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A Survey on Transportation Crime Control System

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***Abstract*— This article offers the study on the sophisticated technology for the Crime Control System of Transportation. It is not possible to hold the radar weapon every time for the traffic police. Different developers and researchers created numerous sorts of methods. The main objective is to investigate and determine the various types of software and hardware (apparatus) utilised for technical and analysis purposes. A highly essential problem in contemporary years is automotive automotive monitoring. It was highly essential and many systems have so far been employed. But with technological improvements, many primary bodies challenge some type of computer technology to address this issue of speed regulation. In this case, we propose a method to identify the vehicles driven beyond the speed restriction specified by the specific road or road limitations. All this is done utilising Internet Of Things technology (IOT).**

Keywords— Transportation crime, Internet of things, Image Processing, Gaining and Transferring

I. INTRODUCTION

The major concern of vehicle accident is the part of frequent tragedy lists, which might happen anywhere anytime and needs proper addressing to minimize the accidents. In Survey of world with Association for Safe International Road Travel Report, around 1.30 million people die and 60 million people are getting injured on the roads each year in the World [1-5]. In India Various causes of road accidents show drivers neglect 4,037 times, passenger's carelessness 40 times, overtake 150, speed 700, drink and driving 800, technical problem 295, animals 20, road condition 60 approximately. In order to overcome these problems, many automobile industries have tried to propose speed control techniques in order to keep up a vehicle safe distance [6]. Unnecessary Speed is a factor in one third of all deadly crashes. Vehicle speed detection is based on the use Sonar sensor to find the speed of the moving automobiles. Radar gun can be demoralized to measure the speed of automobiles and identify those crossing speed limit [7]. Speed calculations are based on a shifting frequency between the transmitted and reflected high frequency wave. The Radar Gun-based speed detector can be connected for measurement and comparison to a microprocessor-based system. The device may be fitted with an HD camera to give a real-time picture of the road. You may link this system through the Internet to the server

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and forward your photos for processing to the server from the road. [8].

The IoT (Internet of Things) is the interrelationship of clearly recognizable fixed computing appliances inside the existing infrastructure [9]. IoT provides cleverness connectivity of systems, facilities and devices, which goes after M2M (Machine to Machine Interactions) and covers different domains and applications [10]. The project aims to design and build a new Smart Vehicle Using IoT technology over speed detector that is vital in human life to notify information regarding speeded cars. This study gives a general idea about a smart vehicle speeding detector by using IoT technologies [11-12].

II. Related Work

In literature we have studies various details about vehicle monitoring system.

The authors of Eye Blink Monitoring using IoT technology presented a technique, which alerts the focus during drowsiness state. An integrated system depends on the psychological state of attention, and eye movements are useful in warning drivers during sleep cycle stage of sleepiness by monitoring head motions. The system results have no influence on a normal eye-blink moment [13].

In [14]., researchers have designed Automated Speed Detection System that may detect the vehicle's speed and if overspeeding happens, then remove the particular vehicle's license number and send it through mail to Toll Plaza in order to charge fine [15]. Here the observable fact Doppler Effect is used for speed measurement. If over-speed is recognised, the picture of a car is automatically captured by a camera and the licence number has been removed by the DIP (Digital Image Processing) techniques [16].

The researcher created a new system [17], that could identify speed infringements on roadways effectively and assist drivers comply with traffic standards through the maintenance of the speed limit [18]. The system created included RFID, GSM (Global System for Mobile) and PIC (Radiofrequency Identification) (18F45K22). The system has delivered dependable, affordable, effective outcomes and real time information. [19].

In [21], a novel Vibration Sensor Device has been proposed by the authors. In case of an accident, vibration is initiated and the location of the car with the GPS locator [22] is recognised. Patrol and life support was immediately advised of the event and the suspect must be traced using a GPS location to recover the accident[23]. By integrating accelerometer measurements, the researchers have calculated the vehicle velocity all the time and have determined acceleration defects. We have done extensive studies, in order to ensure accurate and strong sensor speed in real driving atmospheres [25].

The authors [26] have provided a method for reckless driving on the roads and warning road authorities if a violation occurs [27]. [26]. Numerous techniques need to be human-oriented and include many difficult attempts[28]. The purpose of this paper is to offer an early detection system and to notify dangerous vehicles during rash patterns[29]. Everything needs an IR sender and receiver, a buzzer and a control circuit. If the car surpasses speed, the police are warned by a buzzer signal [30].

A. Problem Statement

Many techniques to verify and detect the fast vehicle are being introduced. However, no automatic system has yet been created to detect speed and identify vehicles without help. The main problems that can be noticed in the contemporary setting are:

- Due to the excess speed of the vehicle, the number of accidents is on the rise, day by day.
- Commercially available devices are very costly and difficult to implement.
- Since the traffic police chalan, the speeding vehicle using different radar guns or infrared sensors. Based on the information from device traffic police generate the driver's chalan.
- Because of this, the people who do not follow the rules or speed limit they can escape easily, And the traffic police don't have the evidence to catch them Because of no True proof or Evidence.

B. Objective

The main primary objective the people follow the traffic rules and the main source of causing accident is broken the signal and over speeding. The objective of our project is to address the issues are discussed.

The objectives are as follows:

- The issues of over speeding without use of human resources, we have designed an automatic and multipurpose system that addresses.
- To detect the speed of the over speeding vehicle and give the truth evidence to the victim using image processing.
- To exchange the information among them we use IOT technology.
- And the Data will be stored in server by using Firebase.

III. The Nature and Extent of Crime

There is limited data on the extent of crime and disorder on public transportation, and there are discrepancies in the actual levels of crime and disorder on public transportation. The lack of standardised reporting and recording of crimes, as well as the multiple agencies responsible for maintaining and operating the various systems, are the most likely reasons for this.

In terms of the extent of crime and disturbance on public transportation, published data range significantly. According to a research conducted by the Department for Transport in the United Kingdom (DfT, 2010), there were 12 crimes per million passengers on the bus network in 2008-2009, and 13 crimes per million on the subway and overground services.

IV. Crime Prevention Strategies

The basic principle of the system is it will capture and create the incident evidence and upload it to secure authorized server for further plan of action. Since the traffic related incident has very limited scope of court case arguments as there are no evidence of the same. Al the traffic related automation and the devices are handled by traffic police and has no centralized access to the server and no evidence protections. The proposed system is mainly designed to protect the human rights by preserving the actual incident evidence by the means of server-based security and specially designed image-processing algorithms. Whenever traffic rule breaking especially high-speed vehicle crime taken place the system will start acting upon it. System existing system is capable to collect the speed vehicle evidence through camera image capture. Here we are providing next step by acceding the incident location and preparing the incident evidence and upload it right away to secure government server.

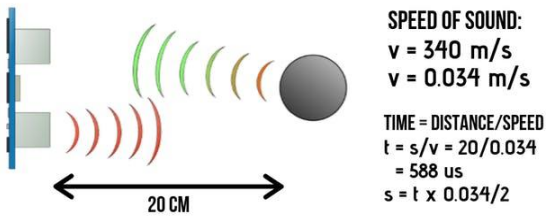

Figure 1. Calculating Speed And Distance.

V. Security Provision

The system is primarily intended to protect human rights by retaining actual incident evidence using server-based security and custom image-processing algorithms. Whenever a traffic regulation is broken, particularly when a high-speed vehicle is involved, the system will take action. The current system is capable of collecting evidence of speeding vehicles via camera images. capture. We'll take the following step by gaining access to the incident site, preparing the incident evidence, and uploading it to a secure government server as soon as possible.

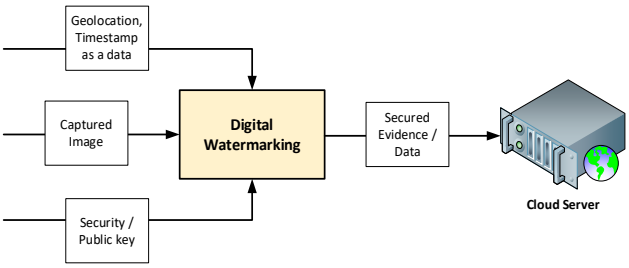

Figure 2. Evidence Preparation

VI. Conclusions

This paper addresses the challenge of accurate vehicle overview detection with urban IoT technologies to promote

the development of automotive applications. The intelligent vehicle over speed detector is utilised for sensing driving circumstances in order to obtain a high detection precision. The suggested method is particularly utilised as evidence to detect and prevent accidents by speeding cars and reporting to the involved authorities.

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