International Journal of Trend in Research and Development, Volume 6(3), ISSN: 2394-9333
www.ijtrd.com

Survey Paper for Intelligent Traffic Control System for Ambulance

[1]Bhushan Gullapelli, [2]Ritwik Tibdewal, [3]Sanjay Khondal and [4]Swapnali Ware,
[1,2,3,4]Department of Information Technology, Sinhgad Institute of Technology, Pune, India

***Abstract*—** This document presents the formatting instructions for the Proceedings of the intelligent Traffic control system for ambulance. The intelligent traffic control system provides green corridor for ambulance that are stuck in traffic and comprises of crucial emergency.

Keywords: *Intelligent Traffic Control*.

I. INTRODUCTION

The main concept of intelligent traffic control system is to provide a smooth flow for the ambulance to reach the hospitals in time and thereby minimizing the delay caused by traffic congestion.

Nowadays traffic on the road of Indian cities is one of the serious problem [1]. Number of vehicle on city road increasing day by day but roads and infrastructure in the city is not increasing as expected [2]. Controlling traffic signals plays major roll to avoid congestion on the road. This is controlling System also reduce the effort of police persons which are doing duties on signals. System is designed to monitor density of traffic on the road. If any emergency vehicle like ambulance and fire bridged then the image processing detected and tell the system to clear the traffic in critical condition by tuning on green on the path emergency vehicle is travelling. All other signals are turned to red. After passing this vehicle normal signaling is carried on as it is. The system provide green corridor for such situation like organ transplantation. The system provide communication between ambulance and various devices at traffic signals and so that the possibility for traffic congestion is reduced.

II. LITERATURE SURVEY

In Green Corridor system was discussed, which was used to provide clearance to any emergency vehicle by turning all the red lights to green on the path of the emergency vehicle, hence providing a complete green corridor to the desired vehicle.

A “green corridor” is the synchronization of the green phase of the traffic signals. With a „green corridor „ setup , a vehicle passing through a green signal will continue to receive green signals as it travels down the road.

In additional to the green corridor path, the system will track a emergency vehicle like ambulance and fire bridged when passes through a traffic light. Advantage of the system is that GPS inside vehicle does not require additional power. The biggest disadvantage of green corridor is that, when the wave is disturbed, the disturbance can cause traffic problem that can be exacerbated by the synchronization.

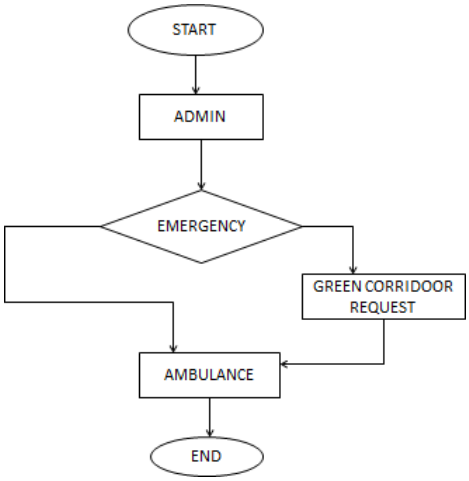
In such cases, the queue of vehicles in a green corridor grows in size until it becomes too large and some of the vehicles cannot reach the green lights in time and must stop. To help the user and to provide various facilities we compared and analyze similar projects so that to provide best facilities as compared to all other similar projects as follows:-

The intelligent traffic control system using RFID and Cloud uses an android application, use of RFID(Radio Frequency Identification) and also cloud database. The main disadvantage of this project is the use of RFID, because the range of RFID sensors is very limited and cannot be detected soon. Whereas in our project we are using image processing which does not require any range.[1]

The intelligent traffic control system for congestion control using image processing, ambulance clearance, and stolen vehicle detection uses ZigBee. This project focuses more on traffic congestion. Also using ZigBee adds more heaviness to the project and also the problem of range continues here also.[2]

The smart traffic control system using image processing uses image processing for traffic congestion control. This project also mainly focuses on traffic congestion.[3]

The image processing based adaptive traffic control system used image processing as well as artificial intelligence. The use of image processing as well as artificial intelligence will add load to the system.[4].



III. PROJECT WORK

We will create an android application for the ambulance. Through that application the ambulance driver can register the case of emergency. When the ambulance will be approaching the signal the image processing will then determine from where is the ambulance coming. it will stop performing the normal operation of the signals and will stops all the signals leaving the one through which the ambulance needs to pass.

We will connect the traffic signals control system through your application so that the entries should be stored in the database. Also connect the image processing to the traffic signals. We need to also learn how to manipulate the traffic signals.

We plan the development this project in below mentioned modules.

Module 1: Admin
Module 2: Driver/Ambulance
Module 3: Controlling Signals

A. Module 1: Admin Module

This module is fully responsible for providing the route to the drivers of the ambulance. Also it will monitor and track the ambulance from where it is arriving and where it is going.

B. Module 2: Driver/Ambulance

This module is responsible for sending the request to the admin to get permission to reach to the location. As soon as the driver sends request he will have to wait for the route. After the route is decided, the driver will then send request to the cloud database to create green corridor.

C. Module 3: Controlling signals

This module is a module dedicated to the manipulation of the signals. As soon as the cloud gets the request, the cameras will be activated for image processing. Once the ambulance is spotted then it will verify and provide a green corridor.

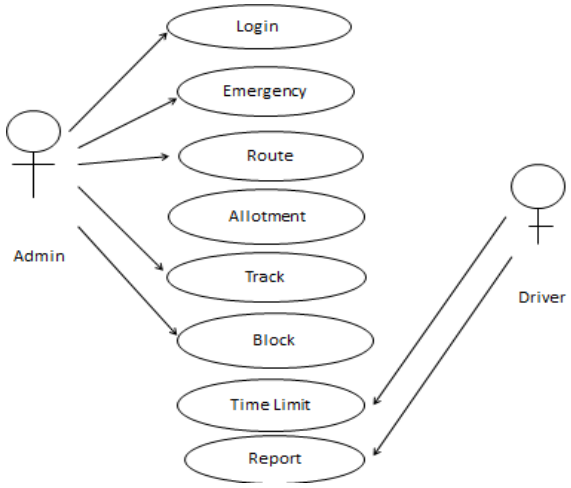


Fig. 1 Use Case Diagram

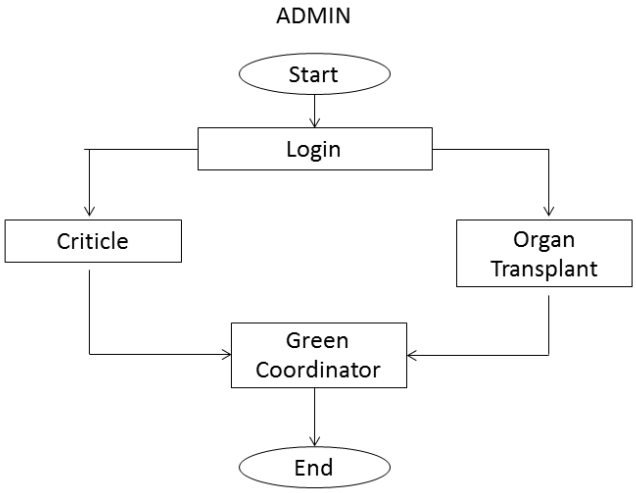


Fig. 2 Flow Chart for Admin

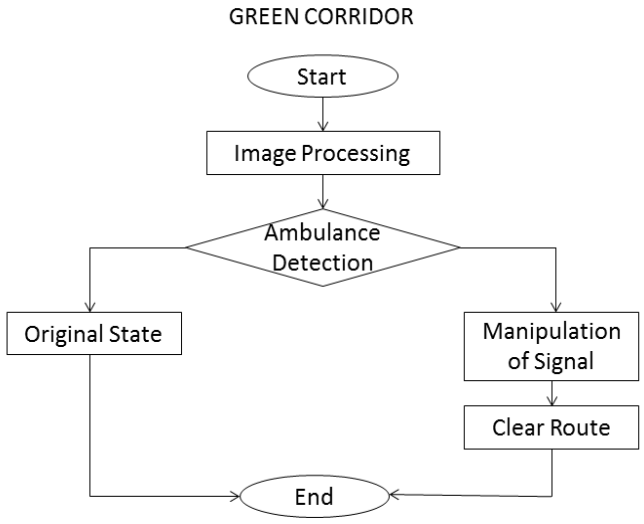


Fig. 3 Flow Chart for Green Corridor

CONCLUSION AND DISCUSSION

This system is useful for smart controlling for ambulance. It provides a platform for the death trolls to be reduced. Using this system a smart traffic control system will also take place.

In this project we came to know to that using image processing will put less load on the project. Also, using various devices will lead to lot of bulkiness to the project.

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