A Novel Automatic Traffic Violation Control System

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Abstract— This paper is primarily worried about a framework that has been planned to recognize all criminal traffic offenses like over speeding, stop line infringement, not ceasing the vehicle amid the red light period of the movement flag and after that follow the people who have abused the activity rules. To accomplish a similar two columns of Infrared transmitters are utilized. Initial one is to caution the driver amid the first run through of his infringement, that is when is tries he move despite the fact that there is a red sign on the flag sensor shows the notice message to the driver approaching him to stop for the red flag and move just when the flag has changed to green. Indeed, even the show of caution message if the driver keeps on moving without halting their vehicle then the Second transmitter send a notice to the Road Traffic Officer (RTO) in regards to the infringement subtle elements and the auto points of interest that has damaged the activity rules and next time the autos stops and the motor is turned off, the motor gets auto bolted and just Road movement officer can open the bolt and punishing the violator. The composed framework essentially has 2 areas, first the transmitter that is mounted in the auto and the second is the beneficiary that is at the Road movement office. So the vehicle points of interest are checked and transmitted to the RTO area at whatever point the vehicle disregards the activity run the show.

Index Terms— RTO, IR LED, GSM, LCD, Smart System

I. INTRODUCTION

Presently a day's installed framework could be a piece of our life and will be even a great deal of current inside what's to come. The vast majority of them perform straight forward administration and bolster assignments on summon in an extremely pre-customized way; however the same has not been actualized with regards to the territory of street segment. Progressively they're intended to hold out independent errands including "knowledge" (Smart Systems) they're conjointly intended to have the capacity to choose, upheld propelled information sources and circumstance mindfulness that is , what to attempt to do in conditions that are characterized by partner questionable setting. A few security frameworks that start from security bolt codes to unique finger impression scanner, iris scanner for security locks are an aftereffects of improvement inside the field of implanted frameworks. A few wellbeing frameworks like speed administration in class vans, chimney identification framework and smoke discovery frameworks in living arrangements, research facility, plants and contestant recognition in ensured ranges are the most critical inserted frameworks that are utilized wide around the globe. Subsequently, these sorts of inserted frameworks assume a noteworthy part in wellbeing and security frameworks. Planning self-governing vehicles are following stride amid this course of advancement inside the space of implanted innovation.

As we as a whole know in the current circumstances, car crashes and blockages have fundamentally expanded. The vehicle volume has expanded exponentially; the street framework has not been enhanced proportionately. This progressively brings about upgraded movement clog and street mischances. Very unique advancements are there to discover automobile overload and to diminish clog. Administration, expansion conservative necessities denote a few downsides of this advancements which additionally incorporate issues like establishment issues, unpredictability, cost, and so forth. In a trial to decrease the issues identified with activity and enhance the movement train, progressed mechanical arrangements are anticipated through this paper. On the off chance that a driver abuses any of the movement governs, the thought process constrain will be accused in line of the RTO rules. The drivers need to take after the Rules

of the street and wind up. These tenets here and there apply to any or all street clients, however they are of uncommon significance to cycle riders and engine bicycle riders. Communications amongst vehicles and with people on foot are checked by these tenets. The basic activity rules territory unit sketched out by Associate in nursing worldwide accord underneath the expert of the worldwide association, the 1968 Vienna Convention on Road Traffic. Not all nations' territory unit soul to the tradition and, even among signatories, local varieties in take after are additionally found. There are likewise unwritten local principles of the street, that territory unit regularly comprehended by local drivers. When in doubt, a driver is relied upon to stay away from a crash with another vehicle and people on foot, despite regardless of whether the material tenets of the street empower them to be wherever they happen to be. Despite the fact that there are extra principals that are pertinent for different movement minutes, they are not being taken after. So we have to make botch sealing framework since the govern and principals aren't being taken after. What's more, in late they are numerous that have prompted to increment in the activity and this expansion likewise prompted to increment in the movement issues like mishaps and different loses in view of petty criminal offense. Discussing the expansion of criminal traffic offenses which is a danger to individual and open wellbeing requires a constant interest for building productive frameworks that tracks the petty criminal offense. Extensive scale machine-driven picture social that are creating control advancements that have given effective devices that can check petty criminal offense and furthermore by exchanging risky driving conduct by teaching groups that hazardous driving will be punished.

In different created nations like America, UK, Canada and Australia activity cameras are introduced which catches pictures of the considerable number of vehicles that are abusing the movement rules. To clarify more about this movement camera, it is a red light weight camera that is short for red light. The activating procedure of the camera happens when a vehicle enters the convergence when the movement flag has turned red. It consequently catches those engines that keep running over the red lights as opposed to halting and the law implementation officer can see the photograph and consider this as a proof, punish the violator via mailing the infringement points of interest to him and requesting that they pay the punished sum, caution them not to submit a similar oversight once more. For a quick, very much arranged and savvy administration of activity guidelines and infringement, petty criminal offense administration framework is set up. The primary fundamental arrangement for this framework is the product which permits the client to track different regulatory techniques of the Department of Transportation like the outflow of notices and fines. Security and pleasantries of street clients are changing into genuine stress. Because of the expansion in the street mishaps with increment in vehicle activity, it is pivotal to create a more secure and reliable plan for movement control and administration. The pinpoint center for this diary is to display a framework that can spot petty criminal offenses like speed infringement, path infringement, avoiding the movement flag and thus by following every one of the vehicles which have enjoyed petty criminal offense.

II. PROPOSED SYSTEM

The proposed conspire in this venture doesn't talk about the kind of vehicle utilized. All things considered, the execution of the framework to the cars is not limited to four wheelers alone and is utilized comprehensively. In any case, in this paper the establishment of sensors in the vehicles is not talked about. At the point when there is a red flag in the movement ,the main sensor in the auto checks if the auto is as yet moving despite the fact that there is a red flag on the activity light .If yes then a notice message is shown to the drive to stop the auto and sit tight for the green flag .After the notice message is shown the sensor checks if the auto is moving and if the auto is still in movement then the second sensor sends the vehicle and the proprietor subtle elements to the RTO office through GSM and motor is observed in a manner that whenever it has been turned off ,the motor gets bolted and the area and vehicle subtle elements is sent to RTO. The RTO themselves need to go to the vehicle area and open the motor and punish the drivers for disregarding the movement rules. Christo Ananth et al. [5] proposed a system about

Efficient Sensor Network for Vehicle Security. Today vehicle theft rate is very high, greater challenges are coming from thieves thus tracking/ alarming systems are being deployed with an increasingly popularity .As per as security is concerned today most of the vehicles are running on the LPG so it is necessary to monitor any leakage or level of LPG in order to provide safety to passenger. Also in this fast running world everybody is in hurry so it is required to provide fully automated maintenance system to make the journey of the passenger safe, comfortable and economical. To make the system more intelligent and advanced it is required to introduce some important developments that can help to promote not only the luxurious but also safety drive to the owner. The system "Efficient Sensor Network for Vehicle Security", introduces a new trend in automobile industry. Christo Ananth et al. [6] discussed about Intelligent Sensor Network for Vehicle Maintenance System. Modern automobiles are no longer mere mechanical devices; they are pervasively monitored through various sensor networks & using integrated circuits and microprocessor based design and control techniques while this transformation has driven major advancements in efficiency and safety. In the existing system the stress was given on the safety of the vehicle, modification in the physical structure of the vehicle but the proposed system introduces essential concept in the field of automobile industry. It is an interfacing of the advanced technologies like Embedded Systems and the Automobile world. This "Intelligent Sensor Network for Vehicle Maintenance System" is best suitable for vehicle security as well as for vehicle's maintenance. Further it also supports advanced feature of GSM module interfacing. Through this concept in case of any emergency or accident the system will automatically sense and records the different parameters like LPG gas level, Engine Temperature, present speed and etc. so that at the time of investigation this parameters may play important role to find out the possible reasons of the accident. Further, in case of accident & in case of stealing of vehicle GSM module will send SMS to the Police, insurance company as well as to the family members.

Christo Ananth et al. [7] discussed about an eye blinking sensor. Nowadays heart attack patients are increasing day by day."Though it is tough to save the heart attack patients, we can increase the statistics of saving the life of patients & the life of others whom they are responsible for. The main design of this project is to track the heart attack of patients who are suffering from any attacks during driving and send them a medical need & thereby to stop the vehicle to ensure that the persons along them are safe from accident. Here, an eye blinking sensor is used to sense the blinking of the eye. SpO2 sensor checks the pulse rate of the patient. Both are connected to micro controller. If eye blinking gets stopped then the signal is sent to the controller to make an alarm through the buffer. If spO2 sensor senses a variation in pulse or low oxygen content in blood, it may results in heart failure and therefore the controller stops the motor of the vehicle. Then Tarang F4 transmitter is used to send the vehicle number & the mobile number of the patient to a nearest medical station within 25 km for medical aid. The pulse rate monitored via LCD .The Tarang F4 receiver receives the signal and passes through controller and the number gets displayed in the LCD screen and an alarm is produced through a buzzer as soon the signal is received. Christo Ananth et al. [8] discussed about a system, GSM based AMR has low infrastructure cost and it reduces man power. The system is fully automatic, hence the probability of error is reduced. The data is highly secured and it not only solve the problem of traditional meter reading system but also provides additional features such as power disconnection, reconnection and the concept of power management. The database stores the current month and also all the previous month data for the future use. Hence the system saves a lot amount of time and energy. Due to the power fluctuations, there might be a damage in the home appliances. Hence to avoid such damages and to protect the appliances, the voltage controlling method can be implemented. Christo Ananth et al. [9] discussed about a project, in this project an automatic meter reading system is designed using GSM Technology. The embedded micro controller is interfaced with the GSM Module. This setup is fitted in home. The energy meter is attached to the micro controller. This controller reads the data from the meter output and transfers that data to GSM Module through the serial port. The embedded micro controller has the knowledge of sending message to the system through the GSM module. Another system is placed in EB office, which is the authority office.

When they send "unit request" to the microcontroller which is placed in home. Then the unit value is sent to the EB office PC through GSM module. According to the readings, the authority officer will send the information about the bill to the customer. If the customer doesn't pay bill on-time, the power supply to the corresponding home power unit is cut, by sending the command through to the microcontroller. Once the payment of bill is done the power supply is given to the customer. Power management concept is introduced, in which during the restriction mode only limited amount of power supply can be used by the customer. Christo Ananth et al. [10] discussed about Positioning of a Vehicle in a Combined Indoor-Outdoor Scenario, The development in technology has given us all sophistications but equal amounts of threats too. This has brought us an urge to bring a complete security system that monitors an object continuously. Consider a situation where a cargo vehicle carrying valuable material is moving in an area using GPS (an outdoor sensor) we can monitor it but the actual problem arises when its movement involves both indoor (within the industry) and outdoor because GPS has its limitations in indoor environment. Hence it is essential to have an additional sensor that would enable us a continuous monitoring /tracking without cutoff of the signal. In this paper we bring out a solution by combining Ultra wide band (UWB) with GPS sensory information which eliminates the limitations of conventional tracking methods in mixed scenario(indoor and outdoor) The same method finds application in mobile robots, monitoring a person on grounds of security, etc. Christo Ananth et al. [11] discussed about Nanorobots Control Activation for Stenosed Coronary Occlusion, this paper presents the study of nanorobots control activation for stenosed coronary occlusion, with the practical use of chemical and thermal gradients for biomedical problems. The recent developments on nanotechnology new materials allied with electronics device miniaturization may enable nanorobots for the next few years. New possibilities for medicine are expected with the development of nanorobots. It may help to advance the treatment of a wide number of diseases: cardiovascular problems, neurosurgery, cancer, diabetes and new cell therapies. The implementation of new methodologies to help on manufacturing analyses and system design for the development of nanoscale molecular machine is one of the most important fields for research. The use of 3D physically based simulation in conjunction with clinical data may provide ways to design practical approaches for control and transducers development. Christo Ananth et al. [12] proposed a system, this fully automatic vehicle is equipped by micro controller, motor driving mechanism and battery. The power stored in the battery is used to drive the DC motor that causes the movement to AGV. The speed of rotation of DC motor i.e., velocity of AGV is controlled by the microprocessor controller. This is an era of automation where it is broadly defined as replacement of manual effort by mechanical power in all degrees of automation. The operation remains an essential part of the system although with changing demands on physical input as the degree of mechanization is increased.

III. EXPERIMENTAL SET UP

Traffic section consists of signals, timer, power supply, IR transmitter, and counter. Initially we give 5v power supply and set a delay between LED's using a 555 timer. Counter counts the delay between each LED's and IR radiations emitted by IR LED only when there is a red signal. Vehicle segment comprise of IR sensors, comparator, transfer, ringer, GSM module, control supply, Microcontroller, LCD, transistors. Vehicle area circuit have introduced alongside two sensors in a vehicle. At the point when a first sensor cross the IR radiation discharged by LED amid red flag comparator looks at the info and gives the high yield. It will caution a rider by showing cautioning message. If he further crosses the red signal microcontroller send a signal to relay and give a warning message to the rider. At the same time it transfer message to RTO section using GSM. After some delay it will turn off the ignition system. RTO section receives the message from vehicle section. It act's as server and it has the details of the driver. It has the power to turn on the ignition system after rider paid a penalty. Ignition system won't turn on until RTO officer turns it on.
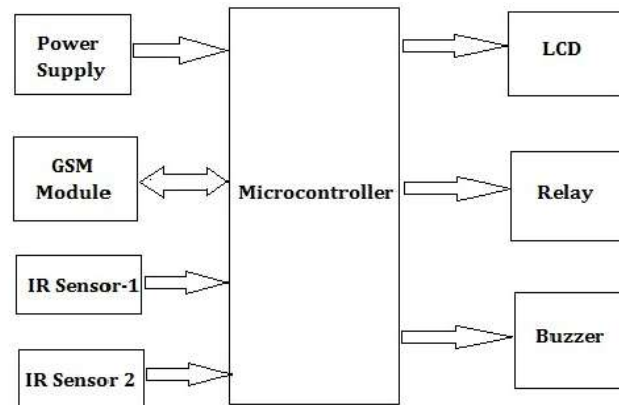
Fig.1. Block diagram of Vehicle section

Christo Ananth et al. [13] discussed about E-plane and H-plane patterns which forms the basis of Microwave Engineering principles. The process of generating Finite Element model consists of meshing or discretizing the model into corresponding elements and the analysis setup with respect to the solver by which it is desired to obtain the analysis results. In brief the process is discussed below. The analysis is branched into two cases i.e., homogeneous disc and functionally graded disc. Pre - Processing involves discretization of Model into nodes and elements of required finite size. The process of discretization is known as meshing. Mesh of a model depends on various factors like thickness, element type and type of results and degree of accuracy. Based on these factors an effective mesh is generated to yield desired results. In disc model, a solid mesh of hex-mesh elements is generated with an average element size of 2mm for each tetra element. Thus the CAD model is discretized into a total of 27600 nodes, creating 22000 elements. It is desired to have at least two layers of elements if the thickness is significant. Mesh density study is carried out such that optimum size is selected if the variation of results obtained. Christo Ananth et al. [14] presented a brief outline on Electronic Devices and Circuits which forms the basis of the project.

IV. RESULTS AND DISCUSSION

Traffic section consists of signals, timer, power supply, IR transmitter, and counter. Initially we give 5v power supply and set a delay between LED's using a 555 timer. Counter counts the delay between each LED's and IR radiations emitted by IR LED only when there is a red signal.
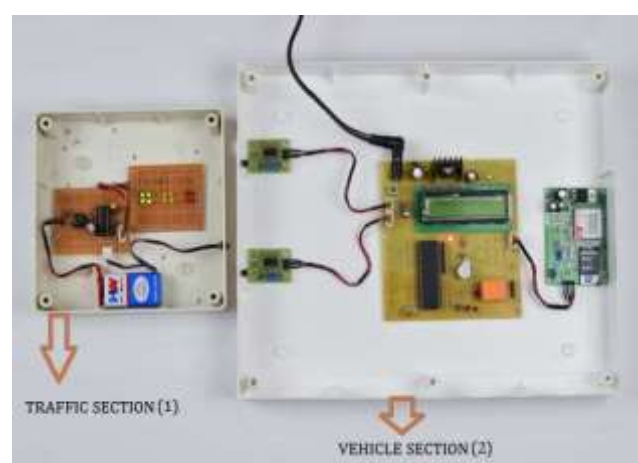

Fig.2. Hardware Implementation

Vehicle area comprises of IR sensors, comparator, hand-off, signal, GSM module, control supply, Microcontroller, LCD, transistors. Vehicle segment circuit have introduced alongside two sensors in a vehicle. At the point when a first sensor cross the IR radiation transmitted by LED amid red flag comparator looks at the information and gives the high yield. It will caution a rider by showing cautioning message. In the event that he additionally crosses the red flag microcontroller send a flag to hand-off and give a notice message to the rider. In the meantime it exchange message to RTO segment utilizing GSM. After some defer it will kill the start framework. RTO segment gets the message from vehicle area. It go bouts as server and it has the subtle elements of the driver. It has the ability to turn on the start framework after rider paid a punishment. Start framework won't turn on until RTO officer turn it on.

V. CONCLUSION

This paper is primarily worried about a framework that has been planned to recognize all criminal traffic offenses like over speeding, stop line infringement, not ceasing the vehicle amid the red light period of the movement flag and after that follow the people who have abused the activity rules. To accomplish a similar two columns of Infrared transmitters are utilized. Initial one is to caution the driver amid the first run through of his infringement, that is when is tries he move despite the fact that there is a red sign on the flag sensor shows the notice message to the driver approaching him to stop for the red flag and move just when the flag has changed to green. Indeed, even the show of caution message if the driver keeps on moving without halting their vehicle then the Second transmitter send a notice to the Road Traffic Officer (RTO) in regards to the infringement subtle elements and the auto points of interest that has damaged the activity rules and next time the autos stops and the motor is turned off, the motor gets auto bolted and just Road movement officer can open the bolt and punishing the violator. The composed framework essentially has 2 areas, first the transmitter that is mounted in the auto and the second is the beneficiary that is at the Road movement office. So the vehicle points of interest are checked and transmitted to the RTO area at whatever point the vehicle disregards the activity run the show.

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