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To Design and Develop an IOT Based Smart Helmet

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ABSTRACT: In this project, we have reviewed the recent trends in developing Smart Helmet system. The smart helmet system is used to prevent the accidents in motor bikes and to identify the bike accidents on time for wellness of human being. Also, the smart helmet system analyzed in this paper is used in mining industry for safeguarding the miners from hazardous events in the mine and to alert the miners from hazardous gas emissions inside it. The research also helps to understand the smart helmet system evolved over the period and currently by using emerging technology like Internet of Things (IoT). This work also addresses the intelligent motor bike helmet system which is used to inform the rider about rear big trucks/buses for avoiding collisions.

KEYWORDS: Internet of Things (IOT), Smart Helmet, Cloud Computing; Hypertext Transfer Protocol; Internet of Things; Sensor; alcohol Sensing;

I. INTRODUCTION

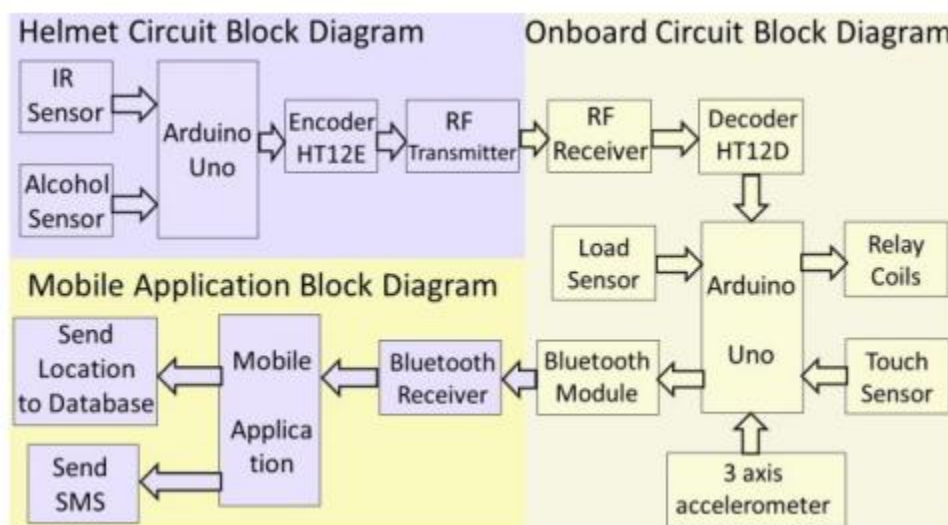
In every aspect of our life safety and security are the major important areas. Now-a-days the scenario that we come across in many cases of human deaths and severe injuries to people is because of two-wheeler road accidents. And it is a crucial issue that requires everybody's attention, for every four minutes there is one death being reported in India. As per World Health Organization (WHO) we have identified that 40% of the deaths and 70% of severe injuries can be reduced if bike rider wears the helmet Now a day's wearing helmet is compulsory for every two wheeler riders and also it is equally important for pillion riders too to wear the helmet, but the discomfort or inconvenience caused due to wearing conventional helmet makes the rider to avoid using the helmet and finally it leads to death of the rider. In spite of the fact that helmets are being available to everybody, people are just not wearing them and the main reason behind it is that the conventional helmets are generating unconditional temperatures inside it which makes inconvenience to the person. Currently in the existing system, when the person met with an accident we are not in a position to ensure the immediate first aid treatment; due to this late medication the person may die. With the help of proposed system in this paper, it triggers an automatic alert message to the concerned person or to the ambulance in case of any emergency situation like an accident. The alert message consists of the details such as location of the accident and time of accident, which will help to speed up the first aid service to the casualty. The Internet of Things (IOT) can provide an infrastructure which integrates the smart services with situational responses, and also allows mutual communication between smart things or devices and people over a network. So we have come up with this idea of IOT based smart helmet which ensures the safety of the rider while riding. The idea of proposing this system has mainly come from the social responsibility towards the society. The proposed system allows the rider to start a bike only on wearing the helmet. This system will not allow driver to ride if he had consumed alcohol. This system identifies the bike accidents with accuracy and gives information to the nearby hospital and relatives of the rider who met with an accident. It also tracks the location details of the rider and alcohol consumption of the rider and will be stored in the cloud/server.

II. PROPOSED METHODOLOGY

We are developing a smart helmet using the internet of things (IOT) technology, in which we ensure the safety of the bike rider. By avoiding road accidents of the bikers by,

- The system detects whether the rider is wearing a helmet or not if he wears then only the vehicle will start.
- It detects the amount of alcohol consumed by the rider, if the rider has over drunk, the bike engine will not start.
- When the bike rider meets with an accident it detects it and gives the notification to the registered contact with a location.

For the safety of the bike rider, we are using the latest technology IOT, this technology provides the advance techniques for alerting the rider and ensures that rider follows the rules and regulations. For two-wheeler rider, Helmet is the most basic protection device and it is necessary for every bicycle or motorbike riders. But it does not ensure the safety of the rider and the rider wont follow the traffic rules. Most of the people use ordinary helmet just to avoid giving challan to the traffic police, these helmets do not ensure the safety of the driver. So, to overcome these problems we need to use the smart helmet.



Block Diagram

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