There is a switch used to sure the wearing of helmet on the head and also The main cause of death in two-wheeler drivers is over-speeding, drunken driving and careless driving. to fix those problems we introducing our smart helmet as called alcohol detection helmet. And also some futuristic features like alcohol detection, accident indication, location tracking, used as a hands- free device, solar powered, fall detection.

Keywords: Alcohol Detection, Helmet, IoT, Safety

I. Introduction

A survey taken by who world health organization its says that Head injuries are the leading cause of death and major trauma for two- and three-wheeled motor vehicle users. Correct helmet use can lead to a 42% reduction in the risk of fatal injuries and a 69% reduction in the risk of head injuries. The use of helmets is, as such, an increasingly important means of preventing road traffic deaths. Best practice for motorcycle helmet laws includes a requirement for drivers and passengers to wear a helmet on all roads, a specification that helmets should be fastened, and a reference to a helmet standard .Its compulsory to wear helmet, without helmet ignition switch cannot ON.[1] and also who says about drink and drive as It is estimated that 5–35% of all road deaths are reported as alcohol related. Driving after drinking alcohol significantly increases the risk of a crash and the severity of that crash. While blood alcohol concentration (BAC) limits provided for in legislation need to be at the core of efforts to address drinking and driving, an integrated approach to intervention involves combined publicity and high visibility police enforcement. Best practice for drink–driving laws includes a BAC limit of 0.05 g/dl for the general population and a BAC limit of 0.02 g/dl for young or novice drivers.[1]

II. Literature Survey

According to the recent Research paper in OCTOBER 2019 titled 'Smart Helmet Using Natural Language Processing, Head Mounted Display and Solar Panel', in this paper author has discussed on their project about natural language processing and solar panel. There is special arrangement of micro phone to control and manage bike and helmet features using voice assistant also the specific feature of that project is nearby vehicle detection. Those are also using Bluetooth module and smart phone for controlling and managing.

According to the Research paper in 2020 titled "IoT Based Smart Helmet and Accident Identification System",In this paper the author has discussed about Trust worthy and safe alternative of traditional helmet. That project main aim is to less drink and drive cases and to give a notification message to respective guardians and to also ensure the person where the helmet mandatorily. Other divided there circuit in two parts one in bike side and one in helmet. Those are using micro controller for their respective purpose.

According to the Review paper in 2020 titled "Intelligent Smart Helmet System: A Review" In this paper the main objective of this paper is to review modern technology like RFID (radio frequency identification technology) and ZigBee technologies reviewed and most of concentrated on IOT and RF module.

According to the Research paper in 2020 titled "Design and implementation of smart helmet using IOT" In this paper main objective of paper is to use modern and advanced system to communicate with helmet and bike like WIFI and IOT cloud. Those are using atmega 328P for respective computation. Those are using mercury switch for tilt detection of helmet and bike and there for they communicate with guardians and notify anything accident happened or not.

III. Limitations and Challenges in Existing Systems

1) Bikers do not wear helmets in there going where traffic hocking is not done
2) There is a tendency of the driver to wear helmet only where the anticipate checking may Takes place, they do not wear helmet where no checking is done
3) The vehicle may be turn on or maybe stolen by passing the ignitions Switch
4) Testing alcohol content present in blood in each individual rider in big countries like India is almost impossible.
5) Accidents due phone calls as previous helmets do not contain Bluetooth speakers.

IV. System Architecture

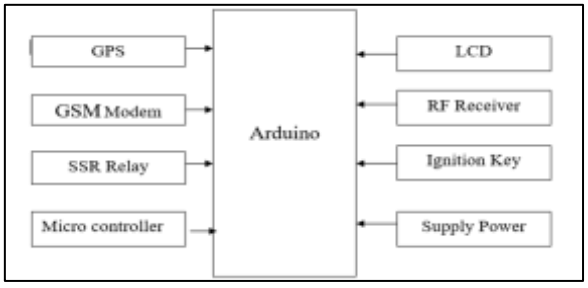

Fig. 1: Bike side

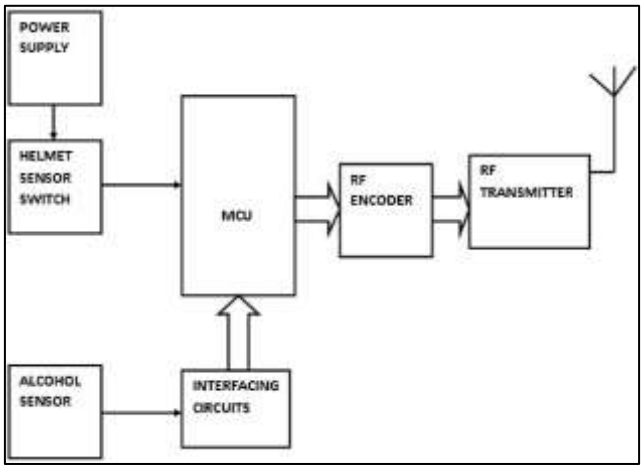

Fig. 2: Helmet Side

V. SCOPE OF IMPROVEMENT

Any system always has a scope for improvement sand more advancement. All the systems studied under the literature survey have their own different features. All the systems proposed till dates are used only for sending message in case of accident. There could be such a system where only alcohol detection is present. Here in this system many advanced features are addenda so the previous features are clubbed in a single system. It will send message automatically when rider met an accident with helmet on. RF transmitter and receiver are used for starting the two wheeler, if rider not wearing the helmet the bike will not get start. The alcohol sensor will sense the alcohol and it will lock the ignition if drunk. The solar sense is generating power for the system. It can tracked easily with location when bike is stolen. It can also use to receive call while driving through wireless Bluetooth Speakers.

VI. CONCLUSION

Thus this system is very effective for the safety purpose of the user. User has to wear helmet to ride a bike and hence traffic rules will be followed by the rider. This system is under pocket control i.e. Riding the two-wheeler vehicle having safety in hand and in budget. This system has easy function product. It provides a better security to the biker.

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