

Postpaid Electronic Toll Collection System

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Abstract— Road transportation plays necessary role within the move, good transportation, varied import and export sectors. But, these days there is a vast rush within the toll plazas so as to pay the toll tax. thus so as to reduce the hold up and to save lots of time conjointly to cut back the economical loss of India upto three hundred large integer rupees per annum, we are able to style the advance toll assortment system that accommodates automation in toll tax payment victimization RFID. The system can build the automation of piece of ground victimization combination of small controller, RFID, Load cell technology. The implantation of automation in piece of ground that could be a step towards rising the watching of vehicles, move in predetermine routes. The aim of our thought is to style a system, that mechanically identifies the approaching vehicles and record vehicles data that includes vehicle number, current time, owner's information. If the vehicle is permitted, then the system mechanically opens the toll gate and bill of planned amount can mechanically fetch on house owners Web application. This translate to cut back holdup at toll plazas and helps in lower fuel consumption, scale back transportation time.

Key words: RFID Tag, RFID Sensor, Security, Electronic Toll

I. INTRODUCTION

With the rise within the range of vehicles on road, the task of traffic management becomes a lot of complicated. It's arduous to stay maintain the main points of the each vehicle, that is running on the road. additionally just in case of hit and-run or carrying of outlaw merchandise over inter-state cross boarder or road-robbery cases, the police might not trace the culprits terribly simply, because the vehicle details don't seem to be monitored continuously. Suppose. The shipment Company desires to send a message to its On-road vehicle to prevent delivering the products to client, peace officer need to stop a vehicle that is importing some outlaw merchandise or town transports need to track every buses details like departure and point in time on terminal, number of spherical visits it's undergone during a single day. All this can be potential by the use of machine-driven toll gates. This technique is meant to assist the RTO, Police Department, conveyance and shipment firms to trace the vehicles.

Electronic toll assortment (ETC) may be a standard technology within the intelligent transportation system (ITS) space that permits the electronic assortment of toll payments. It's been studied within the last fortydecades, and applied in numerous contexts, e.g., highways, bridges, tunnels etc. ETC systems are typically developed by suggests that of frequency identification (RFID) technology. ARFID-based ETC system consists of 2 main actors like a reader and a transponder (or tag). Passive tag systems are typically most well-liked thanks to its main advantage of being cheaper. The reader is placed at an explicit height higher than the lane and irradiates energy toward the tag (placed on a vehicle) so as to modify communication link.

II. LITERATURE SURVEY

A. Paper1: Automatic Toll E-ticketing System for Transportation System.

In this Paper, the concept of Automated toll ticketing using MSP430 Launch pad. We have used an innovative approach where a traveler will be able to pay the toll while in motion using RFID communication technology. Through this process of toll collection will save time, effort, and man power.

How many vehicles passing through the tollgate stored in a database. We can also find out a vehicle how many times passing through the toll gate in a day. The improvement can be done to develop a multi vehicle amount deducted and send a SMS at a time multi vehicle.

B. Paper 2: Automation of Toll Gate and Vehicle Tracking

This system explains the implementation of Toll Gate Automation which is a step towards improving the Tracking & monitoring of vehicles, traveling in predetermined routes. In this system, a computerized system automatically identifies an approaching vehicle and records the vehicle number& Time. If the vehicle belongs to the authorized person/group, it automatically opens the Toll Gate and a predetermined amount is automatically deducted from its account.

C. Paper 3: Automation of Toll Gate and Vehicle Tracking

Toll gate Automation and Vehicle Tracking is designed to automatically keep track of the vehicles movement, record the time and the details like Owner's name, date of registration, vehicle modeled. This system is very useful for automatic vehicle tracking, time management and also for automation of Toll gate. This paper explains the implementation of Toll Gate Automation which is a step towards improving the Tracking & monitoring of vehicles, traveling in predetermined routes.

D. Paper 4: GPS Based Automatic Toll Collection System

Has emerged as a dominant part of India. Toll plazas play a crucial role in maintaining the road transportation. At present, manual toll collection is most widely used collection method in India. Itsignificantly requires a toll collector or attendant. Due to manual intervention, the processing time at toll plazas is highest. The paper proposes a design for the automation in toll tax payment using GPS and GSM Technology. Automation of toll plaza has been experimented using combination of Microcontroller, RFID, Global positioning system, Global system for Mobile.

E. Paper 5: Intelligent Toll Path System using GPS and GSM

Transportation has emerged as a dominant part of India. Toll plazas play a crucial role in maintaining the road transportation. At present, manual toll collection is most widely used collection method in India. It significantly requires a toll collector or attendant. Due to manual

intervention, the processing time at toll plazas is highest. The project has been designed for the automation in toll tax payment using GPS and GSM Technology. Automation of toll plaza has been experimented using combination of PIC Microcontroller, IR transmitter and receiver, Global positioning system, Global system for Mobile. Implementation of automation in toll plaza enhances the monitoring of vehicles that are travelling in predestined routes.

III. EXISTING SYSTEM

The smart tolling systems support toll collect, no overloaded vehicles, speed enforcements and so on base on wireless communication systems. In our system we develop an android application in which driver after reached at toll plazas 500 mrange using GPS, driver gets locations of toll plaza. In our system, driver will add money in android application and it get all information about toll and driver will pay toll amount. So driver no need to wait in queue for pay toll amount. In toll counter, admin person will check all details about vehicle and view payment details .using our system, we can easily resolve highway traffic problem.

IV. OBJECTIVE

- 1) Lower fuel consumption of vehicle data
- 2) Decrease is transportation time.
- 3) Reduce the traffic jams at toll plaza.
- 4) Dont need to pay the toll tax at the same location of toll plaza at same time.

V. PROPOSED SYSTEM

The system can create the automation of parcel exploitation combination of small controller, RFID, Load cell technology and Payment golem Application. The implantation of automation in parcel that may be a step towards up the observance of vehicles, move in predetermine routes. The aim of this system is to style a system, that mechanically identifies the approaching vehicles and record vehicles info that includes vehicle identification number, current time, etc. If the vehicle is allowed, then the system mechanically opens the toll gate and bill of preset amount can mechanically fetch on house owners mobile application. This translate to scale back hold up at toll plazas and helps in lower fuel consumption, cut back transportation time.

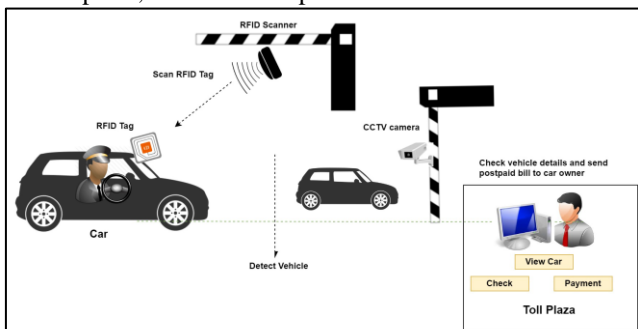


Fig. 1:

A. System Requirement and Specification

1) Hardware Resources Required

- 1) Processor : Pentium –IV

- 2) Speed : 1.1 GHz
- 3) RAM : 256 MB(min)
- 4) Hard Disk : 20 GB
- 5) Key Board : Standard Windows Keyboard
- 6) Mouse : Two or Three Button Mouse
- 7) Monitor : SVGA
- 8) Scanner : RFID Scanner.

2) Software Resources Required

- 1) Operating System: Windows 07/08/Above
- 2) Programming Language: JAVA/J2EE/XML
- 3) Database : MY SQL

VI. CONCLUSION & FUTURE SCOPE

The system can create the automation of tract exploitation combination of small controller, RFID, Load cell technology and Payment golem Application. The implantation of automation in tract that could be a step towards up the observance of vehicles, traveling in predetermine routes. The aim of our thought is to style a system, that mechanically identifies the approaching vehicles and record vehicles data which includes vehicle identification number, current time, etc. If the vehicle is allowed.

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