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SMART MOVABLE ROAD DIVIDER AND CLEARENCE AMBULANCE PATH USING IOT

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ABSTRACT

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. ● 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. ● Our aim is to formulate a mechanism of automated road divider that can shift lanes, so that we can have 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.so that we can have a smarter city traffic all over the city**.**

INTRODUCTION

Wireless communication has become an important feature for commercial products and a popular research topic within the last ten years. There are now more mobile phone subscriptions than wired-line subscriptions. Lately, one area of commercial interest has been low-cost, low-power, and short-distance wireless communication used for \personal wireless networks." Technology advancements are providing smaller and more cost effective devices for integrating computational processing, wireless communication, and a host of other functionalities. These embedded communications devices will be integrated into applications ranging from homeland security to industry automation and monitoring. They will also enable custom tailored engineering solutions, creating a revolutionary way of disseminating and processing information. With new technologies and devices come new business activities, and the need for employees in these technological areas. Engineers who have knowledge of embedded systems and wireless

communications will be in high demand. Unfortunately, there are few adorable environments available for development and classroom use, so students often do not learn about these technologies during hands-on lab exercises. The communication mediums were twisted pair, optical fiber, infrared, and generally wireless radio.

in 1961. It was built from transistor logic and had a hard disk for main memory. When the Minuteman II went into production in 1966, the D-17 was replaced with a new computer that was the first high-volume use of integrated circuits.

Literature Review

1. Mrs G .Anitha Chowdary (Associate professor) 2. N. Ganesh 3. M. Venu 4.M. Ranjith Kumar (2,34-Students of Btech, ECE Department -Tkr college of engineering and Technology)© 2023 IJCRT — Volume 11, Issue 4 April 2023 — ISSN: 2320-2882 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. 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. Our aim is to formulate a mechanism of automated road divider that International Journal of Research Publication and Reviews, Vol 4, no 11, pp 1733-1738 November 2023 1734 can shift lanes, so that we can have 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.so that we can have a smarter city traffic all over the city. 2. Subhashitha D, [2] Dr. Mukthi S L [1] PG Student, [2] Asst. Professor [1][2] VLSI Design and Embedded Systems,Bangalore Institute of Technology, Bengaluru, INDIA International Journal of Engineering Research in Electronics and Communication Engineering (IJERECE) Vol 8, Issue 7, July 2021 Basically a road divider is used as a barrier to separate the road for the vehicles which are moving in two different directions. As we have seen around us these road dividers are static i.e., they cannot be shifted/moved from one place to another. We have also witnessed a very high traffic only on one side of the road during peak/rush hours. When there is a high traffic it causes accidents and also many emergency vehicles get stuck in this traffic, which may result in loss of life. Therefore an efficient system is proposed here where smart movable road divider is implemented which will work based on the road density. The

ambulance priority system is also included here which provides a free path for the ambulance using RFID tags and RFID reader. Vehicle signal violation can also be detected in this proposed project. 3. Sandeep S Baragoor, Thanmai N, Sandeep S Javaller International Journal of Engineering Research Technology (IJERT) Published by : Vol. 10 Issue 07, July-2021 Traffic congestion is one of the biggest problems faced in recent times. So the main aim of this project is to reduce it but providing an effective solution to it. Generally, there's equal width of lanes for both on-going and incoming traffic. The problem with Static Road Dividers is that the number of lanes on either side of the road is fixed. Population as well as number of cars per family is increasing, thereby increasing the number of cars on roads. This involves better utilization of existing resources like number of lanes available. Even though with the advancements in technology, there has been no proper solution to overcome this problem. Traffic congestion has been one among the main concerns faced by the metropolitan cities today in spite of measures being taken to mitigate and reduce it. It has emerged together of the most challenge for developers in urban areas for planning of sustainable cities. The main focus of this study is aimed to provide a better, effective and efficient way of solution. 4. Sowjanya K N1 , Nikhil Jamadagni H M2 , K Unnimaya3 , Bhavana G4 Student, Dept. of Electronics and Communication, KS Institute of Technology, Bangalore, Karnataka. International Advanced Research Journal in Science, Engineering and Technology Vol. 8, Issue 7, July 2021 "This paper presents Smart Movable Road Divider for controlling the traffic congestion in metropolitan cities and to provide a free path for the ambulance. The work presented in this paper focuses on reducing the latencyin traffic and free path for ambulance. The existing Road Dividers consists of equal number of lanes. Usually, in morning and evening peak hours the opposite side of the Road Divider is generally underutilized. To overcome this, Smart Movable Road Divider is implemented where the divider is moved based onthe density of the traffic using IRSensors. If the density of the traffic is high on one side, the divider is moved to the other side. Then the density of traffic is stored in cloud which is possible through IoT. A free path for Ambulance is provided using RF Module by controlling the traffic signal. A Prototype is developed and tested for the Congestion control which also works on safety measures by intimating the drivers about the movement of the Divider

Proposed System:

Inductive Loop Detectors: Embedded in the road surface, these sensors detect the presence of vehicles by measuring changes in the inductance of the coil when a vehicle passes over it.

IR sensors are a vital component of many electronic devices, from smartphones and remote controls to security systems and medical equipment. Here are a few pictures of different types of IR sensors

This is a common type of IR sensor that is used in a variety of applications. It consists of an infrared emitter and an infrared receiver. The emitter emits infrared radiation, which is reflected off of objects in the sensor's field of view. The receiver detects the reflected radiation and generates an electrical signal that is proportional to the amount of radiation that is detected.

Cameras: Analyze real-time video footage to identify and track individual vehicles, providing detailed information about traffic volume, vehicle types, and lane occupancy.

Conclusion:

Before starting this project a survey was done regarding the traffic density problem which was faced by many countries. The main aim was to provide a better solution to the traffic problem and to save lives. So this efficient system was designed and tested for the same. With the help of the smart divider traffic blocking problem was reduced. Whereas by using RFID system a free path was provided for emergency vehicles in a two way road and also signal violations were detected easily.

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