

AMBULANCE CONTROLLED TRAFFIC SIGNAL

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Abstract

Traffic lights play such important role in traffic management to control traffic on the road. Situation at traffic light area is getting worse especially in the event of emergency cases. During traffic congestion, it is difficult for emergency vehicle to cross the road which involves many junctions. This situation leads to unsafe conditions which may cause accident. An Automatic Traffic Light Controller for Emergency Vehicle is designed and developed to help emergency vehicle crossing the road at traffic light junction during emergency situation. This project used Peripheral Interface Controller to program a priority-based traffic light controller for emergency vehicle. During emergency cases, emergency vehicle like ambulance can trigger the traffic light signal to change from red to green in order to make clearance for its path automatically. Using Radio Frequency (RF) the traffic light operation will turn back to normal when the ambulance finishes crossing the road.

1. INTRODUCTION

Traffic congestion is an over-growing problem across world as increasing rate of population, automobiles usage which is proportional to it, will also increases without any road infrastructure development .Due to this there will be a chance of high accumulation of vehicles at every traffic junction and during rush-hours it results in high congestion compared to normal times .Because of these situations which creates complexities for flow of emergency vehicles in busy hours and it keeps the person in critical stage who is need of emergency.

The main concept behind the project is to provide a smooth flow for the ambulance to reach the hospital intime and there by minimizing the delay caused by traffic lights upon its arrival at traffic light junction which would save a live sat critical time. An Automatic Traffic Light Controller for Emergency Vehicle is designed and developed to help emergency vehicle crossing the road at traffic light junction during emergency situation. This project used Peripheral Interface Controller (PIC) to program a priority-based traffic light controller for

emergency vehicle. During emergency cases, emergency vehicle like ambulance can trigger the traffic light signal to change from red to green in order to make clearance for its path automatically. Using Radio Frequency (RF) the traffic light operation will turn back to normal when the ambulance finishes crossing the road.

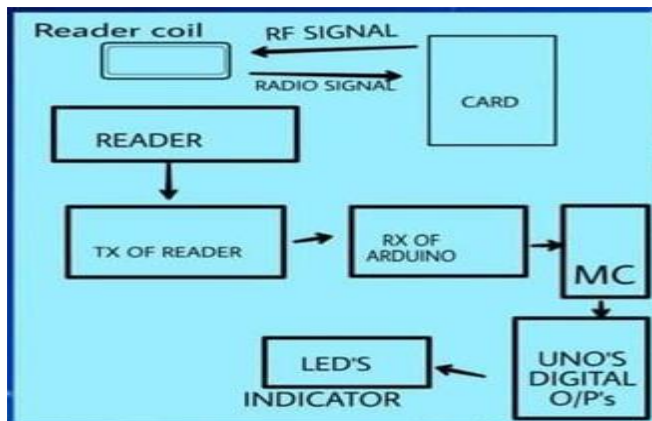
2. RELATED WORK

Location is send to RFID-based system, which manages and regulates the traffic signals at junctions when the emergency vehicle approaches, by allowing the straight forward passage out of the traffic congestions. This paper proposes an approach which controls the Traffic Signals so as that when the emergency vehicle is on its way to a selected destination. The case of ambulance is tracked by using GPS. This the application. The application performs the algorithm with the help of this data and so the google map. It controls the signals on its path. They also introduced a current blue light to stoplight to avoid the chaos within the mind of the people waiting at the stoplight. When RFID tag comes in range of signal transmitted by the reader, transponder in the tag is hit by this signal. A tag draws power from the electromagnetic field created by reader. Then, the transponder converts that radio signal into the usable power. After getting power, transponder sends all the information it has stored in it, such as unique ID to the RFID reader in the form of RF signal. Then, RFID reader puts this unique ID data in the form of byte on serial Tx (transmit) pin. This data can be used or accessed by PC or microcontroller serially using UART communication.

3. IMPLEMENTATION

Traffic congestion is an over growing problem across world as increasing rate of population automobiles usage which is proportional to it .It will also increase without any road infrastructure development .Because of these situations which creates complexities for follow of emergency Vehicle.

The main objective of the proposed Model is to prevent the ambulance from getting stucked in traffic congestion. If the Ambulance gets caught up in traffic congestion, there is a risk of patient death. By using this system, the traffic congestion can be prevented. In this paper, we have designed an intelligent traffic management system that can clear the traffic congestion using Wireless Communications technology.



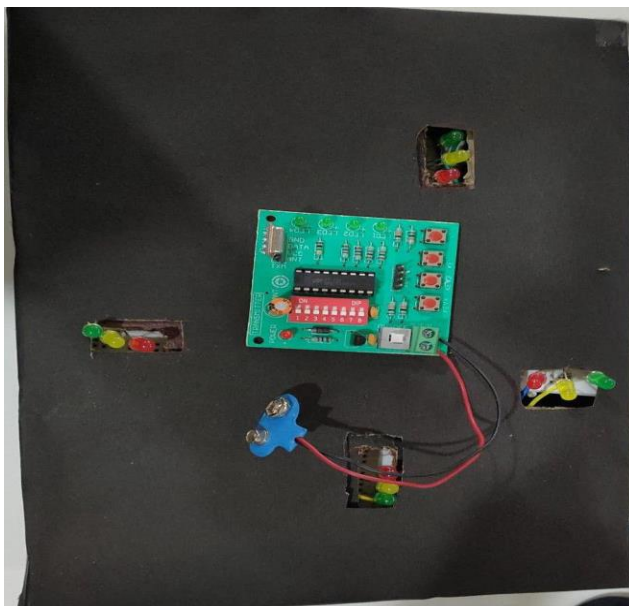
Traffic signals help for movement of traffic securely without any collision .

wireless controlling is possible by RFMODULE

Save time of the ambulance waiting on signal .

24x7 monitoring and controlling is possible

4. RESULTS



5. CONCLUSION:

In this paper, we have successfully designed and analyzed an automatic traffic light controller for emergency vehicle. Peripheral interface controller (PIC) is used as the micro controller and the system can be operated wirelessly using radio frequency (RF) during emergency cases. In future, different type of wireless technology such as LoRa and multi hop network could be replaced in the existing system to cater for longer traffic jam. Furthermore, the 9 volts battery used to operate the system could be replaced with solar powered battery to increase the efficiency of the design. Different microcontroller could also be introduced to save programming processing time in the future. Future Scope: The signal changes

automatically according to the button pressed . This saves more time and the patient is taken to the hospital in minimum time possible .And in the future , button press form the very long distance can change the signals and more new techniques can be increased to the range of the system.

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