ISSN 2395-695X (Print)
ISSN 2395-695X (Online)
Available online at www.ijarbest.com

International Journal of Advanced Research in Biology Ecology Science and Technology (IJARBEST)
Vol. I, Special Issue I, August 2015 in association with VEL TECH HIGH TECH DR. RANGARAJAN DR. SAKUNTHALA ENGINEERING COLLEGE, CHENNAI
National Conference on Recent Technologies for Sustainable Development 2015 [RECHZIG'15] - 28th August 2015

Implementing Smart Transportation Arrangement,Traffic Jam Control,Emergency Vehicle Endorsement And Detection Of The Theft Vehicle.

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ABSTRACT:

This paper gives an idea about smart transporatation arrangement and how the emergency vehicles pass by smoothly. Each vechicle should contain a special equipment called [Radio Frequency Identification RFID]tag which cannot be removed or destoryed ."Using RFID reader NSK EDK-125-TIL and P1C167877A system on chip". which is used to read the RFED tag, that is attached in vehicles. It calculate the no.of vehicles pass by during the particular period. It also examine network congestion. And also green light duration for that path,suppose RFID-tag read belong to the theft vehicle,then a message is sent to police control room through GSM SIM300.Addition to,if an ambulance is nearily the junction,it will communicate to traffic controlled in order to turn on the green light.For wireless commnuciation between ambulance and traffic controller by a module uses zigbee modules on CC2500 and PIC16F877A system on chip.Different combination input by using prototype was tested using communication lab and expected results were found.

1.INTRODUCTION:

INDIA is the second largest country in population. And it is growing fastly in economics.It is facing traffic problems in cities. Number vehicles growing day-by-day. Indian transportsystem is chaotic. It needs a solutions to overcome this problems.nowadays wireless networks are used in transport . some technologies like zigbee,rfid,gsm used to control traafic problems. RFID is a wireless technology. It uses radio frequency electromagnetic energy and this will transfer the information between RFID TAGS and RFID READER. RFID systems can work in two ranges. The first may work upto certain inches or centimetres and the other may work for 100 meters or more. GSM is a type of modem, it accepts sim card and operates over a subscription to a mobile operator , like a mobile phone.for controlling the modem AT commands are used. The zigbee works at low power and also operates in ISM bands.transmission range varies from 20kbps in 868 MHZ frequency band to 250 kbps in 2.4 GHZ frequency band. CSMA ana slotted CSMA/CA are the two channels used here. The full paper is separated into parts section II literature survey . section III discuses the problem for making way to ambulance an d other vehicle It tells about the proposed model in developing and developed countries. Section IV discuss about implementation details of proposed model. Section V gives enhancement work.

II. LITERATURE SURVEY.

Traffic is the major problem in cities of developing country. Due to growth in population and migration number of vehicles increases day-by-day.Due to the congestion travel time increases. Green way system was used to provide clearance of any emergency vehicle by turning red light to green light on that path. Synchronization of green phase of traffic signals is 'green wave'.green light is received until the vehicle travels down the road. And also it will identify the theft vehicle when it passes the traffic signal. Additional power is not needed for the gps which is inside the vehicle is the advantage of it.

The disadvantage is if the wave is disturbed , causes disturbances in traffic problems that can be exacerbated by synchronization. In such case the queue of vehicle increases.RFID transportation control to avoid problems that arises with transportation control sytems, prominently those related to image processing and beam interruption techniques are discussed.

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A dynamic time scheduleis worked in real time system and it is efficient time management scheme.this is useful for traffic policeman to take decision on duty.the disadvantage is the methods used for communication between emergency vehicle and traffic control system is not discussed.the main objective is to reduce the waiting time of emergency vehicle by clearing the traffic lane and reach the destination on correct time.RFID distinguish the emergency and non emergency vehicle. If the emergency vehicle is at certain distance automatically the traffic light turns on to green.the communication of traffic signal and emergency vehicle is carried out by gps and transceivers. Advantage of this system does not need human intervention and fully automated . The system needs information about starting point and terminating point. If the emergency vehicle takes another route for any reason the system may not work. It should be known before. This is the disadvantage.

Traffic is the major issue in transportation system. The major affected countries are INDIA ,CHINA. Bangalore city, is an example for phenomenon growth in vehicle in usage. In some of the central area the average speed is lower than 10km/h. In Bangalore city video traffic surveiallance and monitoring system is commissioned currently. The data is analysed manually bytraffic management team ehich isused to analyse the traffic light duration in junction. For some necessary actions it will communicate the same to police officers.

III. EXISTING MODEL:

Technologies which are currently existing are insufficient in handling congestion control problems, clearance of emergency vehicle, detection of stolen vehicles etc., in order to solve the problems, we can implement intelligent traffic control system , which consists of three divisions. First division includes automatic control system. Each and every vehicle should be equipped with an RFID tag. When it arrives at the range of RFID reader signal can be send to the RFID reader. RFID reader can able to detect the number of vehicles travelled on for a particular time period and also the RFID reader can be able to determine the volume of congestion. Considering these details, duration of green light for a particular path can be set. Second division includes emergency vehicle clearance consists of ZigBee transmitter module and ZigBee receiver module, which can be used at traffic junction. During an emergency purpose of a vehicle,the buzzer is switched on. When the switch is ON , signal is transmitted from ZigBee transmitter to receiver. When the signal is transmitted the traffic light changes to green. After the emergencypurpose on using the vehicle is over , then the signal transmission from ZigBee transmitter to ZigBee receiver signal and the traffic light changed to red.the third division is detecting theft vehicles, here the RFID reader reads the RFID tags after read, it is compared with stolen RFID list. If it can be able to find a match it immediately sends sms to police control and the traffic light changed to red in turn of stopping the vehicle in that junction, then local police takes proper action. Components used in experiments are CS2500RF module, microchip PIC16F877A, RFID Reader -125KHz-TTL and SIM300 GSM module

A. Microcontroller (PIC16F877A):

When comparing to other series peripheral interface control(pic) 16F series has a lot of merits.It will takes 200 nano seconds to execute every instruction and consist of 8K program memory,40 pins and 368 byte data memory.It is easy way of storing.the large number of vehicles is to store at the junction.It should satisfy all the conditions before switching to green.Interrupt options will gives advantages(jumping from one loop to another) and very

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simple and easy to switch at any time.It operates by vehicle battery itself without any extra hardware and also consuming very less power.

B. GSM Module SIM 300:

Microcontroller is connected with GSM modem.For communicating over the mobile network,it will allow the computer to use GSM modem.It provide mobile inertnet connectivity ,many of us can be used for receiving and sending SMS and MMS messages,GSM modem are most frequently used."Extended AT command set" must be supported in GSM for sending or receiving SMS or MMs messages.It is one among the cost effective solution for receiving messages because the message delivery is paid by the sender.For designing global market SIM 300 is used and its also a 3-band GSM engine. It contains features GPRS multi-slot class 10/ class 8 (optional) and supports the GPRS coding schemes.Working on frequencies like EGSM 900 MHz,DCS 1800 MHz and PCS 1900 MHz.It also supports some of the extra features like voice,data,SMS,GPRS and integrated TCP/IP stack and GSM modem is a highly flexible plug and play guard band GSM modem,interface to RS232.It is widely used by AC-DC power adapter with following ratings DC voltage 12V/1A and can also be controlled via AT commands(GSM 07.07,.07.05 and enhanced AT commands).

C. RFID Reader–125 kHz–TTL:

In wireless communication which transmits signals without the presence of physical gadgets using Radio Frequency Identification (RFID) is an IT system.Well established protocol like automatic identification technology is categorized.It is very simple to to work in RFID system.This system utilizes tags which are attached to various components to be tracked.This tags helps to store data and information concerning the details of the product of things to be traced.It will reads the radio frequency and identify the tags.For the integrated circuit to transmit it information to the reader via antenna.There are two kinds of RFID categories they are : active and passive tags. The tags that do not utilize powerpassive if the tags that do not utilize power and that are received by an antenna which enable the tag to receive electromagnetic waves from this reader.

The tags that utilize power called active that are inbuilt power sources which enable to send and receive signals by RFID.The ranges of RFID depends on transmit power, receive sensitivity and efficiency, antenna,frequency, tag orientations, surroundings.Mostly, this ranges from a centimetres to 100 metres.It uses frequency 125Khz with a ranges of 10 cm.

IV PROPOSED MODEL:

There is a problem arises due to considering one road to the traffic junction. It cannot be implemented in multi road junction. To overcome this problem, we can use google map. With the help of the map we can find where the vehicle is located. If the theif chosen the another path that can be also deducted using google map.the information about the stolen vehicle is transfered to the control room. So that the police can take necessary action.

V.CONCLUSION:

The manual effort on the part of the traffic policeman is saved by using google map.Human intervention is minimized because the entire system is automated. With stolen vehicle detection, the signal automatically turns to red, so that the police officer can take appropriate action, eventhough they choose some other path. Emergency vehicles like, fire trucks, ambulance can able to reachtheir destinations quickly,so that the lives can be saved.Currently, we have implemented system by multi road system.

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