

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Website: www.ijirset.com

Vol. 6, Issue 9, September 2017

Review on Online Toll Collection System based on Optical Character Recognition

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ABSTRACT: Automated Toll payment system is used to provide flexibility and reliability in paying toll amount at toll plaza. These system involves the use of high capacity cameras on toll plaza capable of capturing number plate of car. The image processing is performed on captured car number plate image. The image processing is used to detect the owner of car using car number plate. The amount can be paid by several ways such as registered user using wallet on Automated toll payment system website for users and another way as E challan ..

KEYWORDS: RFID-Radio- frequency identification, ACID-Automatic Identification and Data Capture.

I. INTRODUCTION

In today world the transportation is important and backbone of any county's Economy so to achieve the smooth and efficient flow of traffic on highway we can use these automated toll payment system. The system involves the use of cameras on highways to capture the image of number plate and apply image processing on captured car number plate image. To detect the owner of car. It helps in smooth and efficient payment at toll plaza without waiting in long queues on highways. These system is not only capable of reducing congestion of cars traffic but also prevent the loss of fuel. After success full payment the success full payment message is sent on registered mobile user.

The whole system is very efficient and reduce the manual work on toll plaza. The amount of toll can be calculated very easily without any help of manual work.[1]

II. RELATED WORK

i. FASTag

It is easy to utilize, reloadable label which empowers programmed reasoning of toll charges and gives you a chance to go through the toll square without ceasing for the money exchange. FASTag is connected to a prepaid record from which the pertinent toll sum is deducted.

The tag utilizes Radio-Frequency Identification (RFID) innovation and is joined on the vehicle's windscreen after the label account is dynamic. FASTag is an ideal answer for a bother free stumble on national interstates. FASTag is by and by operational at 180 toll squares crosswise over national and state interstates. More toll courts will be brought under the FASTag program later on.

FASTag is a gadget that utilizes Radio Frequency Identification (RFID) innovation for making toll installments specifically from the prepaid record connected to it. It is appended on the windscreen of your vehicle and empowers you to drive through toll squares.

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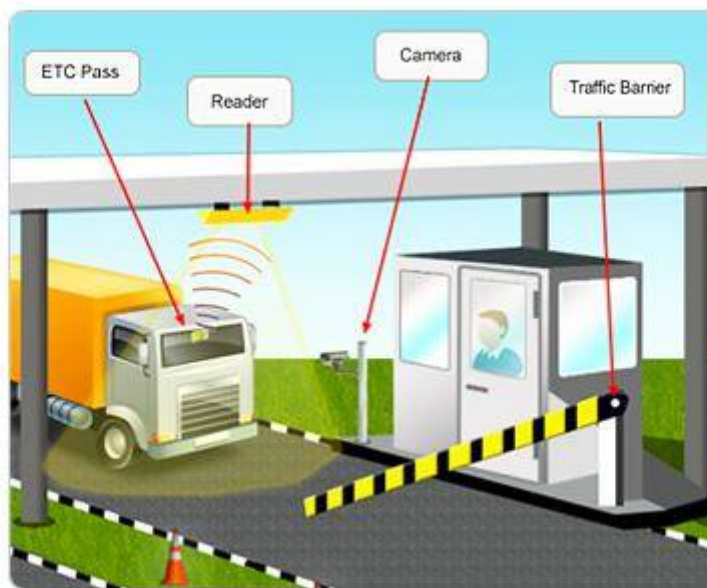
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FASTag has a legitimacy of 5 years and in the wake of buying it, you just need to revive/top up the FASTag according to your necessity.

FASTag offers close constant development of vehicles through toll courts and the comfort of cashless installment of toll expense with across the nation interoperable Electronic Toll Collection Services.



An Example of Automatic Toll Management & Collection by Efccon India

Customer may recharge his tag account online through, Credit card/Debit Card/ or net banking, but we are also providing a facility of wallet.

In FASTag, it is compulsory that every individual has his specific bank account. But we are providing it by E-Challan.

In FASTag, every individual has to put a barcode on their vehicle so that it can be detected. But this barcode is made of paper, as a result there are the chances that the paper can tear off.

So this will be done by image processing, which will capture the number plate of vehicle.[2].

ii. Paybyphone

It is for parking system and toll payment system. For toll payment by this app the user needs to download this app. After this register all the details of the approaching user to get started on the service. One account works everywhere for tolling system.

Enabling tolling by logging on to the website and editing 'Vehicle Details' in your profile. They can make auto-payments, meaning worry-free driving. And they will send the SMS & email payment notifications, so they can keep track of their usage.

Vehicle has to wait near toll plaza for the detection of the bar code. That bar code reader which is on the toll scans the barcode and the individual has to pay the amount.

But, as we are designing a wallet, the payment will be done automatically without waiting near toll. [3]

iii. RFID

Radio-frequency identification (RFID) utilizes electromagnetic fields to consequently distinguish and track labels appended to objects. The labels contain electronically put away data. Detached labels gather vitality from a close-by RFID peruser's examining radio waves. Dynamic labels have a nearby power source, for example, a battery and may work many meters from the RFID peruser. Dissimilar to a standardized identification, the label requires not be inside the

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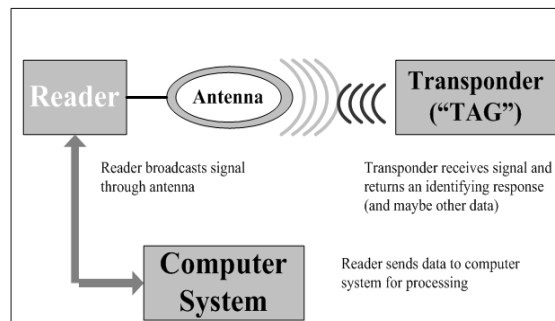
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viewable pathway of the peruser, so it might be implanted in the followed question. RFID is one technique for Automatic Identification and Data Capture (AIDC).

RFID has a place with a gathering of advances alluded to as Automatic Identification and Data Capture (AIDC). AIDC strategies naturally distinguish objects, gather information about them, and enter those information specifically into PC frameworks with practically zero human mediation.

RFID techniques use radio waves to finish this. At a basic level, RFID frameworks comprise of three parts: a RFID tag or shrewd mark, a RFID peruser, and a recieving wire. RFID labels contain a coordinated circuit and a reception apparatus, which are utilized to transmit information to the RFID peruser (likewise called an examiner). The peruser at that point changes over the radio waves to a more usable type of information. Data gathered from the labels is then exchanged through an interchanges interface to a host PC framework, where the information can be put away in a database and investigated at a later time.



RFID is more costly on the grounds that they are more perplexing. They contain a microchip, a radio handset, a reception apparatus and have a battery.

The read scope of a uninvolved tag is like that of a standardized identification. However the dynamic labels are keen and all the more intense, and can transmit and get over a more noteworthy separation. While they cost more, you may at present spare by and large, contingent upon the application. When evaluating a RFID framework, consider costs over the framework lifetime, not only the cost on the day you get it. You have to do a full lifetime costing to decide the reasonability of utilizing RFID.

Another weaknesses of RFID is that you can't see RF (it's undetectable) and the labels might be covered up. So on the off chance that you can't read a label you're less inclined to know why, than with a scanner tag ID framework... you can't make sure if the tag is even there?

It can be likewise influenced by metal. Metal items will influence a RF field, so don't expect 100% unwavering quality in case you're working close metal articles.

These are the disservices of RFID that will be going to overcome.

III. PROBLEM IN THE EXISTING SYSTEM.

Issue explanation "Outline an Automatic toll court which depends on picture preparing to identify auto number plate and to spare the time at toll square and having money free operation" As the name proposes "Programmed Toll Plaza" is the key subject of our venture is the robotization. So here we will simply examine about the over look of what is mean via Automation. So in exceptionally straightforward dialect the Automation intends to supplant the person with the machines to decrease human work. Means the work done by the human is currently performed by machines.

Issue behind this was the vehicles needs to hold up close to the toll square to pay the toll sum and it result in expanded manual work. If there will be substantial movement on toll court then because of this it will come about the activity issue. It will likewise expend substantially more time. There is no presence framework in india for programmed toll installment at toll court.

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IV.OBJECTIVES AND FUTURE SCOPE

The main goal behind this project is to improve the efficiency and performance of the system.

The objective is that it will detect the number plate of the vehicle and through that, it will grasp all the information of the owner such as owner name, owner card number, owner contact details, account no of a particular bank etc.

It will also detect the type of vehicle i.e light weighted or heavy weighted and according to it will send the message to that owner's phone number.

The objective is to do the transaction process between the modules i.e. user and the admin.

To do online payment, so there will no longer waiting time in toll queue.

To reduce the manual work, so the time will be saved in paying toll at toll plaza.

There will be no formation of queue as there is no manual work, as a result it will improve traffic strategy.

V. CONCLUSION

The problem in the existing system are more so to overcome the system, we created this system.

The explained system will definitely overcome the problem. These system involves the use of high capacity cameras on toll plaza capable of capturing number plate of car. The image processing is performed on captured car number plate image.

It helps in smooth and efficient payment at toll plaza without waiting in long queues on highways. These system is not only capable of reducing congestion of cars traffic but also prevent the loss of fuel .After success full payment the success full payment message is sent on registered mobile user. The whole system is very efficient and reduce the manual work on toll plaza. The amount of toll can be calculated very easily without any help of manual work.

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