Survey on Intelligent Traffic Control System for Congestion Control, Ambulance Clearance, and Stolen Vehicle Detection

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ABSTRACT: Presents a wise movement control framework to pass crisis vehicles easily. Every individual vehicle is furnished with unique radio recurrence ID (RFID) tag (set at a key area), which makes it difficult to evacuate or pulverize. We utilize RFID peruser and microcontroller construct framework with respect to chip to peruse the RFID labels attachedto the vehicle. It tallies number of vehicles that passes on a specific way amid a predefined term. It likewise decides the system clog, and henceforth the green light span for that way. In the event that the RFID-label read has a place with the stolen vehicle, then a message is sent utilizing application to the police control room. Also, when a rescue vehicle is moving toward the intersection, it will impart to the movement controller in the intersection to turn ON the green light. We utilized microcontroller construct framework in light of chip for remote correspondences between the emergency vehicle and movement controller. The model was tried under various mixes of contributions to our remote correspondence research center and test results were found of course.

KEYWARD: FPGA, RFID TAG, GSM MODULE

I. INTRODUCTION

India the second most crowded Country in the World and is a quickly developing economy. It is seeing ghastly street clog issues in its urban areas. Foundation development is ease back when contrasted with the development in number of vehicles, because of space and cost requirements. With globalization and the requirement for versatility energizing activity development everywhere throughout the world, the issue of clog on parkways and in urban communities is turning out to be increasingly intense. Astute activity administrations frameworks are peopling achieve their goals rapidly and securely while at a similar holding movement's ecological effects within proper limits. The objective of wise movement administration frameworks is to accomplish upgrades in portability, security and profitability of the vehicle framework through incorporated use of cutting edge checking, correspondence, show and control prepare advancements both in the vehicle and out and about.

Additionally, Indian movement is nongame based and tumultuous. It needs an activity control arrangements, which are not quite the same as the created Countries. Smart administration of activity streams can diminish the negative effect of blockage. As of late, remote systems are broadly utilized as a part of the street transport as they give more financially savvy alternatives. Advances like ZigBee, RFID and GSM can be utilized as a part of activity control to give financially savvy arrangements. RFID is a remote innovation that utilizations radio recurrence electromagnetic vitality to convey data between the RFID tag and RFID peruser. Some RFID frameworks will just work inside the range inches or centimeters, while others may work for100 meters (300 feet) or more.

A GSM modem is a specializedtype of modem, which acknowledges a SIM card and works over a membership to a versatile administrator, much the same as a cell phone. AT charges are utilized to control modems. These charges originate from Hayes summons that were utilized by the Hayes keen modems.. It works in ISM groups (868 MHz in Europe, 915 MHz in USA and Australia, 2.4 GHz in rest of the world). Information transmission rates change from 20

Kilobits/second in the 868 MHz recurrence band to 250 Kilobits/second in the 2.4 GHz recurrence band. The RF Module utilizes 11 diverts if there should be an occurrence of 868/915 MHz radio recurrence and 16 directs in the event of 2.4 GHz radio recurrence. It likewise utilizes 2 channel arrangements, CSMA/CA and opened CSMA/CA.

II. LITERATURE SURVEY

Presents a savvy movement control framework to pass crisis vehicles easily. Every individual vehicle is outfitted with exceptional radio recurrence ID (RFID) tag (set at a key area), which makes it difficult to expel or devastate. We utilize RFID peruser, NSK EDK-125–TTL, and PIC16F877A framework on-chip to peruse the RFID labels connected to the vehicle. It checks number of vehicles that passes on a specific way amid a predetermined length. It likewise decides the system clog, and consequently the green light term for that way. In the event that the RFID-label read has a place with the stolen vehicle, then a message is sent utilizing GSM SIM300 to the police control room. Furthermore, when an emergency vehicle is moving toward the intersection, it will impart to the movement controller in the intersection to turn ON the green light. This module utilizes ZigBee modules on CC2500 and PIC16F877A framework on-chip for remote correspondences between the emergency vehicle and activity controller. The model was tried under various mixes of contributions to our remote correspondence research center and exploratory outcomes were found obviously.
we proposed an Implementing Intelligent Traffic Control for Congestion, Ambulance leeway, and Stolen Vehicle Detection. This framework was actualized in light of present criteria that following three conditions in those one is overwhelming movement control and another is making a foundation of crisis vehicle like rescue vehicle and VIP vehicle. In this paper we will actualize a sensor organize work which is utilized to identify the movement thickness and furthermore utilize RFID peruser and labels. We utilize ARM7 framework on-chip to peruse the RFID labels connected to the vehicles. It checks number of vehicles that passes on a specific way amid a predefined span. In the event that the RFID label read has a place with the stolen vehicles. GSM SIM300 utilized for message send to the police control room. Furthermore, when an emergency vehicle moving toward the intersection, it will impart the activity controller in the intersection to turn on the green light. This module utilizes Zigbee modules on CC2500 [1].

Canny Traffic Control and Management System which utilizes savvy parts like RFID, IR sensors, microcontroller, and so forth. It likewise comprises of modules for i) Allowing entry of organized vehicles viz Ambulance, VIP, and so on ii) Enabling clients to track their stolen or lost vehicles.iii) Help individuals to get data about the movement thickness in particular territory .iv) Avoiding debasement via mechanized fine finding. RFID labels are utilized for one of a kind ID of vehicles and IR sensors are utilized to get the vehicle check. RFID perusers utilized are having recurrence 125 KHz. PCB (Printed circuit Board) are utilized to mount circuit components[2].

Movement blockage is a noteworthy issue in urban communities of creating Countries like India. Development in urbanpopulation and the white collar class portion devour vehicles to the rising number of vehicles in the urban communities. Blockage on streets in the long run outcomes in moderate moving activity, which builds the season of travel, subsequently be remarkable as one of the real issues in metropolitan urban communities. Crisis vehicles like emergency vehicle and fire trucks need to achieve their goals at the most punctual. On the off chance that they invest a ton of energy in congested driving conditions, esteemed existences of many individuals might be in peril. Here the picture successions from a camera are broke down utilizing different edge location and question checking strategies to get the most effective system. At that point, the quantity of vehicles at the crossing point is assessed and activity is proficiently overseen. The activity flag sign ceaselessly gleams to green the length of the crisis vehicle is holding up at the movement path. After the vehicle crossed the intersection, consequently the movement signals take after the past example era of activity signs. This can be actualized in LABVIEW[3].

canny activity control framework plan of crisis vehicles needs to pass easily. Every individual vehicle is wanted to furnish with uncommon Radio Frequency Identification Tag(RFID) to such an extent that it is difficult to evacuate or wreck tag. Normally RFID peruser and microcontroller on-chip to peruse the RFID labels connected to the vehicle. It tallies number of vehicles that passes on a specific way amid a predefined length utilizing sensors. It likewise decides the system clog, and thus the green light length for that way. On the off chance that the RFID-tagreadbelongs to the

stolen vehicle, then a message is sent to the police control room. Furthermore, when a rescue vehicle is moving toward the intersection, it will impart to the movement controller in the intersection to turn ON the green light[4].

a shrewd activity control framework to pass crisis vehicles easily. Every individual vehicle is outfitted with uncommon RFID tag(placed at a key area), which makes it difficult to evacuate or decimate. We utilize RFID peruser, NSK EDK-125–TTL and PIC16F877A framework on-chip to peruse the RFID labels appended to the vehicle. It tallies number of vehicles that passes on a specific way amid a predetermined span. It additionally decides the system blockage, and consequently the green light term for that way. In the event that the RFID-label read has a place with the stolen vehicle, then a message is sent utilizing GSM SIM300 to the police control room. Likewise, when a rescue vehicle is moving toward the intersection, it will impart to the movement controller in the intersection to turn on the green light. This module utilizes ZigBee modules on CC2500 and PIC16F877A framework on-chip for remote correspondences between the rescue vehicle and activity controller. The model was tried under various blends of contributions to our remote correspondence lab and test results were found not surprisingly [5].

Security and solace of street clients is turning into a matter of huge concern. It is basic to fabricate a more secure and substantially more dependable framework for movement control and management.The primary goal of this venture is to present a framework which distinguishes stop line infringement amid red light running and to catch the invalid permit, Road Tax, FC, protection and skeleton of a vehicle by utilizing Active Radio-Frequency Identification (RFID), Global System for Mobile correspondence (GSM) and Programmable Interface Controller (PIC). This venture comprises of vehicle unit, movement intersection and Road Traffic Officer (RTO) unit. On the off chance that the vehicle crosses the red flag first time then message will be sent to client of the vehicle and RTO with punishment and vehicle points of interest exist in the RFID availablein vehicle unit. In the event that the punishment is not paid inside the course of events or a similar vehicle crosses the red flag second time then vehicle will be back off and halted through GSM by the RTO unit. LCD's put in the vehicle are utilized to show the RC number and to demonstrate the message for back off and stop the vehicle. At the point when the driver slice the association and attempt to drive then the RC number won't be shown on the vehicle which will catch the abused vehicle effectively. A speed sensor is attached to the vehicle, to control the speed of the vehicle when it damages the predefined speed [6].

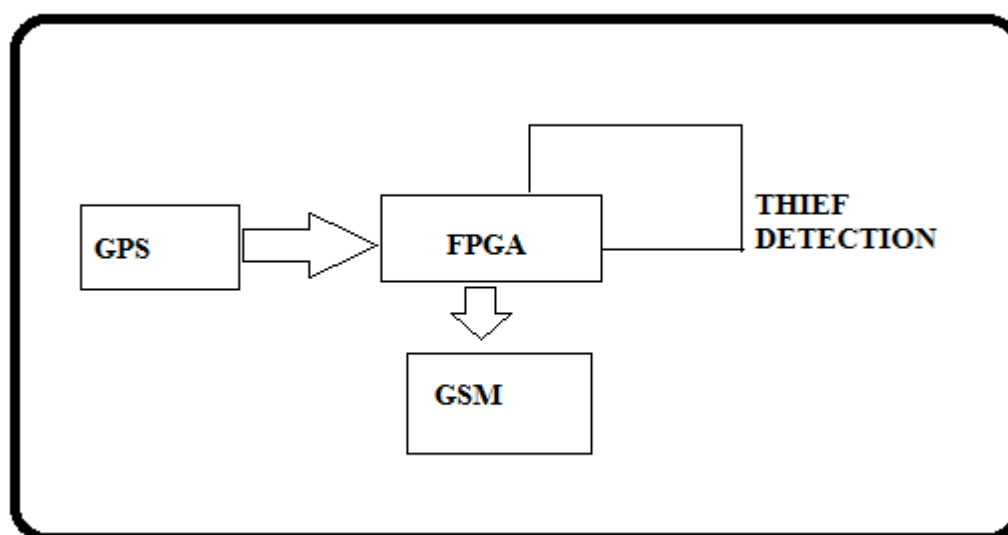## III.   SYSTEM ARCHITECTURE
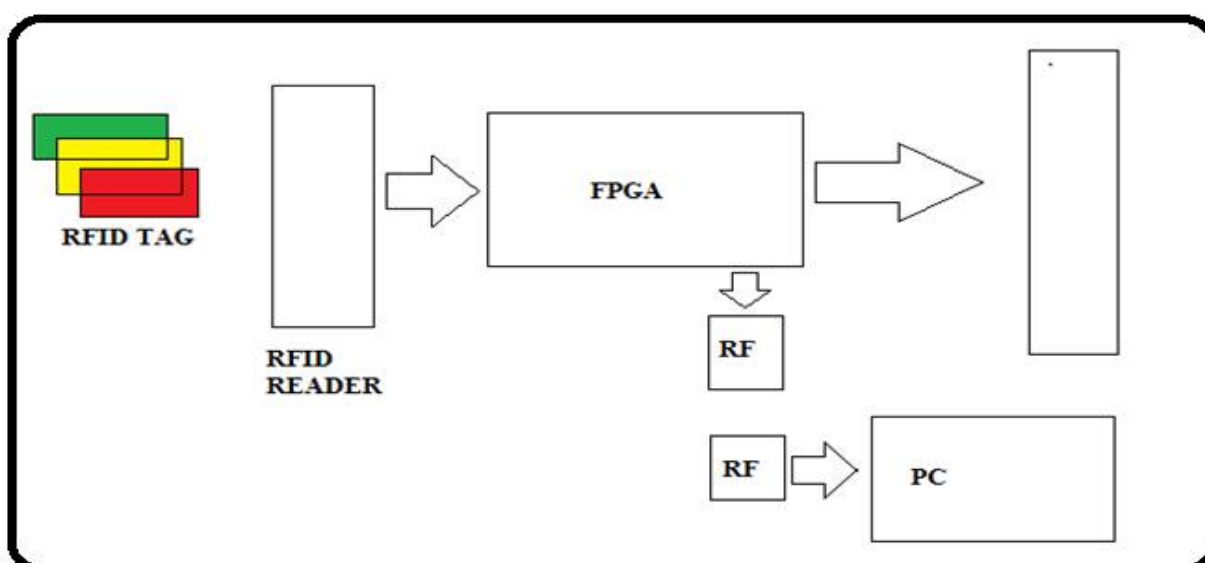
Fig. Block diagram

In our project we propose to implement our Intelligent Traffic Control System. It mainly consists of three parts.

A. First part contains automatic signal control system. Here, each vehicle is equipped with an RFID tag. When it comes in the range of RFID reader, it will send the signal to the RFID reader. The RFID reader will track how many vehicles have passed through for a specific period and determine the congestion volume. Accordingly, it sets the green light duration for that path.

B. Second part is for the emergency vehicle clearance. Here, each emergency vehicle contains RF transmitter module and the RF receiver will be implemented at the traffic junction. The buzzer will be switched ON when the vehicle is used for emergency purpose. This will send the signal through the RF transmitter to the ZigBee/RF module receiver. It will make the traffic light to change to green. Once the ambulance passes through, the receiver no longer receives the RF signal and the traffic light is turned to red.

C. The third part is responsible for stolen vehicle detection. Here, when the RFID reader reads the RFID tag, it compares it to the list of stolen RFIDs. If a match is found, it sends SMS to the police control room and changes the traffic light to red, so that the vehicle is made to stop in the traffic junction and local police can take appropriate action.

D. In the second module if the thief tries to steal the vehicle the detector will break down and the owner and police will get the location massage.

IV. CONCLUSION

With programmed activity flag control in light of the movement thickness in the course, the manual exertion with respect to the activity policeman is spared. As the whole framework is mechanized, it requires less human intercession. With stolen vehicle location, the flag consequently swings to red, so that the cop can make proper move, on the off chance that he/she is available at the intersection. Additionally SMS will be sent so they can get ready to get the stolen vehicle at the following conceivable intersections. Crisis vehicles like emergency vehicle, fire trucks, need to achieve their goals at the most punctual. In the event that they invest a considerable measure of energy in automobile overloads,

valuable existences of many individuals might be in peril. With crisis vehicle freedom, the activity flag swings to green the length of the crisis vehicle are holding up in the movement intersection. The flag swings to red, simply after the crisis vehicle goes through. Facilitate upgrades should be possible to the model by testing it with longer range RFID perusers. Likewise GPS can be set into the stolen vehicle recognition module, so that the correct area of stolen vehicle is known. Presently, we have actualized framework by thinking of one as street of the movement intersection. It can be enhanced by reaching out to every one of the streets in a multi-street intersection.

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