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Title: **PROPOSE AND EXECUTION HABITUAL TOLL GATE COLLECTION SYSTEM**

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PROPOSE AND EXECUTION HABITUAL TOLL GATE COLLECTION SYSTEM

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ABSTRACT:

In this venture we address the troubles faced at toll plaza & additionally introduce identity system for vehicles against which stolen and twist of fate cases are registered using RFID. The owner has to create an account through mobile application & sign up his RFID tag. When vehicle passes thru Toll Collection Unit (TCU) it is classified as passenger or goods carrying vehicle primarily based on its Unique Identification Number. A goods vehicle is weighed at TCU & if it's far overloaded then charged with greater tax. UIN is surpassed to Central Server Unit wherein the balance receives deducted from account. Once the balance is deducted at CSU it'll indicate TCS to open the barricade and automobile is permitted to skip. If automobile is detected to be stolen at CSU it will indicate TSC no longer to open the barricade. Also to triumph over the hassle of hit & run instances collision detection mechanism is carried out using piezoelectric sensor in vehicle to identify RFID of collided motors. This info can be used for similarly motion.

Keywords: RFID, RFID TAG, Internet of things, IOT Platform, Cloud connecting.

1. INTRODUCTION

In our daily life we often visit toll plaza. At toll plaza we face the problems like congestion, wastage of time and fuel. To overcome the above problems it is necessary to speed up the process at toll plaza. Hence to overcome the problems faced at toll plaza we use RFID based toll collection system. The processing time require for RFID Toll Collection System is much less than manual toll collection system. Manual toll collection system also leads to human errors which may lead to incorrect toll collection. We also often get to hear that the number of hit and run cases is increasing day by day. It may even leads to loss of life. It is difficult to apprehend the culprit in hit and run case. It is observed that when the vehicle is stolen it is very difficult to track the vehicle. It is

very necessary to control these above problems. So, the system also has an additional feature of detecting the vehicles against which stolen and accident cases are registered. It is observed that overloading the vehicles may lead to accident and also damage the roads. This problem is also address in system by weighing goods carrying vehicle and charge them with extra toll if it is overloaded so that they will not overload again. System also makes payment system easy by making all transaction online using mobile application. In this paper we accomplish work of vehicle identification during collision by exchanging RFID numbers, which will help to find the culprit in hit and run cases. This paper is organized as follows. Section II consists of literature

survey. In this field III, components to be used are specified. Section IV describes system model and detailed working of system. In Section V, we have shown experimental result to evaluate our proposed system. Section VI provides conclusion. Section VII gives information of future work.

2. RELATED STUDY

A research in field of application of RFID system is increasing on huge scale. The main reason for such a huge appeal for RFID is low cost and low maintenance of RFID system. Some of the existing applications of RFID system are logistic and supply chain visibility, item level inventory tracking, manufacturing, access control, animal tagging, library system, real time location system, etc. The RFID system is also used in toll collection system following systems gives detailed scenario. In [5] the system comprises of toll collection unit, when vehicle arrives at toll plaza a RFID number of tag is detected and toll amount is deducted from corresponding user account then the vehicle is allowed to pass. In [4] the system comprises of toll collection unit, when vehicle arrives at toll plaza the RFID number of tag is extracted and balance is deducted from corresponding user account. Once the balance is deducted the information of transaction and balance left in account is sent on user mobile using GSM module, so that user has a valid proof of transaction. In [1] system comprises of toll collection unit and stolen vehicle detection mechanism. In this system when vehicle arrives at toll plaza it checked whether vehicle is stolen or not. If it is found to be stolen information is forwarded to owner. Otherwise balance is deducted from user account and vehicle is

allowed to pass. In [3] the automation of toll plaza has been done based on image processing. ANPR (Automatic Number Plate Recognition) system has been employed for detection of vehicle. When vehicle arrives at toll plaza a camera is used to capture the image of number plate of vehicle. Once the image is captured ANPR system is use to extract the number of vehicle. When the number is extracted a toll amount is deducted from corresponding user account. In this system RFID is not required, but system requires high installation cost. A number of automobile companies are working to develop efficient vehicle identification during collision mechanism to detect the culprit in hit and run cases. Implementation of existing vehicle collision detection system is expensive. Hence it is provided only for luxury vehicles. In [7] the system use GPS and Zigbee module for vehicle identification during collision. When collision occurs vibration sensor placed in front of these vehicles senses the vibration and gives alert to traffic police via Zigbee. In this case if culprit tries to escape without stopping, then vibration sensor in vehicle send corresponding location to traffic cops server via Zigbee.

3. AN OVERVIEW OF PROPOSED SYSTEM

This project gives the simplified procedure to passengers to pay toll at toll booths by making them automated, vehicle theft detection, signal breaking avoidance, tracking over speed vehicles. All these activities are carried using single RFID tag thus saving the efforts of carrying money and records manually.

A. Automatic Toll Collection: The RFID Readers mounted at toll booth will read the prepaid RFID tags [4] fixed on vehicles' windshield and automatically respective amount will be deducted. If the tag is removed from the windshield then cameras fixed at two sites at toll plaza take snaps of the front and back number plate. Since every vehicle registration ID is linked to users account, toll can be deducted from the account bank directly.

B. Vehicle Theft Detection: When vehicle is stolen the owner registers complaint on the website with its registration ID and unique RFID tag number. Now when stolen vehicle passes by the toll plaza, the tag fixed on it is matched with the stolen vehicle's tag in the database at the toll booth.

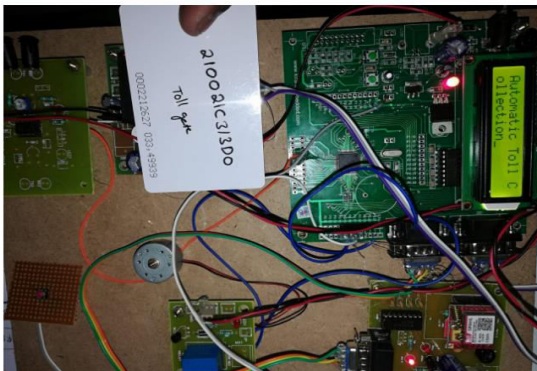


Fig.3.1. Hardware kit.

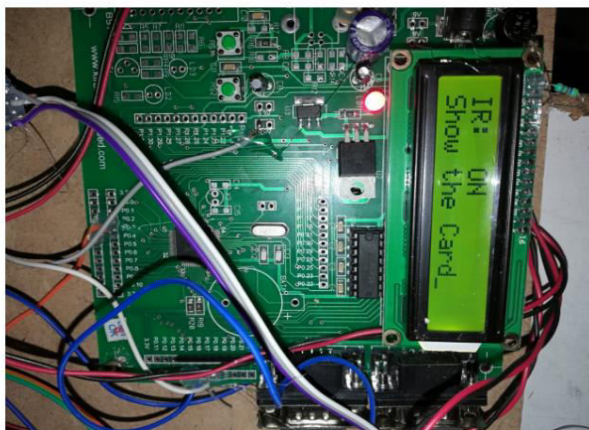


Fig.3.2. Waiting fot RFID card.

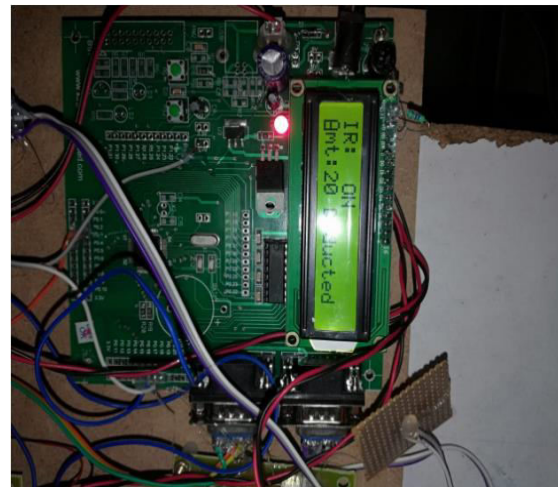


Fig.3.3. Amount automatically deduct in account.

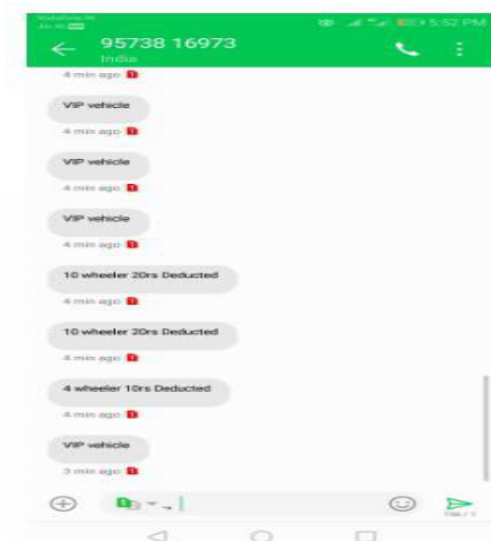


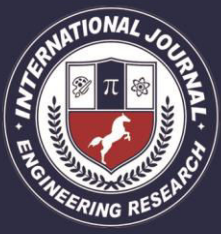
Fig.3.4. Output Results.

4. CONCLUSION

In order to reduce the congestion and time wastage at toll plaza, the toll collection system is to be implemented. The theft detection system is to be implemented for detection and tracking of stolen vehicles when it arrives at toll plaza. In order to make payment mode easy and also to keep record of account on user side mobile application needs to be develop.

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