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DESIGN OF SMART SHAKO USING WIRELESS SENSOR AND GSM TECHNOLOGY

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Abstract - *With the increasing number of two-wheeler vehicles, frequency of accident is on rise. Major causes for calamity one either the rider not wearing a helmet, or he has consumed alcohol and the setback is not reported on time. Currently there are no technological interventions being used to prevent such events. This paper proposed a smart helmet system. This is implemented using advance features like alcohol detection, setback identification, location tracking and fall detection. This will help in avoiding such situations to a significant extent. The smart helmet has a module to defect whether the rider is wearing the helmet and also analyses the breath of the rider to check for consumption of alcohol. The rider will not be able to start the vehicle if the rider is drunk and is not wearing helmet. Instead of calamity occurred then the location of calamity is tracked and sends the alert message to the ambulance with the location of calamity. This system will provide safety to bike rider all time.*

***Key Words*: smart helmet, vibration sensor, ultrasonic sensor, GSM Module, MQ5 sensor.**

1.INTRODUCTION

India ranks 1st in the number of road accident deaths across the 199countries reported in the world as per the WHO Global report on road safty2018,india accounts for almost 11% of the accidents occur.1214 road crashes occur every day in India. Two wheelers account for 25% of total road crash deaths. 20 children under the age of 14 die every day due to road crashes in in the country. 377 people die every day, equivalent to a jumbo jet crashing every day. Road accidents are increasing day by day because the riders are not wearing the helmet and due to consumption of alcohol. In today's world, huge numbers of people are dying on road accidents. Smart helmet helps to curb "riding without helmet "by ensuring that the rider mandatorily wears the helmet while driving. Thus the objective of this project is to make sure people wear helmets and then ride bikes. Another objective is to make sure the rider isn't drunk. The rider won't be able to ride the bike if he is drunk. One more objective is to reduce the fatality of the accidents by sending a message to the riders' relative about the accident. This was further implemented by where the safety helmet system included a vibration sensor, GSM and GPS modules that could track the person and send a distress call upon hard impact. Vibration sensors are used when the bike is hitting more this relates to microcontroller board. So, when the rider collides and the rider's helmet hits the ground, the vibration sensor senses the condition and after that controller extracts GPS information and this information passes message to nearby hospital. The rest of the paper demonstrated as below. The proposed works and implementation are described in Section 2 and 3 respectively. Section 4,5and 6 discuss about the software description and results respectively. At last, Section 7 concludes the paper with conclusion.

2.PROPOSED SYSTEM

Road accidents are increasing day by day because the riders are not using the helmet and due to consumption of alcohol. In today's world, huge numbers of people are dying on road accidents. By using smart helmet, the accidents can be detected. The main target of the project is designing a smart helmet for accident avoidance and alcohol detection. The ultrasonic sensor checks if the person is wearing the helmet or not. The MO5 sensor recognizes the alcoholic substance in the rider's breath. If the person is not wearing the helmet and if he consumes alcohol, the bike will not start. If there is no sign of alcoholic substance present and helmet is used, then only the bike will start. At the point when the rider met with an accident, the sensor recognizes the condition of the motorbike and reports the accident. Then the GPS in the bike will send the location of the accident place to main server of the nearby hospitals.

3.IMPLEMENTATION

A.ULTRASONIC SENSOR

Ultrasonic sensors work by emitting sound waves at a frequency too high for humans to hear. They then wait for the sound to be reflected back, calculating distance based on the time required. This is similar to how radar measures