# DESIGN AND IMPLEMENTATION OF SMART MOVABLE ROAD DIVIDER USING IOT

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## ABSTRACT

Road Divider is generically used for dividing the Road for ongoing and incoming traffic. This helps keeping the flow of traffic. Generally, there is equal number of lanes for both ongoing and incoming traffic. For example, in any city, there is industrial area or shopping area where the traffic generally flows in one direction in the morning or evening. The other side of Road divider is mostly either empty or under- utilized. This is true for peak morning and evening hours. This results in loss of time for the car owners, traffic jams as well as underutilization of available resources. Our idea is to formulate a mechanism of automated movable road divider that can shift lanes, so that we can have more number of lanes in the direction of the rush. The cumulative impact of the time and fuel that can be saved by adding even one extra lane to the direction of the rush will be significant. With the smart application proposed below, we will also eliminate the dependency on manual intervention and manual traffic coordination so that we can have a smarter traffic all over the city. An Automated movable road divider can provide a solution to the above-mentioned problem effectively. This is possible through IOT. IOT refers to Internet of Things where the actual digitalization comes into picture. Here sensors play a major role. We can achieve this using Arduino board. The sensors placed on the dividers sense the flow of traffic whether flow of traffic is smooth or not? If the flow is smooth on either side then there is nothing to worry but the lane which is having more traffic, the divider is moved to a certain distance to the smoother lane in order to smoothen the busy lane

## I.INTRODUCTION

The problem with Static Road Dividers is that the number of lanes on either side of the road is fixed. Since the resources are limited and population as well as number of cars per family is increasing, there is significant increase in number of cars on roads. This calls for better utilization of existing resources like number of lanes available. The main aim of this project is to take the traffic controlling to a new era. The mission of this project is to; ¾ To avoid the traffic congestion. ¾ To control high Traffic intensity ¾ To reduce time of journey in rush hours number of lanes on either side of the road is fixed. Since the resources are limited and population as well as number of cars per family is increasing, there is significant increase in number of cars on roads. This calls for better utilization of existing resources like number of lanes available.

The scope of the project is which Deals with internet of things to reach every individual who drive their vehicles to avoid problems occurred during journey like traffic congestion. Figure 1 & 2 explains about the structure and working of ultrasonic sensor.

## II.EXISTING SYSTEM

Barrier transfer machines, conjointly called zipper machines or road zipper, area unit significant vehicles accustomed transfer concrete lane dividers, like jersey barriers, that area unit accustomed relieve hold up throughout rush hours. Several alternative cities use them briefly throughout construction work. The lanes created by the machine area unit generally cited as zipper lanes. One advantage of barrier systems over alternative lane management treatments (i.e.: cones, overhead directional lights) is that a solid, positive barrier prevents vehicle collisions because of motorists crossover into opposing traffic flow. a drawback is that lane widths is slightly reduced

## III.PROPOSED SYSTEM

To reduce the holdup, we tend to propose our plan of dominant the road divider for an additional lane as per would like with the assistance of IOT.

1. As per the holdup ascertained in our lifestyle through the time period cameras.

2. We gather the info collected from the cameras and send them to cloud for analyzing the traffic.

3. In analysis half, the info are going to be analyzed mistreatment raspberry pi through image process.

4. After analyzing, the required action is performed whether or not to push/pop the divider.

5. To build the higher than aforesaid proposal we tend to need ton of funds and time.

## IV.LITERATURE SURVEY

### K.Vidhya, A.Bazila Banu, Density Based Traffic Signal System", Volume 3, Special Issue 3, March 2014

The project is aimed at designing a density based dynamic traffic signal system where the timing of signal will change automatically on sensing the traffic density at any junction. Traffic congestion is a severe problem in most cities across the world and therefore it is time to shift more manual mode or fixed timer mode to an automated system with decision making capabilities. Present day traffic signaling system is fixed time based which may render inefficient if one lane is operational than the others. To optimize this problem we have made a framework for an intelligent traffic control system. Sometimes higher traffic density at one side of the junction demands longer green time as compared to standard allotted time We, therefore propose here a mechanism in which the time period of green light and red light is assigned on the basis of the density of the traffic present at that time. This is achieved by using PIR(proximity Infrared sensors). Once the density is calculated, the glowing time of green light is assigned by the help of the microcontroller (Arduino). The sensors which are present on sides of the road will detect the presence of the vehicles and sends the information to the microcontroller where it will decide how long a flank will be open or when to change over the signal lights. In

subsequent sections, we have elaborated the procedure of this framework. In today's high speed life,traffic congestion becomes a serious issue in our day to day activities. It brings down the productivity of individual and thereby the society as lots of work hour is wasted in the signals. High volume of vehicles, the inadequate infrastructure and the irrational distribution of the signaling system are main reasons for this chaotic congestions. It indirectly also adds to the

increase in pollution level as engines remain on in most cases, a huge volume of natural resources in forms of petrol and diesel is consumed without any fruitful outcome. Therefore, in order to get rid of these problems or at least reduce them to significant level, newer schemes need to be implemented by bringing in sensor based automation technique in this field of traffic signaling system.

**Block diagram**
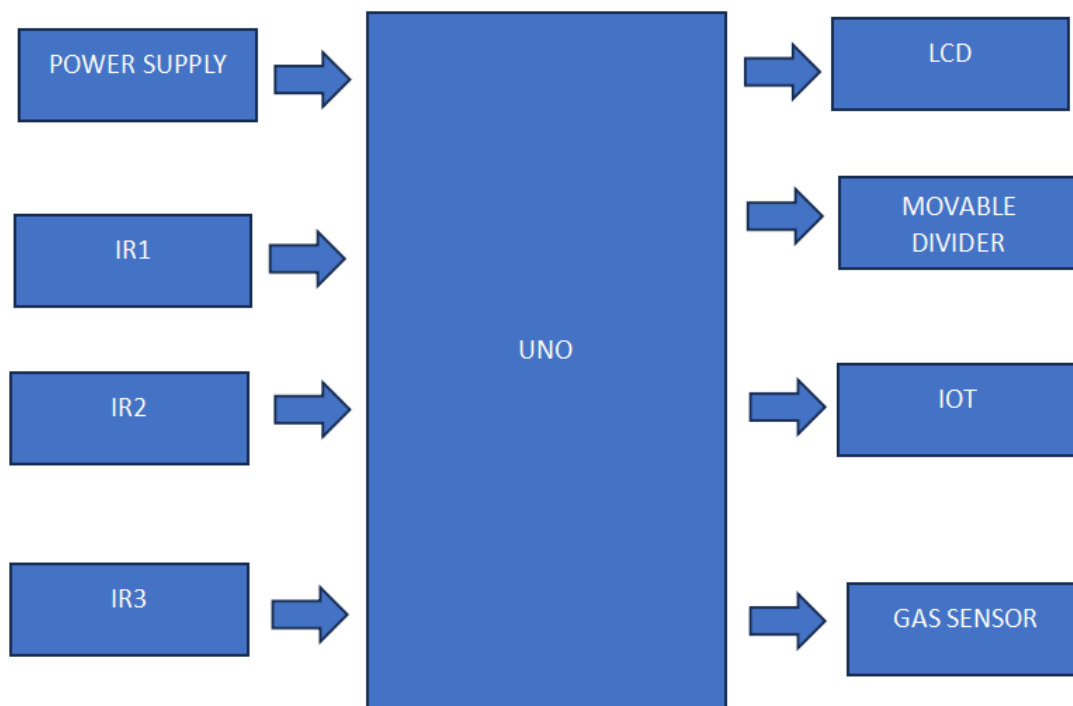


**V.CONCLUSION**

This projected system reduces the chances of traffic jams, caused by high red lightweight delays and provides the clearance to the emergency vehicle, to an extent and successfully. Here we have a tendency to design the system with the purpose to clear the traffic in accordance with priority. In this system, we discover the traffic density victimization Morphological filtering, and Blob analysis. The road with the very best priority is cleared 1st. The

projected system conjointly provides importance to the motorcar. If any ambulance is waiting in a very signal then the actual lane is given the next priority and also the traffic in this lane is cleared. Emergency vehicle is detected by victimization image processing. Whenever the emergency vehicle enters the lane, by victimization camera image, Morphological filtering and blob analysis detects vehicle and sends it to small controller. Small controller provides the high priority to the lane with the emergency vehicle and clears that particular lane.

## VI.REFERENCES

[1] K.Vidhya, A.Bazila Banu, Density Based Traffic Signal System", Volume 3, Special Issue 3, March 2014

[2] Priyanka Khanke, Prof. P. S. Kulkarni , "A Technique on Road Tranc Analysis using Image Processing", Vol. 3 Issue 2, February 2014.

[3] Rajeshwari Sundar, Santhoshs Hebbar, and Varaprasad Golla, Implementing intelligent Traffic Control System for Congestion Control, Ambulance Clearance, and Stolen Vehicle Detection" IEEE Sensors Journal, Vol. 15, No. 2, February 2015

[4] Ms.Pallavi Choudekar, Ms.Sayanti Banerjee , Prof.M.K.Muju, Real Time Traffic Light Control Using Image Processing" Vol. 2, No. March.

[5] Shabbir Bhusari, "Traffic control system using Raspberry-pi", Global Journal of Advanced Engineering Technologies ISSN (Online), Volume 4, Issue 4- 2015, pp 413-415.MARCH 2015.

[6] S.Lokesh, "An Adaptive Traffic Control System Using Raspberry PI", International journal of engineering sciences & research Technology, IEEE conference June 2014, pp 831-835.

[7] Soufiene Djahel, "Reducing Emergency Services Response Time in Smart Cities: An Advanced Adaptive and Fuzzy Approach", IEEE 2015, pp 978- 986

[8] George Kiokes, "Development of an Integrated Wireless Communication System for Connecting Electric Vehicles to the Power Grid", IEEE conf. 2015, pp 296-301.

[9] Victor Welikhe, "Graph Neuron based Approach to Smart Roads Solutions using Wireless Sensor Networks", IEEE 2014, pp 275-279