Traffic Enforcement System

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Abstract - *The traffic management system provides a real-time data detection and notification mechanism to detect traffic speed violation, also to notify the police and the car owner of the committed violation in order to be able to take the right procedure at the right time, resulting in an increasing rate of saved lives. There are systems for identify whether the driver is alcoholic, or not. The speed of vehicle is measured and checked if vehicle is in over speed then shutdown signal is send to the vehicle then vehicle gets slow down and stopped. There are some mechanisms to check the vehicle parameters and document (Vehicle Reg. no, Seat belt status, alcohol status, insurance, tax etc.) status if anything find improper then the car gets arrested and stopped. Using RFID technology, can detect the Theft vehicle when a vehicle get theft.*

***Key Words*: GSM, Liquor sensor, PIC (18F45K22) microcontroller, RFID, SMS**

1. INTRODUCTION

The purpose behind this project is to "prevent traffic rules violations". Nowadays traffic police facing many difficulties to detect the vehicles that violets traffic rules. More than one officer is required for traffic checking. Still many of the law breakers are easily escaped from the police. Sometimes escaped vehicles are chased by the police officers and it will leads to accidents. But at the same time many people give respect to traffic rules and they correctly obey that rules. Such people are simply wasting their time. When considering such kind of system there should be a unique identification of vehicles. RFID (Radio Frequency Identification) enables identification from a distance, and unlike earlier bar-code technology, it does so without requiring a line of sight. An RFID system consists of an antenna and a transceiver which read the radio frequency

and transfers the information to a processing device, and a transponder (tag), which an integrated circuit is containing the RF circuitry and information to be transmitted. Using RFID technology identifies the vehicle uniquely and then compares details of document with data stored in the database. And a GSM alerts system which provides an alert system for reporting on traffic rule violation. GSM is an open digital cellular technology used for transmitting mobile voice and data services. It differs from first generation wireless systems in that it uses digital technology and time division multiple access transmission methods. So by introducing this project, can reduce the number of officers required for checking. A single police officer can ensures that there are no violations in traffic. And also using this system, can avoid the inconvenience which is caused to the normal people.

2. METHODOLOGY

The framework is for making vehicle driving more secure than some time recently. This is actualized utilizing Arduino. The driver's condition in real time environment is determined and hence proposes the detection of alcohol using alcohol detector associated with Arduino such that when the level of alcohol crosses an allowable farthest point, the vehicle ignition framework will turn off and the GPS module will catch the present area of the vehicle. Likewise the GSM module will consequently send trouble message to police or relatives. The framework recognizes the nearness of alcohol in the vehicle and promptly bolts the motor of the vehicle. In the meantime a SMS alongside the area of the vehicle is send to three pre-chosen contacts. Thus the framework decreases the quantum of street mishaps and fatalities because of drunk driving in future [1]

The system will detect drunken driver by alcohol sensor through driver breath fitted on steering in front of driver. A GSM framework is given that will send message to police headquarters and important numbers given in the application of the driver after detecting alcohol. The framework likewise concentrates on giving GPS base framework to track those automobiles and when alcohol distinguishes at beginning of ignition of vehicle then its ignition will instantly turn off and if alcohol detected after starting and while driving then application will reduced the

fuel supply. They additionally utilize heart beat sensor to advise typical or strange state of driver and crash of vehicle will recognize by bumper switch [2]

The article portrays design ideas of a novel application platform for vehicles identification and traffic rules violations registration. The system includes diverse hardware including RFID-violations, camcorders and pace radars. The system supports both wired and remote interfaces for information transmission and can give police headquarters up to date information about traffic rules violators. The traffic law implementation frameworks can be either put statically, or move with the police vehicles starting with one place then onto the next. Also, a few frameworks can work inside the moving vehicle, for example - parking law enforcement systems [3]

The idea is to design a framework that can be utilized to design happening on the road and afterward send SMS to both the owner of the vehicle and the Police, additionally take a picture .The proposed framework comprises of PIC (18F45K22) microcontroller, Radio Frequency Identification (RFID) and Global System for Mobile Communications (GSM). The framework is having two RFID readers alongside a tag that is joined to the vehicle and GSM is used to notify the vehicle's owner and Police through Short Message Service (SMS). Moreover, a photo of a vehicle is taken by means of the Camera and a fine is charged when the speed limit is exceeded [4]

The proposed system makes a controlling framework by which wearing safety belt is made as compulsory. If the driver tries to begin the run the controlling framework watches that the driver worn safety belt or not on the off chance that he/she worn then vehicle will begin if no vehicle won't begin. At that point the controlling framework watches that the close traveler is situated or not. On the off chance that no one was there then vehicle will begin. On the off chance that anyone was situated then the controlling framework watches that the individual worn safety belt or not if yes vehicle will begin if not vehicle won't begin.

This control system can be made by utilizing IR sensors to distinguish that the safety belt is introduced effectively. These IR sensors are connected with both driver safety belt and with close safety belt. The safety belt is put between the IR emitter and detector. The safety belt is tired horizontally at the center after leaving some length. This helps to receive IR rays from the emitter. The received IR rays changes into radio frequencies. The radio frequencies are transmitted through receiving antenna. These radio frequencies are received by a receiver and it is decoded to micro controller. Microcontroller is customized and programmed. Then it is connected with display to indicate to the passengers. Microcontroller is associated with an alert to offer caution to the travelers on the off chance that they

didn't wear their safety belts [5]

Nowadays accidents are happening regularly and lost our profitable life by making wrong actions while driving (school zone, slopes range, and expressways). So keeping in mind the end goal to maintain a strategic distance from such sort of accidents and to caution the drivers and to control their vehicle speed at the place where signboards are kept. However, in some cases it might to possible to view that sort of signboard and there is a chance for accidents. So for imply the driver about the zones and the speed control automatically, by the method of utilizing RF technology. The primary goal is to outline a Smart Display controller implied for vehicle's speed control and screens the zones. Smart Display & Control (SDC) can be custom intended to fit into a vehicle's dashboard, and displays data on the vehicle. This system contains automatic speed control when the vehicles get any bad signal from outside environment. The undertaking is made out of two separate units: zone status transmitter unit and collector unit. Once the data is get from the zones, the vehicle's installed unit automatically alarms the driver, to reduce the speed rate as per the zone, it wait for few moments, and generally vehicle's SDC unit consequently reduces the speed.

The point of the examination is to fabricate a sensor framework for foundation to vehicle, which can transmit the data gave by active signs put making progress toward adjust the vehicle's velocity and prevent impacts. By active signs we mean normal activity signals that includes long-extend active RFID labels with data put away into them. This data is gathered progressively by RFID sensors set on board of the vehicle, which will converted to consequently change its rate to adjust to the circumstances of the street. Specifically, it included a fuzzy logic control algorithm to calculate the longitudinal velocity of the vehicle, with actuators which control the vehicle's throttle and brake to reach and keep up a given target speed [6]

One of the major parts of the described system is for identification of drunken driving. A safe journey is possible

by including this system in vehicle. This will help to decreases the number of accident due to drunken driving. It can be described as a safety features for vehicle because if alcohol detected then it will stop the vehicle automatically. That is reason behind this topic is "Drunk and driving identification". Presently, numerous accidents are occurring as direct result of the liquor utilization of the driver or the individual who is driving the vehicle. Mainly drunken driving is a most reason of accidents in all nations everywhere throughout the world. Liquor Detector in Car is intended for the safety of the people inside the vehicle. This system must be fitted inside the vehicle.

The primary part of this system is a "Liquor sensor". On the off chance that the individual inside car has consumed liquor then it is identified by liquor sensor. Sensor

gives this sign to a comparator IC. The yield of comparator is associated with the microcontroller. Microcontroller is the heart of this system. It is the CPU of the complete circuit. Microcontroller gives high heartbeat to the signal circuit and the alert is turned on. In the meantime a relay is off. Because of this the ignition of the vehicle is deactivated [7]

The number of transport related problems can be effectively solving using RFID technology. Some of the problems that require immediate attention are traffic rule violation control, vehicle theft identification and traffic signal management. RFID labels are set out and about giving region data and environment cautions. We have utilized Atmel C 52 microcontroller as a base gadget. GSM module and RFID reader is associated with serial port of the controller is associated. Implanted module gets region data from RFID reader module and the ready data is sent through the GSM module. RFID reader gets a region data structure RFID labels on the street unit. This project is designed as a system to give complete solution for transport related problems like Vehicle surveillance [8]

The paper displays the advancement in utilizing a liquor Detector, a gadget that detects an adjustment in the alcoholic gas content of the encompassing air. The sensor will then examine the measure of alcoholic vapors and offer the client some sign of the measure of liquor present. This gadget is all the more commonly referred to as a breath analyzer, as it dissects the liquor content from a man's breath. The gadget is for the most part utilized by law requirement to figure out if an individual has been driving affected by liquor. Police breathe analyzers measures the Blood Alcohol Content, or BAC, of a person. The liquor sensor detects the liquor level noticeable all around. At the point when the detected level goes beyond 400 the control won't be sent to the engine and the vehicle won't begin.

Then again if the detected level is below 400 BAC

the control will be given to the engine and the vehicle will begin. In this study, we have exactly exhibited that starting with a necessity to build up a noninvasive technology that will rapidly and precisely measure a driver's BAC and decrease the harm because of drinking and driving [9]

Vehicle tracking has expanded being used in the course of recent years and, in current patterns, this ascent should proceed. Tracking offers advantages to both private and open segment people, allowing for real-time visibility of vehicles and the ability to receive advanced information with respect to legitimate presence and security status. Here it is proposing an answer for track down those vehicles effectively and administration will have the capacity to settle on more exact choices that are specifically identified with number of vehicles on streets and parkways and taking care of them successfully as per a preplanned approach. This system will likewise offer assistance track down vehicles required in wrongdoings or offenses. Consequently, the best

arrangement is utilizing Radio Frequency Distinguishing proof (RFID) Technology. The tag-to-reader identification process takes only milliseconds [10]

3. CONCLUSIONS

As we have seen the main method used for vehicle identification is video based number plate recognition. The primary disadvantage of this approach is its dependence on weather conditions and license plates status. If license plates are muddied or if it is heavy raining or snowing such identification becomes practically impossible. Violator driving style can also prevent the identification. For instance, some systems fail when the driver frequently changes his driving lanes near the cameras or instantly slowdowns. The best way to deal with this disadvantage is to attach an additional identification source to the vehicle. RFID technology can be employed here.

REFERENCES

[1] PratikshaBhuta, Karan Desai, ArchitaKeni Guide: Mrs. Vijayalakshmi Badre Department Of Electronics and Telecommunications Thadomal Shahani Engineering College, Bandra Mumbai - India' Alcohol Detection and Vehicle Controlling ' International Journal of

Engineering Trends and Applications (IJETA) – Volume 2 Issue 2, Mar-Apr 2015

[2] Mandalkar Rahul B, Pandore Rahul N, ShindeManoj B, Godse Valmik D Computer Department SND College of Engineering Yeola, Pune University, India.'Alcohol Detection and Accident Avoidance Using Locking With Tracking ' International Journal of Advance Research in Computer Science and Management Studies Volume 3, Issue 9, September

[3] Vladimir M. Vishnevsky, R&D "INNET" Moscow ' Design Concepts of an Application Platform for Traffic Law Enforcement and Vehicles Registration Comprising RFID Technology ' IEEE 2012 International Conference on RFID -Technologies and Applications

[4] Lujaina Al-Shabibi, Nadarajan Jayaraman ,Jayavrinda Vrindavanam Senior Lecturer Caledonian College of Engineering Muscat, Oman. ' Automobile Speed Violation Detection System using RFID and GSM Technologies ' International Journal of Applied Information Systems (IJAIS) – ISSN : 2249-0868 Foundation of Computer Science FCS, New York, USA Volume 7– No.6, July 2014

[5] R. Karthik, Prof. S. Karpagarajan, R. Department of Mechanical Engineering, Dhanalaksmi Srinivasan Engineering College, Perambalur, Tamilnadu, India. 'Design and Development of Seat Belt Alert System with Ignition Interlocking in Four Wheeler ' International

Journal of Scientific and Research Publications, Volume 4, Issue 7, July 2014 1 ISSN 2250-3153

[6] Ankita Mishra, JyotiSolanki, Harshala Bakshi, Priyanka Saxena Pranav Paranjpe, Electronics& Communication Engineering Department, VITS, Indore, India.' Design of RF based speed control system for vehicles' International Journal of Advanced Research in Computer and Communication Engineering Vol. 1, Issue 8, October 2012

[7] Vijay Savani, Hardik Agravat and Dhrumil Patel Electronics& communication (B.E), Surat, Gujrat, India.'Alcohol Detection and Accident Prevention of Vehicle' International Journal of Innovative and Emerging Research in Engineering Volume 2, Issue 3, 2015

[8] Kumar Chaturvedula .U.P M.Tech, Embedded Systems, Nova College of engineering and technology. 'RFID Based Embedded System for Vehicle Tracking and Prevention of Road Accidents' International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181 Vol. 1 Issue 6, August – 2012

[9] Vaishnavi.M, Umadevi.V ,Vinothini.M , BhaskarRao .Y , Pavithra.S. 'Intelligent Alcohol Detection System for Car' International Journal of Scientific & Engineering

Research, ISSN 2229-5518 Volume 5, Issue 11, November-2014

[10] K M Akkas Ali, A K M Zaidi Satter, and Khaled Shohel, Institute of Information Technology, Jahangirnagar University, Dhaka. 'Implementing RFID Technology for Vehicle Tracking in Bangladesh' Asian Journal of Engineering and Technology Innovation 01 (01); 2013