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**IMPLEMENTING NEW PERSPECTIVE FOR RECOGNITION OF PURLOINED VEHICLES & TO PLY  
LEEWAY FOR CRISIS VEHICLES**

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**Abstract**

Congested roads amid surge hours are one of the significant concerns in today's world. Amid surge hours, vehicles like Police cabs, Fire Brigade trucks, Ambulances get stuck in jams. Because of this, these emergency vehicles are not capable of achieving their destinations in time. We have built up a framework which is utilized to give leeway to any emergency vehicle by turning all the red lights to green in the way of the vehicle, henceforth giving a complete green wave to the vehicle. Around the globe, green waves are utilized to extraordinary impact. Regularly criminal or terrorist vehicles must be distinguished. Notwithstanding the green wave way, the framework will track a stolen vehicle when it goes through the traffic light. Rather than any customary vehicle tracking framework, in which the Global Positioning System (GPS) module requires battery control, our following framework, introduced inside the vehicle, does not require any power. The data with respect to the vehicle must be upgraded in the framework database. It is an independent 2-level framework which will help in the recognizable identification of emergency vehicles.

**Keywords** Radio Frequency Identification RFID, Proteus, GSM.

**Introduction**

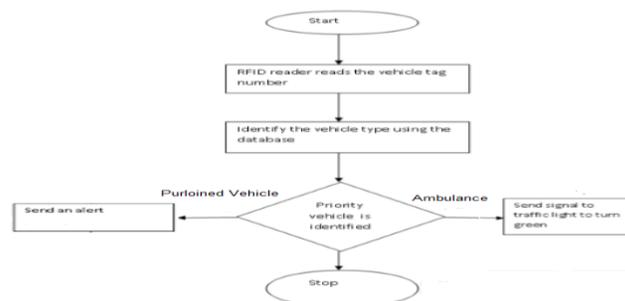
The fundamental motivation behind this idea is to get the stolen vehicles by a most recent innovation. This examination work is building up a shrewd rationale to distinguish the Purloined vehicle on check post. Still, there is no method to distinguish the vehicle on check posts by any mean. To utilize this innovation being used, we issue one of a kind distinguishing proof code to each vehicle. This exceptional number is put away in the silicon chip and the chip is introduced in the vehicle. Nobody can transform this number since this ID chip is introduced in the motor of the vehicle. This vehicle number is not accessible in the business sector. Presently the vehicle is outfitted with the ID code. This code

is additionally put away in the Database of the check post. Presently when any vehicle went through the check post then at the check post RF vehicle reader creates a 125 kHz freq for decoding RF label (which has been introduced in the vehicle). On the off chance that the information base does not discover the stolen ID code then security entryway gets OPEN and if the stolen ID code is coordinated with the information base then security door stays shut and caution gets to be ON naturally lastly the stolen vehicle is gotten. Radio Frequency Identification (RFID) is one of the quickest developing wireless innovations this decade, for the most part since it presents significant favorable circumstances as far as adaptability, lifetime and cost effective. This tag acknowledgment programming has numerous applications in the business sector [1-2]. It can be utilized for automated parking enrollment, Road-toll figuring between look at in and out check, Authentication while crossing nations, stolen vehicle can be tracked, Detection of charged vehicles. RFID offers incredible potential advantages in article distinguishing and tracking in different application zones [3-4]. Utilizing "RFID labels" on automobiles, and "RFID reader" to collect the label data, RFID made a change over among bar codes in non optical propinquity communication, data density, and two-way communication capacity. It can naturally recognize the target and acquire significant information without reaching the objective. It has numerous focal points, for example, high accuracy, simple adjusting capacity and rapidly operation et cetera. Additionally, it can work under cruel environment and sense from long separation. Programmed Vehicles Identification framework in light of RFID is the configuration for all lawfully enrolled vehicles; these vehicles must hold RFID labels. At the point when these vehicles go along a street or junctions which are introduced with this system (RFID), the data of vehicle tag is perused and sent quickly to Center Computer System for accomplishing the practical continuous checking and administration for vehicle in movements. The system gets the data and position of the vehicle from traffic crossing point and after that examines and channels to store it in database [5]. Numerous sorts of RFID exist, however at the most elevated amount, RFID gadgets can be classified into two classes [6]: active labels require a power source i.e., they are either associated with a power source or use vitality put away in an integrated battery. In the last case, a label's lifetime is restricted by the putaway vitality, adjusted against the quantity of read operation the gadget must experience. In any case, batteries make the cost, size, and lifetime of active labels unreasonable for the retail exchange. Passive RFID labels don't require batteries or maintenance. The labels likewise have an uncertain operational life and are sufficiently little to fit into an adhesive label. A passive label comprises of three sections: antenna, a semiconductor chip appended to the antenna and some type of embodiment. The

label reader is in charge of controlling and communicating with a tag. The label receiver apparatus catches vitality and exchanges the label's ID (the label's chip facilitates this procedure). The exemplification keeps up the label's integrity and shields the antenna and chip from ecological conditions or reagents [7]. In customary frameworks, to track the vehicle in order to give the green wave, GPS is utilized [8]. The expense of a GPS module is high when contrasted with a RFID transponder. The transponders are exceptionally shoddy to produce as well as little in size. The little size of transponder gives favorable position over the GPS, GPS can be effortlessly expelled by anybody, though it is difficult to find a RFID transponder and evacuate it. We likewise have a choice of overhauling the framework powerfully with the assistance of an SMS through the GSM module [9]. In a portion of the cases, to distinguish the vehicle, image processing based framework is used, which has a noteworthy disadvantage amid the awful climate conditions. Awful climate might be because of the substantial downpour, haze, dust storm. Then again, our framework is not influenced by any of these awful climate conditions [10]. Our framework can work in any climate, so it has the ability to give a 24x7x365 reconnaissance with no interruption. The conventional framework can't give 24x7x365 surveillance. This framework is exceptionally useful in building a keen city. The city outfitted with the created framework will never have any issues with traffic administration. Besides it will make the city more secure in connection with the discovery of stolen vehicles. It will likewise lessen the utilization of fuel by the vehicles which are furnished with the green wave. Besides, vehicles going in detachments will get a reasonable route with no traffic.

### Flow Chart of System Software

The underneath stream outlines give the essential algorithm of the program created for the whole framework (Fig.1). When the class of the vehicle is crisis vehicle like ambulance vehicle the RFID reader sends the sign to the traffic light to turns on green. In the event that the classification vehicle is robbery vehicle the RFID peruses the vehicle ID and by utilizing GSM module a message is sent to the closest police headquarters.



**Fig.1: Flow chart of the proposed system.**

On an occasion of two vehicles drawing nearer towards an intersection all the while from opposite directions, the need will be given to the vehicle whose need is characterized as most noteworthy. In the event that both the vehicles have enlisted for the most noteworthy need, the framework will serve the vehicles on first start things out serve premise. The GSM module will overhaul the need of the vehicle to and will likewise update the number and position of intersections to be gone through. The framework then distinguishes the crisis vehicle before its landing on the primary intersection with the assistance of the RFID reader introduced few meters far from the intersection. Presently, the need of vehicle is checked. Relies on upon need then the framework sends signs to turn the traffic light to green on the Nth intersection and N is decremented by one. Presently, if N is under zero, it implies that the vehicle has achieved the destination. On the off chance that N is non-zero; the framework sits tight for the vehicle to arrive the following intersection on the premise of normal figuring, expecting the rate to be 60-80 km/h, and checks its entry with the assistance of RFID. The landing of vehicle on that intersection is confirmed with the assistance of reader introduced few meters before the intersection. At that point, once more, flags are sent to the traffic light to turn green on N<sup>th</sup> intersection and again the procedure proceeds till N turns out to be under zero.

For identification of stolen vehicles, the client will tell the framework about the vehicle robbery through SMS. The framework will upgrade the database and set the need of the vehicle as checked whether the vehicle is identified by RFID reader. On the off chance that then it sends the area of the intersection where RFID reader identifies the vehicle.

### **Simulation of the Proposed Framework**

Proteus is a programming language in which the configuration of the required circuits is made. They are actualized to give the craved output. Different sorts of circuits plans can be made and its output can be checked. It is most valuable productive programming accessible today. Kiel programming grants us to form the project required for the microcontroller applications. This program is then utilized as a part of proteus programming.

The complete framework comprises of following as its parts (Fig. 2). The Base station is furnished with a microcontroller unit associated with the database comprising of all the data. The database is associated with the GSM module which helps in the prompt redesign of the database. However, the database can be brought up to date by physical means also. The reader will continue sending the id of the vehicle from each traffic light to the Microcontroller Unit. The controller will then check for the classification and the need of vehicle in the database and will appropriately send a sign

to the traffic lights. LF RFID readers are introduced in the streets preceding each traffic light framework every which way in such a way, to the point that the whole territory goes under the scope of that reader. RFID transponders are introduced inside each vehicle at the season of assembling. RFID transponders comprise of specific ID. Once the vehicle is enrolled and gets the tag number, its information is put away in the database alongside the classification of the vehicle, either Crisis or normal, which could be changed to whatever other class according to the prerequisites.

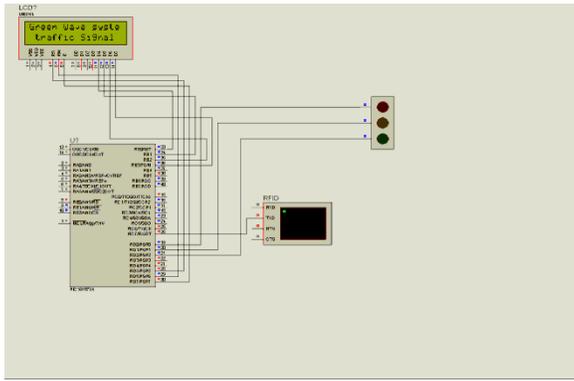


Fig.2. Pspice simulation of the proposed framework.

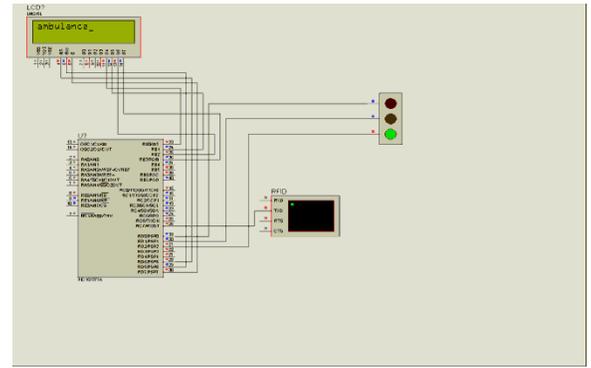


Fig.3. output of the system ply leeway for ambulance.

The working of this framework comprises three modules. Crisis vehicle Clearance: In this model, we have utilized RFID reader, RFID tag, pic controller framework to do auto regulation of the traffic signal when those crisis vehicles detected. At first, the traffic control signal meets expectations typically. The point when a crisis vehicle cross those way the RFID tag positioned at that vehicle get determined Toward the antenna that empowers will get a wave from the RFID reader. That RFID reader detects that id and transmits those data through wireless communication utilizing the RF transmitter Also receiver framework operating toward the extent of 30 KHZ & 300 GHZ. around accepting the majority of the data in those recipient systems, those controller controls the traffic sign. Toward along these lines, the traffic light turns should green indicator until the rescue vehicle passes those movement intersection (fig.3). Along these lines that crisis vehicle might precede the junction without any delays Furthermore Might achieve the doctor's facility on time.

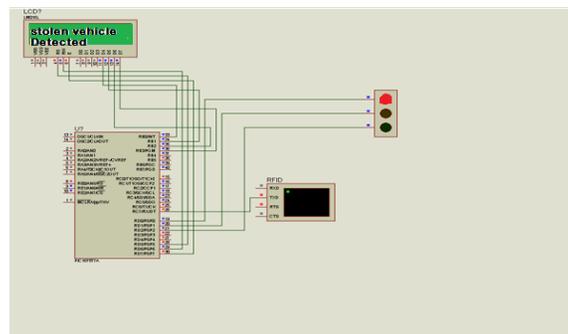


Fig.4. Simulation output of the system for Purloined Vehicles.

Stolen Vehicle Detection: In this part to detect the stolen vehicle we have utilized RFID reader, RFID tag, GSM. The implication about the stolen vehicle is given to the control room. At the point when that vehicle passes that way the RFID label which is available on that specific vehicle is detected by the RFID peruser associated with the controller. This data about the stolen vehicle is sent by GSM to the control room by means of SMS (Fig. 4). Accordingly, the stolen vehicle can be effortlessly followed and recognized for further activity

Blockage estimation is also possible in this framework. This anticipates incorporates the estimation of the clog in a signal intersection. This fundamental point is to give the driver of the crisis vehicle with clog data route before he achieves the sign so he can choose whether he can take that way or whatever other substitute ways. The driver will be suggested with the data as SMS through GSM. Keeping in mind the end goal to discover clog two IR sensors are utilized (Sensor 1 and Sensor 2). The framework distinguishes in the number of vehicles that is available in the locale between these two sensors. At the point when vehicles go past Sensor 1, output goes high which is sent to the control board. The check is augmented at whatever point a vehicle goes through Sensor 1. Sensor 2 is set at a separation from Sensor 1 contingent upon the prerequisite. At the point when the vehicle crosses sensor 2, the check is decremented. Along these lines, at whatever point a vehicle enters the sensor area, the check is augmented and at whatever point a vehicle leaves the sensor area, a check is decremented. This will give the definite number of vehicle present close to the activity signal. This check value is sent to the emergency vehicle driver as SMS through GSM. The blockage data is not sent to every ambulance but rather, to the ambulances that are recognized in that locale. An intelligent interface for client vehicle is likewise accessible, in which the driver of the crisis vehicle will update the need of the vehicle. As a rule, if there is no patient in the rescue vehicle, its default need level will be set to low. This interface additionally helps the driver to choose the intersections through which the crisis vehicle will pass. The need of the vehicle, area and the aggregate no. of intersections to be gone through are sent to the framework with the assistance of a GSM module. This information is gotten by the GSM module of the framework and it update database.

### **Prototype Implementation**

In our model, we have utilized PIC 16F877A microcontroller alongside LF RFID reader (125 kHz) and passive transponders (Fig. 5). Three distinct classes are the crisis, stolen and typical. In our coding area, three distinctive IDs of labels are put away in the system. A 16 x 2 LCD is interfaced with the microcontroller to show the class of the vehicle.

The traffic light model appears by red and green (LEDs) in the model. The code composed and smoldered on microcontroller utilizing Universal serial bus (USBASP) software.



**Fig.5. Prototype of the proposed system.**

The RFID read the data from the label; this data is sustained into the microcontroller unit for the further preparing. The data read is ID. Once the vehicle is in the scope of the RFID, the readers peruses the ID on the tag and contrasts it and IDs put away in the database. In the event that it compares to any of the class characterized, then the LCD shows the classification of the vehicle. On the off chance that the vehicle class is 'crisis', the traffic light module is actuated. Accepting the normal velocity of the crisis vehicle, the red light is swung to green and the procedure continues for every one of the intersections through which the crisis vehicle might pass. The planning of the red lights is such that the red light swings to green just when the vehicle is few meters far from the intersection so that a green wave is given to the crisis vehicle as it were. If a stolen vehicle goes from any of the intersections and its data is as of now on the framework, the framework will send the data to the microcontroller present at the intersection. It gives a ready sign utilizing red LED showing that a stolen vehicle has gone from the intersection. On the off chance that a typical vehicle is passed, no move is made by the framework. All things considered, the peruser just recognizes it and that information can be utilized for information checking purposes.

**Conclusion:** The framework was produced with the propelled innovations including RFID which may continue the rescue vehicle to go through the traffic immediately in the intersection or hub. This original thought can be utilized for controlling the signals in crisis circumstances, so that regardless of the fact that there is the clog in intersection we can deal with it effortlessly. As GSM is utilized, it sends the data about the burglary vehicle when the database is overhauled. All in this entire framework turns out to be extremely effective and can be effortlessly actualized continuously. The result demonstrates that the framework is exceptionally productive and financially savvy.

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