AUTOMATIC INDICATOR SYSTEM FOR VEHICLE USING GPS

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ABSTRACT:

In the present modern world, most of the people are using the roadways for transportation purposes. The utilization of roadways increases by one side, on the other side the road accidents are also escalating. The current assessment shows that the reasons for the road accidents are not obeying the traffic rules, inappropriate usage of indicators while turning right or left while driving the vehicles and so on. In peak hours and in traffic times people are speeding up with their vehicle and forgot to use their indicator. This leads to an accident while sudden turning and braking without a proper indication. In order to overcome these types of difficulties, an automatic turning on/off bike indicators using offline GPS navigation system is proposed. The proposed system works in an offline mode and does not need any internet connectivity. By turning on the supply to the board, it will generate the hotspot and it will be connected with Wi-Fi in Mobile Phone. Then the destination is fixed in the mobile application. When turning is available in the way to destination before 100 meters of that turning, indicator will be automatically turned on and after that indicator will be automatically turned off. Thus the proposed work would help the people during the rush hours and also during the emergency situations to avoid accidents.

KEYWORDS:

AUTOMATIC, BIKE INDICATOR, NAVIGATION, EMERGENCY, OFFLINE MODE.

INTRODUCTION

In all countries roadways are at most vital for the citizens to move from one place to another place for their personal, official and business work purposes. With the usage of roadways, the farmers can easily sell their products into market, factories can transport their goods to retail shops and public can easily move from one place to another place without any difficulty. Regions or Countries can function easily with adequate road facilities. Roadways in India are most tarnished in the world, so that every year 1.5 lakh citizens lost their lives due to their lack of knowledge in traffic rules. The central government previously failed to take the essential steps however now government has taken strong efforts to reduce the traffic offenses. Vehicle turn indicator signals are usually well known in the art.

In most of the automotive two wheelers, the turning direction of the vehicle can be activated by the operator by make use of turn signals. Usually, the turning signal is controlled by the switches which are very sensitive to turning of the steering column of the vehicle and generally available in the nature of flashing illumination. The indicator unit available in the vehicle is in activated signalling condition while the steering wheel remains unmoved or continues to move in the direction of the turn. The steering column of the mechanical catch is released, when the steering wheel is moved in the direction opposite to the direction of the turn, which causes the cancellation of turn signal. Now-a-days people who are driving their vehicles on the roadways are not properly using their vehicle's indicator while turning. In peak hours and in traffic times people are rushing with their vehicle and forgot to use their indicator this leads to an accident while sudden turning and braking without a proper indication. In order to overcome these types of difficulties, the indicator system is proposed.

MATERIALS AND METHODS:

Manual Mode of Operation The manual mode is operated by the individual whose is riding the bike[3]. The rider can turn on/off the bike indicators whenever the rider needs to turn on/off (depends up on the situation). Usually the manual mode of operation is the thumb operated one, already the switch to turn on/off the bike indicators is fixed in the bike's handle itself. Some models of bikes has a different specification like to turn on the right indicator of the bike, the control of that indicator will be on the right side of the bike's handle and vice versa. The bike riders have to use the indicators to inform other road users when

they intend to change the direction. To use the bike indicators in right time, have to give the plenty of time to other road users to react and adapt to the signal[4]. Once the turn is completed make sure the indicators are cancelled otherwise it may confuse other road users.

THE LIMITATIONS OF THE MANUAL MODE ARE:

- The bike riders are forgot to use the indicator in the right time
- Confusing the other road users by not turning on the bike indicators in the right time and vice versa
- Number of accidents are increased

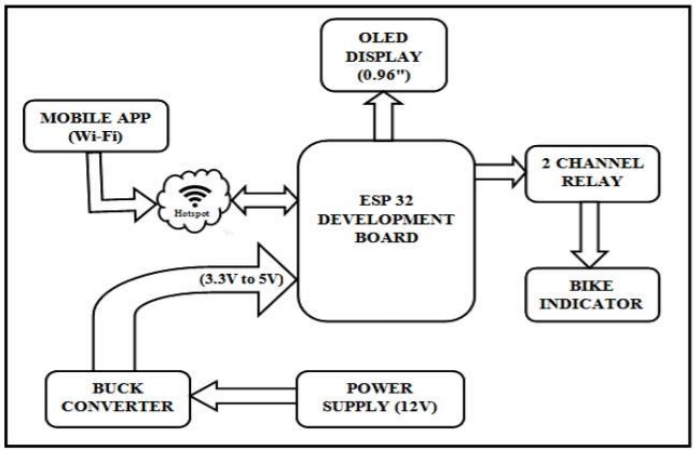
Hardware Components used in the Proposed System

The hardware components and the software used in the proposed system are

- Buck Converter
- ESP 32 Development Board
- OLED Display (0.96")
- Two Channel Relay
- Sygic Navigation App (Software)

SYGIC GPS NAVIGATION APPLICATION:

The System GPS Navigation application guides the user to reach the destination securely even in the absence of a network link[8]. This app includes premium 3D maps. Regular map and application are updated with free of cost. With this app, the user can simply get away from the traffic or locate the finest parking point. The user can also view the latest information concerning fuel cost on petrol stations.



RESULTS:

This project is used to turn on/off the bike indicators (both right and left). The Bike indicators are controlled before the 100 meters of the way to the fixed destination. The main motto of the project is to reduce the number of road accidents which occurs due to improper usage of bike indicators.

DISCUSSION:

The proposed system is to develop a low cost system for automatically turning on/off bike indicator using offline GPS navigation system and also to reduce the number of accidents which occurs due to improper usage of bike indicators.

CONCLUSIONS:

In the proposed system, an automatic turning on/off bike indicator using offline GPS navigation system is developed. Thus it would help the people during the rush hours and also it would helpful during the emergency situation. This project is used to turn on/off the bike indicators (both right and left). The Bike indicators are controlled before the 100 meters of the way to the fixed destination. The main motto of the project is to reduce the number of road accidents which occurs due to improper usage of bike indicators. It is a portable system and also it receives the power from the bike battery itself. It also has the OLED Display which indicates, which direction the user have to turn, how much meters are more to the next turn and also the speed limit.

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