Automatic Traffic Signal Control for Ambulance using GSM

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Abstract:
The road accident in the present is increased to greater extent. The loss of human life due to accident must be avoided. Traffic congestion and tidal flow are major facts that cause delay to ambulance. In order to save human life from accidents we introduce a scheme called ATSC (AUTOMATIC TRAFFIC SIGNAL CONTROL). The main concept behind this scheme is to implement. ATSC which would control automatically the traffic signal in the path of the ambulance. With the help of this Intelligent Transportation System integrated with the GPS the current scenario of traffic congestion can be solved to an extent. This scheme is fully automated controlling the traffic lights, helping to reach the hospital in time.

Keyword: GSM, Microcontroller AT89S52, LCD Display, GPS Tracking System for ambulance.

1. INTRODUCTION

The main concept behind the project is to provide a smooth flow for the ambulance to reach the hospitals in time and thereby minimizing the delay caused by traffic lights upon its arrival at traffic light junction which would save a live sat critical time. In the ambulance fixed the GPS inside in the vehicle. The GPS will sense the location of ambulance and then send the latitude and longitude information about value status of ambulance current location The GSM sense congestion. The Microcontroller based GSM system is used to alter the traffic located value of the ambulance and send the value to at the traffic signal reads this information from the another GSM locator installed at the ambulance. To avoid unnecessary traffic signal changes, when the ambulance reaches the current location and then signal will send through GSM. Main aim of installation is to provide communication between ambulance and various devices at traffic signals and so that the possibility for traffic congestion is reduced. In this paper we contribute an overall system to meet the above need. It can be achieved by making use of two major technologies namely GPS and GSM. GPS is to track the arrival of ambulance of location traffic up to some distance and note the latitude and longitude value and to track the nearest traffic signal post to the ambulance and to send the app data to that particular signal post. The data from GSM can be given to the microcontroller to process the results and makes the signal change according to the result. Both GPS and GSM integrate to serve the system without failure at any manner by alternatively working when other fails in its action and it helps in saving victims from the peak hour traffic. When it is being implemented it can act as a live saving. In there we can easy to varied.

2. MATERIALS AND METHODS

REFERENCE:
Intelligent traffic control system for ambulance. Using the android app to register the ambulance to the cloud If RFID reader fails, then after certain period of time driver sends a “BLOCKED” command to the server in Emergency. The RFID uses a RFID tag for each ambulance antennas along the road and RFID reader at the signal post to track the position of ambulance. The cloud system is used to store both app data and RFID data and provides access to the cloud whenever needed to added.

PROPOSED SYSTEM:
The proposed system is based on GPS and GSM. The proposed system has three main merits, that is long distance, Emergency alert, and extra symbol added in traffic light signal. by using GPS we can easily track the signals anywhere anyplace and the biggest merit is that it is freely accessible to anyone with a GPS receiver. We are using PIC Microcontroller in our project to take more outputs and it is low cost. The GPS track the latitude and longitude value and send to GSM, and the tracked value is to traffic light signal through internet. We have LCD display in traffic light signal to display the tracked location of ambulance. In traffic light pole we added a new symbol called plus, it shows the emergency alert to all. In our project we fixed a GPS module in ambulance to track the location, when it reached our fixed point the signals starts to open by the indication of plus and green signal in the traffic light pole.

3. RESULTS AND DISCUSSION

Ambulance section is used for detecting the GPS location.
Traffic signal section is helpful in giving way for ambulance in case of emergency. The battery is connected to charge controller and GPS. The GPS sends the tracked location to PIC microcontroller and the signal is send to the GSM through microcontroller. The GSM converts data to signals and sends to traffic light controller and again it decodes the signals and the power supply is controlled through offline. We are using PIC Microcontroller in our project to take more outputs and it is low cost. The GPS track the latitude and longitude value and send to GSM, and the tracked value is to traffic light signal through internet. We have LCD display in traffic light signal to display the tracked location of ambulance. in traffic light pole we added a new symbol called plus, it shows the emergency alert to all. In our project we fixed a GPS module in ambulance to track the location, when it reached our fixed point the signals starts to open by the indication of plus and green signal in the traffic light pole. We have another fixed value for return back to normal position of the signal. We can control this anywhere anyplace through control room.

4. CONCLUSIONS

Human life is precious and must follow safety measures very conscious in all aspect this of course includes ambulance services too. In this by using ATSC we can achieve the Uninterrupted services of the traffic control system by implemented for signal changes to allow flow control. The accuracy of the GPS location is improve the performance of traffic light detection system. This system is cost effective, multiple usage and deployed using of GSM, Which is more efficient. This system will reduce accidents which often happen at the traffic signal intersection because other vehicles have to huddle to give way to the ambulance services. This life saver project must be implemented in traffic forums to aid the public in good manner.

5. REFERENCES


[4]. Sarath S and Deepthi L R(2018)”Priority Based Real Time Smart Traffic Control System Using Dynamic Background”.

Figure 1.1. Ambulance Section

Figure 1.2. Traffic Signal Section