SMART HELMET

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ABSTRACT--An accident is a specific, unexpected, unusual and unintended external action which occurs in a particular time and place, with no apparent and deliberate cause but with marked effects. Carelessness of the driver is the major factor of such accidents . The traffic authorities give a lot of instructions to the vehicle operators. But many of them do not obey the rules.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.An alcohol sensor is placed near to the mouth of the driver in the helmet to detect the presence of alcohol. The data to be transferred is coded with RF encoder and transmitted through radio frequency transmitter.

Keywords—Touch sensor, Alcohol Sensor, Vibrate Sensor, Helmet

I.INTRODUCTION

Helmets are designed to protect your head and brain from injury. Brain damage can be the result of even a minor injury to the head. People with brain damage can die. Or they can live a lifetime paralyzed, unable to talk, see, or hear. The brain is what controls everything you do, and when injured it can affect you in many bad ways. Helmets protect your head and keep you safe beside above said helmet acts as isolator depends at temp of brain. There is something know as thermal shocks sudden change in temperature, which directly related to viscosity of blood (temp. rise, viscosity will be less and will be higher in cold) always have impact at human. sudden jerks in any liquid is not good.

Many people don't realize that helmets prevent skull fractures, not concussions, which are brain injuries. A high technology sensor is available in the marker, I used and develops a range of or Shock Box Sensors to alert parents or coaches that an "at-risk" hit has occurred, so concussion checks and protocols start as early as possible.

Here I introduce "smart helmets" and mouth guards outfitted with **GPS and GSM** technology radio-frequency identification to measure the location and direction of hits experienced during an accident and game or practice. The data is wirelessly transmitted to a cell phone on the sidelines, which calculates the magnitude of the hit and the location of the blow. The two wheeler is totally depends on the original helmet which is issued with the vehicle from the RTO. It checks the alcohol then check the sensor input from the helmet whether it is wearing or not. GSM (Global System for Mobile communications) is the technology that underpins most of the world's mobile phone networks. The GSM platform is a hugely successful wireless technology and an unprecedented story of global achievement and cooperation. Today's GSM platform is living, growing and evolving and already offers an expanded and feature-rich 'family' of voice and multimedia services. GSM currently has a data transfer rate of 9.6k. New developments that will push up data transfer rates for GSM users are HSCSD (high speed circuit switched data) and GPRS (general packet radio service) are now available.

II. FUNCTIONAL BLOCK DIAGRAM

BLOCK DIAGRAM:
HELMET UNIT:

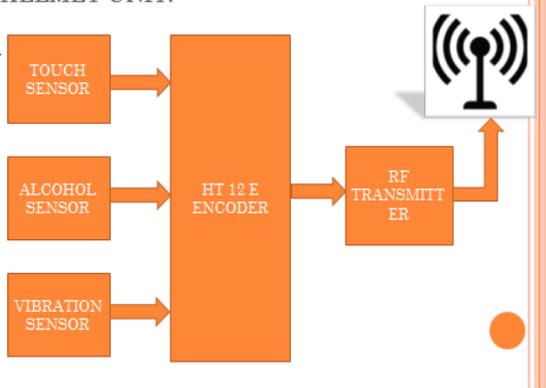Fig.1Block diagram of helmet part

In this project we are monitoring various parameters like Helmet is ON or not, if the helmet is ON mean to say if the person is wearing the helmet then it will turn on the vehicle else it won't start the vehicle.
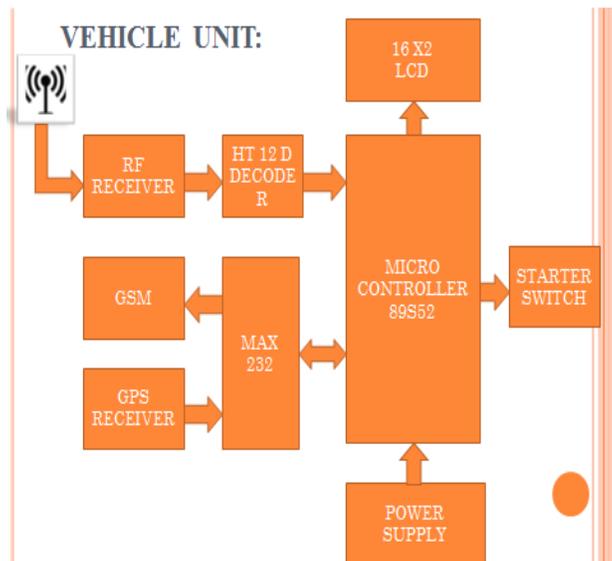
VEHICLE UNIT:

Fig.2. Block diagram of vehicle part

As we know that many of the peoples are having the habit of using the mobiles while driving their vehicle which in turn results in severe accidents to avoid that we have designed this application. If Person is using mobile while driving the vehicle then this smart helmet will identify it and it will slow down the vehicle which in turn will avoid the accidents.

COMPONENTS

Touch Sensor, Alcohol Sensor (MQ-3), Vibrate Sensor,MicroController (89sS52), HT 232 Decoder, 16 X 2 LCD, GSM, GPS, Start Switch, MAX 232 IC.

a. Touch Sensor:It is a type of switch, that operates only when object touch the sensor.It can detect the change in state when wear the helmet.
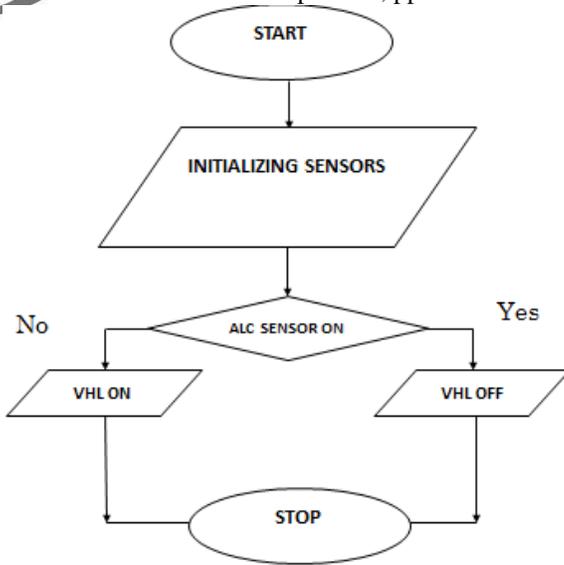
Features of touch sensor

* Low power consumption.
* Easy to use.
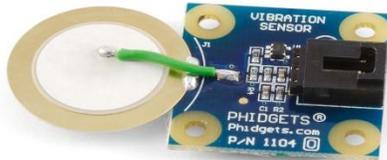* Single chip operation.
* Low cost & Thin.

b. Alcohol Sensor:

* It is a semiconductor sensor for alcohol detection
* Very good sensitivity &Faster response to alcohol.
* Suitable for detecting alcohol concentration in breath.

Flowchart for Alcohol Sensor:

height control circuit will be active. The next occurrence of contact on the receiver circuit can cause the motorcycle operation. Then this project hope will prevent riders from riding without wearing a proper helmet.

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c.   Vibrate Sensor

- This sensor buffers piezoelectric transducer.
- Converts mechanical energy into electrical energy & generates voltage.
- This sensor designed for security purpose.
- Adjustable sensitivity.
- It will in detect Omni direction.

CONCLUSION

As been started from various sources such as print media or electronic media, wearing a helmet is very important to improve the safety of motorcyclist on the road. Thus the development of the project, expected safety campaigns undertaken to achieve the targeted goals in line withposters made to increase public awareness of the importance of road safety. It is evidenced by the expected outcomes of this project, in which helmet strap installed the contact will occur at the receiving circuit. Conditions in causing the recipient and