

# VEHICLE VIGILANCE SYSTEM

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**Abstract**—Incidentally, India holds the dubious distinction of registering the highest number of road accidents in the world. According to the experts at the National Transportation Planning and Research Centre (NTPRC) the number of road accidents in India is three times higher than that prevailing in developed countries. The number of accidents for 1000 vehicles in India is as high as 35 while the figure ranges from 4 to 10 in developed countries. 80% of road accidents are caused human error say senior police officials, according to a news report in the TOI today. Although no nationwide study as to the causes of road accidents in India is available on the internet, there are smaller studies which confirm these findings. Well, we all know how easy it is to get a driving license in India. Also punishment for errant drivers is light. A bribe is all that needs to be given and the rash drivers are free to go. Indians are known for their high degree of patience, but do we have to be patient where rash driving is concerned? No. Some drastic action needs to be taken. Urgent action is needed to achieve the ambitious target for road safety reflect in the newly adopted 2030 agenda for sustainable development having the global number of death and injuries from road traffic crashes by 2020.made possible to funding from Bloomberg philanthropies, this report is the third in the series, and provides a snapshot of road safety situation globally, highlighting the gaps and the measures needed to best drive progress. To avoid this type of accident and the person obey the traffic rules. That reason to implement this system.

**Keywords**—Reduce The Accident; RFID; GSM; Traffic Control System; Survey Lines Camera

## 1. INTRODUCTION

In today's world there is no efficient traffic system, one way of providing efficient traffic system is by manipulating traffic lights dynamically based on traffic size. Also there are no priority services for any priority vehicles like ambulance hence some services other than normal services must be provided to priority vehicles. User faces traffic jam due to lack of notification hence must be regularly notified about current traffic conditions if he wishes to. Some strict action is required against the rule breakers such as fine deduction or in worst case license invalidation. There is a drastic need to solve these problems for efficient management of traffic to avoid the problem on this paper to use the RFID used to track the traffic red signal level crossing vehicle and the GSM used to alert the nearest traffic signals then Manuel to collect the penalty.

## 2. LITERATURE SURVEY

Traffic Management on the road has become a severe problem of today's society. An efficient traffic management technique is needed to reduce waiting and travelling times, save fuel and money. We are known to the fact that, number of vehicles is increasing exponentially, but infrastructure for transportation we have, is not sufficient to satisfy their needs. Due to this, valuable time of public is being lost every day. This also leads to huge economic problems. Main problem occurs when this traffic congestion costs life of someone. It should not be surprising that traffic congestion affects almost all emergency vehicles, which can be too much hazardous to affected people. There isn't any quick solution for this. Government can't continue making roads everywhere. The

traffic system in today's world is not up to date there is no update of traffic density also there are no priority services provided for priority vehicles such as ambulance. Traffic jam is the main cause of inefficient traffic system and it occurs because user is not aware of current traffic density or size. No strict laws have been implemented for rule breakers. There is a drastic need to solve these problems for efficient flow of traffic system. Figure1. Today's Traffic Scenario in Metropolitan Cities Generally traffic light controllers use microprocessors and controllers which used predefined hardware and has no flexibility for modification on real time basis. This results in wastage of car fuel, so they have implemented traffic signal controller with powerful hardware interface. In this paper, GSM interface is also provided for sending traffic alerts Traffic is a critical issue of transportation system in most of all the cities of Countries.

## 3. EXISTING SYSTEM

This paper is about Intelligent Traffic Control and Management System which uses intelligent components like RFID, IR sensors, microcontroller, etc. It also consists of modules for i) Allowing passage of prioritized vehicles Ambulance, VIP, etc. ii) Enabling users to track their stolen or lost vehicles.iii) Help people to get information about the traffic density in specific area .iv) Avoiding corruption by automated fine deduction. RFID tags are used for unique identification of vehicles and IR sensors are used to get the vehicle count. RFID readers used are having frequency 125 KHz. PCB (Printed circuit Board) are used to mount circuit components

#### 4. PROPOSING SYSTEM

In this paper traffic vehicle violation control “is uses RFID, GSM, ARM, CAMERA, etc. it is used to those who break the traffic rules and red signal level crossing to track the particular vehicle the alert the nearest signal to send the particular vehicle details the traffic police to collect penalty for the particular rule violation. This system to performance wise high to compare to the existing system. This proposing system circuit complexity low this system perform 32 bit long. RFID readers used are having frequency 125 KHz module become used to advance type.

#### 5. WORKING PRINCIPLE

##### A. RFID:

Radio-frequency identification (RFID) uses electromagnetic fields to automatically identify and track tags attached to objects. The tags contain electronically stored information. Passive tags collect energy from a nearby RFID reader's interrogating radio waves. Active tags have a local power source such as a battery and may operate at hundreds of meters from the RFID reader. Unlike a barcode, the tag need not be within the line of sight of the reader, so it may be embedded in the tracked object. RFID is one method for Automatic Identification and Data Capture (AIDC). [1] RFID tags are used in many industries, for example, an RFID tag attached to an automobile during production can be used to track its progress through the assembly line; RFID-tagged pharmaceuticals can be tracked through warehouses; and implanting RFID microchips in livestock and pets allows positive identification of animals. Since RFID tags can be attached to cash, clothing, and possessions, or implanted in animals and people, the possibility of reading personally-linked information without consent has raised serious privacy concerns. [2] These concerns resulted in standard specifications development addressing privacy and security issues. ISO/IEC 18000 and ISO/IEC 29167 use on-chip cryptography methods for intractability, tag and reader authentication, and over-the-air privacy. ISO/IEC 20248 specifies a digital signature data structure for RFID and barcodes providing data, source and read method authenticity. This work is done within ISO/IEC JTC 1/SC 31 Automatic identification and data capture techniques.

##### B. GSM:

In various countries the frequency bandwidths specified for the GSM services are GSM-400, GSM-800, GSM-900, GSM-1800 and GSM-R. The GSM-900 and the GSM-1800 are the most widely used frequency bandwidths in different parts of the globe.

The GSM-900 has a down link frequency range of 935-960 MHz and an up link frequency of range of 895-915 MHz. This frequency band is partitioned into 124 pairs of simplex channels with separation of 200KHz. A particular range of simplex channels is given to a particular network provider. The type of interface used in GSM is digital air interface. The analogue voice signals are converted to digital signals before transmission. Up to 8 MS subscribers can be handled by the GSM RF carrier at a time. The rate of transmission is 270 Kbps.

The Gaussian minimum shift keying (GMSK) is used for transmitting the digital signals. In GMSK, a phase change represents the change from a digital “1” or a “0”, occurs over a period of time. The addition of high frequency components to the spectrum is reduced. In GSMK, the phase change is not constant and it is spread-out.

##### C. ARM:

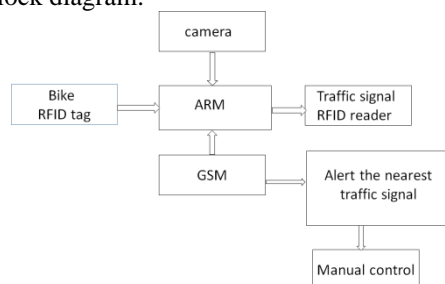
ARM, originally Acorn RISC Machine, later Advanced RISC Machine, is a family of reduced instruction set computing (RISC) architectures for computer processors, configured for various environments. British company ARM Holdings develops the architecture and licenses it to other companies, who design their own products that implement one of those architectures—including systems-on-chips (SoC) that incorporate memory, interfaces, radios, etc. It also designs cores that implement this instruction set and licenses these designs to a number of companies that incorporate those core designs into their own products. A RISC-based computer design approach means processors require fewer transistors than typical complex instruction set computing (CISC) x86 processors in most personal computers. This approach reduces costs, heat and power use. These characteristics are desirable for light, portable, battery-powered devices—including smartphones, laptops and tablet computers, and other embedded systems. [3][4][5] For supercomputers, which consume large amounts of electricity, ARM could also be a power-efficient solution. [6] ARM Holdings periodically releases updates to its cores. All of them support a 32-bit address space (only pre-ARMv3 chips, made before ARM Holdings was formed, as in original Acorn Archimedes, had smaller) and 32-bit arithmetic; the ARMv8-A architecture, announced in October 2011, [7] adds support for a 64-bit address space and 64-bit arithmetic. Instructions for ARM Holdings' cores have 32-bit fixed-length instructions, but later versions of the architecture also support a variable-length instruction set that provides both 32- and 16-bit instructions for improved code density. Some cores can also provide hardware execution of Java byte codes. With over 50 billion ARM processors produced as of 2014, [8] ARM is the most widely used instruction set architecture in terms of quantity produced. [9][10][11][12][13] Currently, the widely used Cortex cores, older "classic" cores, and specialized Securicor cores variants are available for each of these to include or exclude optional capabilities. The ARM Cortex-M4F Based MCU TM4C123G Launchpad Evaluation Kit (EK-TM4C123GXL) offers these features are High Performance TM4C123GH6PM MCU, 80MHz 32-bit ARM Cortex-M4-based microcontrollers CPU256KB Flash, 32KB SRAM, 2KB EEPROM Two Controller Area Network (CAN) modules USB 2.0 Host/Device/OTG + PHY Dual 12-bit 2MSPS ADCs, motion control PWMs, 8 UART, 6 I2C, 4 SPI, On-board In-Circuit Debug Interface (ICDI), USB Micro-B plug to USB-A plug cable, Preloaded RGB quick-start application, Readme First quick-start guide  
 Pipeline video inspection or survey CCTV cameras: it is a form of telepresence used to visually inspect the interiors of pipelines. A common application is to determine the

condition of small diameter sewer lines and household connection pipes. Older sewer lines of small diameter, typically 6-inch (150 mm), are made by the union of a number of short 3 feet (0.91 m) sections. The pipe segments may be made of cast iron, with 12 feet (3.7 m) to 20 feet (6.1 m) sections, but are more often made of vitrified clay pipe (VCP), a ceramic material, in 3 feet (0.91 m), 4 feet (1.2 m) & 6 feet (1.8 m) sections. Each iron or clay segment will have an enlargement (a "bell") on one end to receive the end of the adjacent segment. Roots from trees and vegetation may work into the joints between segments and can be forceful enough to break open a larger opening in terra cotta or corroded cast iron. Eventually a root ball will form that will impede the flow and this may be cleaned out by a cutter mechanism and subsequently inhibited by use of a chemical foam - a rooticide. With modern video equipment the interior of the pipe may be inspected - this is a form of non-destructive testing. A small diameter collector pipe will typically have a cleanout access at the far end and will be several hundred feet long, terminating at a manhole. Additional collector pipes may discharge at this manhole and a pipe (perhaps of larger diameter) will carry the effluent to the next manhole, and so forth to a pump station or treatment plant.

### 6. SYSTEM WORKING

If user is not followed the traffic rules when he cross the signal level users information is track through (RFID) these information will get pass to next signal through traffic control to the particular traffic police. The particular person captures pic with help of CCTV camera through the control room. Fine amount will collected from the user. If some persons passed away in particular signal then message will passed to Traffic control .due to carelessness of the officer particular fine amount will put for officer

Block diagram:



### 7. RESULT

Thus this project will make all the public to follow the traffic rules properly and also it will avoid corruption of police officer assuring the quality of the police department. Here we suggest a system to maintain good traffic system.

### 8. CONCLUSION

In this paper occurring of accident will get reduce by proper way of following traffic rules and also it assures the dignity of the police department to a higher level by enhancing the cases

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