Survey on Movable Road Divider for Organized Vehicular Traffic Control with Monitoring Over Internet of Things (IOT)

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ABSTRACT

Our intention is to formulate a mechanism of automated avenue divider that could shift lanes, so that we can have quantity of lanes within the direction of the frenzy. The cumulative impact of the time and fuel that can be saved with the aid of including even one more lane to the course of the frenzy can be tremendous. With the smarter planet application proposed underneath, we will additionally eliminate the dependency on manual intervention and guide visitor's coordination in order that we can have a smarter visitors everywhere in the city. An automated road divider can offer a solution to the above mentioned problem efficaciously. Right here Low, Medium and high density of site visitor's price will be published on IOT server as a graph. Also right here we are detecting ambulance. If ambulance detects ship facts wirelessly via RF. that time best one sign goes inexperienced.

Keywords : Internet of Things, smarter visitors, Arduino Uno microcontroller

I. INTRODUCTION

A consistent boom in metro-metropolis populace, the wide variety of automobiles and automobiles will increase unexpectedly and metro visitors is growing crowded which results in the traffic jam hassle. This proposed gadget will have effective role to avoid the site visitor's jam.

A: under regular conditions, visitors indicators manipulate particularly has defects:

Whilst the site visitor's lane waits until the inexperienced light, time placing is sort of same and fixed. A-avenue changed into always crowded with automobiles and move-beforehand time is brief. So,

motors can't skip thru in the time allowed. However sub lane has few automobiles and move-in advance time is noticeably lengthy.

Emergency motors aren't taken into consideration. (as an instance, fire engines and ambulances have priority over other visitors. The two lanes must both wait them to pass via.) because the site visitors mild manage gadget is loss of emergency measures, the crossroads usually meets a visitors jam and results in needless financial losses.

B: Heavy visitors Jams

With increasing variety of cars on street, heavy traffic congestion has extensively expanded in

important towns. This occurred normally at the principle junctions generally inside the morning, before workplace hour and inside the evening, after office hours. The principle effect of this matter is multiplied time wasting of the human beings on the street. The answer for this problem is by way of developing the program which specific setting delays for one-of-a-kind junctions. The put off for junctions which have high quantity of traffic have to be putting longer than the postpone for the junction that has low of visitors. This operation is calling regular Mode.

II. OBJECTIVE

- Resolve the traffic congestion problem
- Pave the way to emergency vehicle
- Locate the signal violators

III. III. LITERATURE SURVEY

Here we discussed the literature review of existing techniques:

Hemlata Dalmia, Kareddy Damini, Aravind Goud Nakka [1] Implementation of Movable Road Divider using Internet of Things (IOT) The purpose of using road divider is to separating the two ways of traffic i.e. ongoing and incoming vehicles in the traffic. With growing population, the vehicles used per family increases, but there is limitation in resources and leads to more number of cars on roads. In that case static road divider fixes the number of road lines on either side of road. This invites the better usage of available resources. In most of the cities, there are areas like industrial and shopping places where traffic flows only in one direction both in morning as well as in evening. In the peak hours, most of the time one road side is unutilized. It causes time loss of public and traffic jams.

B Durga Sri1, K Nirosha1, Sheik Gouse1 [2], Design and Implementation of Smart Movable Road Divider using

IOT 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 result in loss of time for the car owners, traffic jams as well as underutilization of available resources.

Andreas Geiger and Martin Lauer [3], A Generative Model for 3D Urban Scene Understanding from Movable Platforms 3D scene understanding is key for the success of applications such as autonomous driving and robot navigation. However, existing approaches produce a mild level of understanding, e.g., segmentation, object detection, or are not accurate enough for these applications, e.g., 3D pop-ups. In this paper we propose a principled generative model of 3D urban scenes that takes into account dependencies between static and dynamic features. We derive a reversible jump MCMC scheme that is able to infer the geometric (e.g., street orientation) and topological (e.g., number of intersecting streets) properties of the scene layout, as well as the semantic activities occurring in the scene, e.g., traffic situations at an intersection.

Advait Kawle, Dhruv Shah, Kavin Doshi, Manish Bakhtiani, Yash Gajja, Pratibha Singh, [4] Movable Traffic Divider: A Congestion Release Strategy
In recent years, with an ever increasing rate of development in metro cities around the world, there has been proportional increase in numbers of automobiles on the roads. Although the number of vehicles using the roads has increased, the static road infrastructure is almost the same and is unable to cope with changes like congestion, unpredictable travel-time delays and road-accidents that are taking a serious shape. Traffic congestion has been one of the

major concerns faced by the metropolitan cities today in spite of measures being taken to mitigate and reduce it. It has emerged as one of the main challenge for developers in urban areas for planning of sustainable cities.

Mohammad Shahab Uddin, Ayon Kumar Das, Md. Abu Taleb [5] Real-time Area Based Traffic Density Estimation by Image Processing for Traffic Signal Control System: Bangladesh Perspective.

Traffic congestion is a daily occurrence in most urban areas of Bangladesh now a day. In the last 10 years the scenario has worsen due to rapid increase of vehicles and insufficient roads to accommodate them. This paper describes a method of real time area based traffic density estimation using image processing for intelligent traffic control system. Area occupied by the edges of vehicles will be considered to estimate vehicles density. Calculating the areas of different live roads, the system will automatically estimate the traffic density of each road which will help to determine the duration of each traffic light. An intelligent traffic signal control system with the proposed traffic density estimation technique will be far better than the conventional timer based system of Bangladesh.

R. Bhargavi Devi, D. Kavya Reddy, Density Based Traffic Signal System Using Arduino Uno [6]

Present era controlling traffic became very arduous because of increase in the automobiles such as cars, bikes, etc. Due to this, there is a longer time delays in the signalling systems. In order to overcome this problem, we have designed the density based traffic

signal with a delay of 1000ms to control the traffic based on density at the crossings or four-side lane or roads system using Arduino Uno ATMega 328P.

Mario Collotta, Giovanni Pau, Gianfranco Scatà, and Tiziana Campisi [7] A Dynamic Traffic Light Management System Based On Wireless Sensor Networks For The Reduction Of The Red-Light Running Phenomenon.

The real-time knowledge of information concerning traffic light junctions represents a valid solution to congestion problems with the main aim to reduce, as much as possible, accidents. The Red Light Running (RLR) is a behavioural phenomenon that occurs when the driver must to choose to cross (or not) the road when the traffic light changes from green to yellow. Most of the time the drivers cross even during transitions from yellow to red and, as a consequence, the possibility of accidents increases. This often occurs because the drivers wait too much in the traffic light queue as a consequence of the fact that the traffic light is not well balanced. In this paper we propose a technique that, based on information gathered through a wireless sensor network, dynamically processes green times in a traffic light of an isolated intersection. The main aim is to optimise the waiting time in the queue and, as a consequence, reduce the RLR phenomenon occurrence.

The overall finding of the above discussion is given below as Table-2

IV. COMPARATIVE ANALYSIS OF THE SYSTEMS

Sr. No.	Author and Paper Title	Publication Details	Work Carried Out So Far	Draw Backs
1	T Naga Raju K RajSekhar Smart Traffic Light Control System for Emergency and Detection of Stolen Vehicles "	International Journal of Advanced Research in Science, Engineering and Technology Vol. 1, Issue 5 , December 2014	RFID concept is used to make green for the Ambulances lane and thus providing a stoppage free way for the Ambulance	SMS can be used to make the alert on mobile.
2	Sabhijiit Singh Sandhu Naman Jain Aditya Gaurav "Agent Based Intelligent Traffic Management System for Smart Cities"	International Journal of Smart Home Vol. 9, No. 12, (2015)	This technique only requires the use of just one physical component (a camera) and everything else is software based, thereby saving setup cost as well as time otherwise spent in installation.	Image processing technology is used here which can give the misleading results if the road scanned is having garbage.
3	Oladipo Onaolapo Francisca "Design and Simulation of Intelligent Traffic Control System"	IIJAET International Journal of Advances in Engineering and Technilogy, November 2015	Designed system for Intelligent traffic control based upon the the number of vehicles at the traffic signal Feature use: SSADM and Fuzzy logic control system	Overhead of Complex technology. System designed only for specific traffic signal patterns such as crossroads "+".

V. PROPOSED SYSTEM

Traditional road dividers have a fixed position and are highly inefficient during peak hours. This leads to chaos and confusion among the commuters which leads to delay in travelling time. Often during peak hours the traffic in one direction is way more than that coming from the opposite direction, while the number of lanes available to both sides remains the same. A solution to this problem is to make the road divider movable. To do this, earlier zipper machines [5] were used, which transfer the movable barrier from one lane to the adjacent one. But this prototype mechanism is automatic.

Our Proposed system will move the road divider using DC motor. The dividers will be analogous to the dividers used with zipper machines but instead of these dividers being moved by the machine we will use an embedded system which will control the moment of the dividers. The dividers will shift according to the signals sent to the embedded system by the system administrator. This will be done by using a IOT module, a database will be configured and

when updated and the data is sent to the embedded system will change the state of the divider. Along with a database, the cloud will also contain a log which will contain the history of states of the barrier system over time. This cloud can be accessed through any portal that supports cloud computing i.e. any web based platform or application. A User Interface will contain a login form which will authenticate the administrator and grant access to the database that will contain information related to the system.
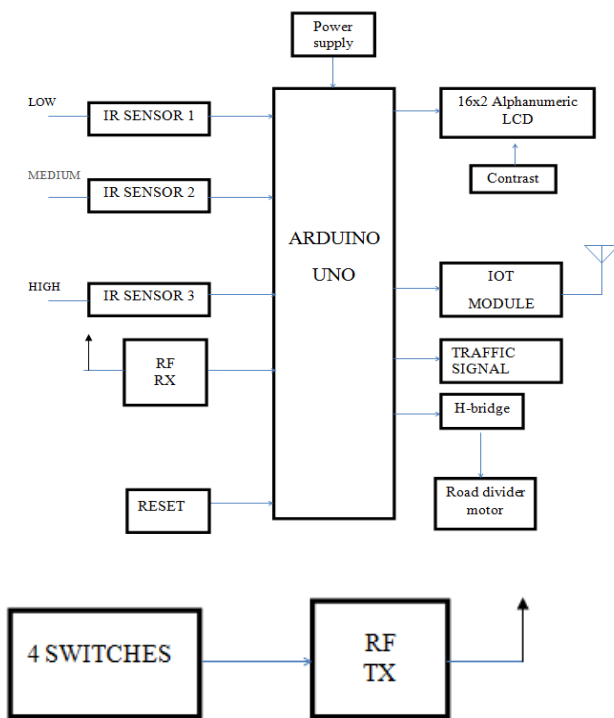

Fig 1. Block Diagram

VI. CONCLUSION

We examine the in this challenge we added sensor based totally technology for visitors control. We finish that it provides effective answer to improve existing device with the new smart site visitors light controller. The technique of vehicle detection and counting from a IR sensor has been carried out the use of ARDUINO improvement board and Arduino Uno microcontroller. similarly change within the algorithm can improve the device accuracy. Proposed machine can have wider destiny scope. That consumer can get site visitors facts on pc or laptop.

VII. ACKNOWLEDGEMENT

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