Vehicle Signal Breaking Alert System

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Abstract – Now a days, most of people are breaking the signal and happen the accident. If we avoid the breaking the signal and accident using the new methodology. The objective of this project is to design an efficient automatic authorized vehicle identification system by using the vehicle number plate and RFID. The developed system firstly detects the vehicle RFID tag and then it captures the vehicle number plate. Here Vehicle number plate is detected by using the RFID tag situated on vehicle. And then resulting data is used to compare with the records on a database and data extracted from RFID Tag. And in database there can be specific information like vehicle's owner name, place of registration, or address, etc. If the ID and the number are matches with the database then it show the message "authorized person" else "unauthorized person". Both should be match with the database. If single break any vehicles the RTO have authority to send the fine details by courier given address.

Index Terms – RFID Tag, Vehicle Number, Real-Time, License Plate, Microcontroller, Sensors.

1. INTRODUCTION

As the number of automobiles grows rapidly, the traffic problems increase as well, for example, car theft, speeding, and running the red light, etc. Due to the above mentionable traffic control problem, vehicle tracking, recognition and management has become major topics of modern traffic control system. The current vehicle recognition system includes technique of radio frequency identification (RFID), infrared, and microwave and image recognition. The first three techniques require the installation of transponders on the vehicle. But, in high speed driving, the accuracy rate of detection and recognition is low with the system using transponder. Usually the system uses a monitoring system to enhance the accuracy of the system. Meanwhile, there are still many unsolved problems. For instance, the transponder could be pirated, and the user's privacy could be violated.

Automatic Number Plate Recognition (ANPR) system is an important technique, used in Intelligent Transportation System. ANPR is an advanced machine vision technology used to identify vehicles by their number plates without direct human intervention. The decisive portion of ANPR system is the software model. We also implement further process if any vehicle break the signal then our system can detect that vehicle number tag and check details of that vehicle for applying fine to that vehicles.

2. EXISTING SYSTEM

An algorithm for vehicle number plate extraction, character segmentation and recognition is presented. But nowadays signal breaking fre1quency is high and accident percentages is more. We implement newly proposed system for minimizing above problem. If vehicle break the signal then

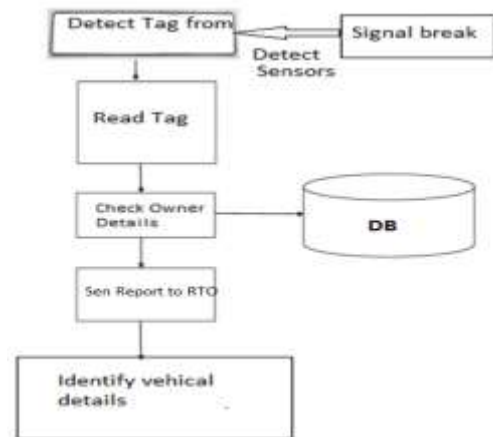immediately send the report to the RTO center and RTO check that vehicle details and apply the fine.

Fig. 1:- Existing System

3. LITERATURE SURVEY

[1] "A Real-Time Mobile Vehicle License Plate".

This method can eliminate any environmental interference during the license plate detection and improve the rate of accuracy of license plate detection and recognition. Moreover, he use the morphology method Black Top-Hat to enhance the level of separation of the license plate characters. Experiments show that the system can effectively and quickly capture the vehicle image, detect and recognize the license plate whether it is in daytime, night time, clear day, raining day or under complicated environment.

[2] "A Review paper on Vehicle Number Plate Recognition (VNPR) Using Improved Character Segmentation Method".

This presents an approach based on simple and efficient morphological operation and sobel edge detection method. he also presents a simple approach to segmented all the letters and numbers used in the number plate. After reducing noise from the input image we try to enhance the contrast of the binarized image using histogram equalization. We mainly concentrate on two steps; one is to locate the number plate and second is to segment all the number and letters to identify each number separately.

[3] "Number Plate Recognition for Indian Vehicles". He present the number plate extraction, character segmentation and recognition work, with english characters. Number plate extraction is done using Sobel filter, morphological operations and connected component analysis. Character segmentation is done by using connected component and vertical projection analysis.

[4] "A Review Paper on Automatic Number Plate Recognition (ANPR) System"

The system first senses the vehicle and then gets an image of vehicle from the front or back view of the vehicle. The system has four main steps to get the required information. These are image acquisition, plate localization, character segmentation and character recognition. This system is implemented and simulated in Matlab.

[5] "RFID and Number Plate Based Two Level Authentication System for Vehicles".

Here Vehicle number plate is extracted by using the image segmentation and Optical character recognition technique which is used for the recognizing the character. And then resulting data is used to compare with the records on a database and data extracted from RFID. And in database there can be specific information like vehicle's owner name, place of registration, or address, etc.
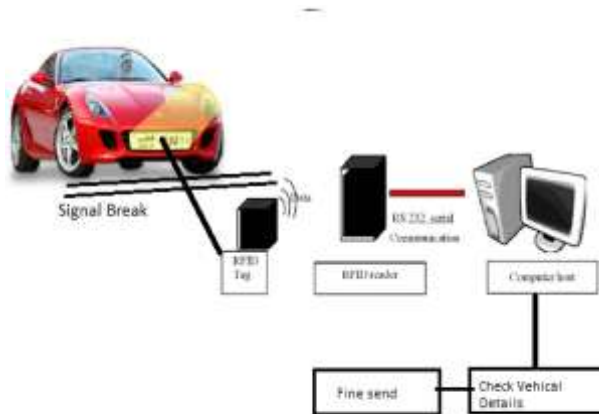
4. PROPOSED SYSTEM

Fig. 2: - System Architecture

In this project is to modernize the present system and style of the new solutions for identification and detection of vehicles supported RFID technology. Here we used the new methodology to RTO system. We implement using sensors and RFID module. We tag all vehicle RFID tag; we situated sensors and RFID reader. If any vehicle breaks the signal then automatically detect that vehicle and assign the fine to that vehicle owner.

5. METHODOLOGY

RFID TECHNOLOGY:

RFID is AN abbreviation for frequency Identification. Currently, the foremost growing technologies within the field of automatic identification. This is often as a result of the flexibility and therefore offers a really numerous vary of pertinence of this technology in varied disciplines of human action. We will mention e.g. To communicating services and its logistical chain and identification of communicating things and transport units. Nowadays, the identification is carried through barcodes and optical character recognition, however there's a shot to deploy RFID technology to whole logistical chain and it exists theme of the transport method, as well as planned technology and simulations of a true communicating method in conditions near operational. From the many of application areas for RFID technology will be named. The technology for contactless automatic identification technique while not necessity of line of sight. This technology is psredicated on the principle of operation of magnetic force waves. Magnetic force waves are used because the data transmission and storage of data. RFID technology, however, despite its huge potentialities and benefits, which is able to be delineate later, isn't as rampant because the barcode. The explanation is value.

6. MATHEMATICAL MODEL

System Description:

Input:

Vehicle number Detection ()

V : Vehicle.

T : RFID tag.

R: Reader (RFID)

D : Vehicle Details.

F : Fine to the owner.

S: Sensors

Output:

Vehicle detected if any signal break.

Input

Function RFID Reder (id, request, data)

ID : unique id for each Tag.

Request : User request for particular data.

Data : User input text data.

Output: Vehicle information detected if any signal break.

Success Conditions: Success system when any vehicle break signal system will detect and apply to fine.

Failure Conditions: Our system fails when no any result found to the given input.

7. CONCLUSION

Here we conclude, the automatic vehicle identification system using vehicle license plate and RFID technology is presented. The system identifying the vehicle from the database stored in the PC. The objective of this project is to design an efficient automatic authorized vehicle identification system by using the vehicle number plate and RFID.

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