# A Mobile-Based RFID Network To Track The Theft Vehicle

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*Abstract:* **With emergency vehicle clearance, the traffic signal turns to eco-friendly as extended since the emergency vehicle delays inside the traffic junction. Presently, we have implemented system by considering one road inside the traffic junction. It might be improved by extending to everybody the roads inside the multi-road junction. Intelligent control of traffic flows helps to reduce the negative impact of congestion. Lately, wireless systems are broadly utilized all the time transport given that they provide less pricey options. AT instructions are broadly-accustomed to control modems. These instructions are a consequence of Hayes instructions that have been employed by the Hayes smart modems. Once the RFID-tag-read is most likely the stolen vehicle, an e-mail is shipped using GSM SIM300 for your police control room. Additionally, when an ambulance is approaching the junction, it'll communicate for your traffic controller inside the junction to show over the eco-friendly light. This module uses ZigBee modules on CC2500 and PIC16F877A system-on-nick for wireless communications concerning the ambulance and traffic controller. The system utilizes tags that adhere to various components to acquire tracked. The tags store information and understanding in regards to the info on the merchandise of products to acquire tracked. The prototype was tested under different mixtures of inputs inside our wireless communication laboratory and experimental effects come up with unsurprisingly.**

*Keywords:* **Radio Frequency Identification (RFID); Ambulance Vehicle; Stolen Vehicle; Zigbee Module; Traffic Zones;**

## I. INTRODUCTION

The ZigBee operates at low-power and could be used at the amounts of work configurations to do predefined tasks. The ZigBee uses 11 channels in situation of 868/915 MHz rf and 16 channels in situation of two.4 GHz rf [1]. It's seeing terrible road congestion problems in the metropolitan areas. Infrastructure growth is slow than the development in quantity of vehicles, because of space and price constraints. We use RFID readers, NSK EDK-125-TTL, and PIC16F877A system-on-nick to see the RFID tags connected to the vehicle. It counts quantity of vehicles that passes on the particular path throughout a specified duration. Additionally, it determines the network congestion, and therefore the eco-friendly light duration for your path [2]. AT instructions are utilized to control modems. These instructions originate from Hayes instructions which were utilized by the Hayes smart modems. When the RFID-tag-read is one of the stolen vehicles, a message is distributed using GSM SIM300 towards the police control room. This paper presents a smart traffic control system to pass through emergency vehicles easily. Every individual vehicle is outfitted with special rf identification tag that makes it impossible to get rid of or destroy.
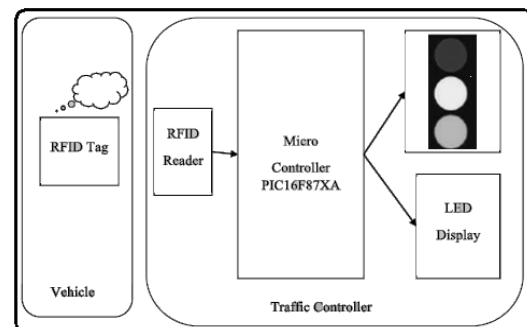


*Fig.1.Framework of the system*

## II. SYSTEM DESIGN

We advise to apply our Intelligent Traffic Control System. It mainly includes three parts. First part contains automatic signal control system. Here, each vehicle is outfitted by having an RFID tag. As it pertains in the plethora of RFID readers, it'll send the signal towards the RFID readers. The RFID readers will track the number of vehicles have undergone for any specific period and determines the congestion volume [3]. With automatic traffic signal control in line with the traffic density within the route, the manual effort for the traffic policeman is saved. Because the entire product is automated, it takes very less human intervention. Accordingly, it sets the eco-friendly light duration for your path. Second part is perfect for the emergency vehicle clearance. Here, each emergency vehicle contains ZigBee transmitter

module and also the ZigBee receiver is going to be implemented in the traffic junction. The 3rd part accounts for stolen vehicle recognition. Here, once the RFID readers read the RFID tag, it compares it towards the listing of stolen RFIDs. Probably the most important features are serial communication with no extra hardware with no extra coding. Hence, it's a transreceiver because it provides communication both in directions, only one direction. The CC2500 is really a RF module and it has transreceiver, which supplies a good way to make use of RF communication. Before switching to eco-friendly, it ought to satisfy all of the conditions. Simple interrupt option provides the advantage like jump in one loop to a different loop. You can easily switch whenever. Emergency vehicles like ambulance, fire trucks, have to achieve their destinations in the earliest. When they spend considerable time in congested zones, precious lives of numerous people may are in danger. Here, a GSM modem is associated with the microcontroller. This enables the pc to make use of the GSM modem to speak within the mobile network. GSM modem must support an "extended AT command set" for delivering/receiving SMS messages [4]. The significant of the RFID system really is easy. The machine utilizes tags that are affixed to various components to become tracked. The tags store information and data in regards to the information on the merchandise of products to become tracked. On the other hand, active tags depend on power and they've inbuilt power sources which allow it to receive and send signals from RFID readers. RFID range depends upon transmit power, receive sensitivity and efficiency, antenna, frequency, tag orientations, surroundings. For testing purpose, we compare the initial RFID tag read through the RFID readers towards the stolen RFIDs kept in the machine. The transmitter contains PIC16F877A microcontroller and ZigBee module. The microcontroller transmits the instructions and knowledge towards the ZigBee via serial communication [5]. The timeframe is going to be varied based on the traffic conditions, stolen vehicle, and emergency vehicle. The stolen vehicle RFID number ought to be updated within the database.

## III. PREVIOUS STUDY

The greatest drawback to eco-friendly waves is the fact that, once the wave is disturbed, the disturbance may cause traffic problems that may be exacerbated through the synchronization. A 'green wave' may be the synchronization from the eco-friendly phase of traffic signals. Having a 'green wave' setup, an automobile passing via an eco-friendly signal continuously receives eco-friendly signals because it travels lower the street. The actual-time operation from the system emulates the judgment of the traffic policeman working. The

amount of vehicles in every column and also the routing are proprieties, where the calculations and also the judgments are carried out [6]. Presently relevant video traffic surveillance and monitoring system commissioned in Bangalore city. It calls for a handbook analysis of information through the traffic management team to look for the traffic light duration in each one of the junction.
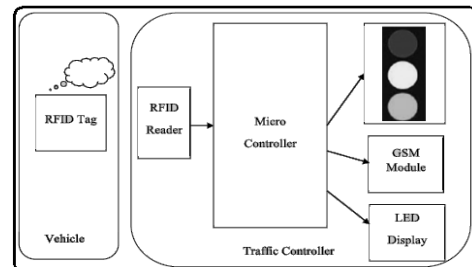


*Fig.2.Framework of detection system*

## IV. CONCLUSION

With stolen vehicle recognition, the signal instantly turns to red, and so the officer frequently takes appropriate action, if he/she's inside the junction. Also SMS will most likely be sent so that you can prepare capture the stolen vehicle next possible junctions. This paper presents an excellent traffic control system to provide emergency vehicles easily. Everybody vehicle is outfitted with special RF identification tag, which makes it impossible to eliminate or destroy. Further enhancements can be done for that prototype by testing it with longer range RFID readers. Also Gps navigation may be give you the stolen vehicle recognition module, and so the exact site of stolen vehicle is known. AT instructions are broadly-acquainted with control modems. These instructions result from Hayes instructions that have been employed by the Hayes smart modems. Once the RFID-tag-read may be the stolen vehicle, an e-mail is shipped using GSM SIM300 for that police control room. Emergency vehicles like ambulance, fire trucks, need to achieve their destinations within the earliest. Once they spend effort and time in traffic problems, precious lives of countless people may have been in danger. The signal turns to red, when the emergency vehicle encounters.

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