

An Electronic Toll with a Bar Code Reader

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Abstract - In this paper, a novel Bar Code Reader prototype is proposed with an embedded power and other harvesting mechanisms on low-cost paper based substrate. Integration of Bar Reader electronics such as Integrated Circuits (IC's), Sensors is also discussed for a variety of application in transportation, logistics and security. In this we would like to say how fast tag is method can be implemented by using bar code reader. In order to make it simple and to save the time. In addition to that a brief description about working of bar code reader is included in this reader. This will be the key process for the central government in the toll gate in various parts of India.

Key Words: Online Banking, Travellers, Time Saving, Security Measures.

1. INTRODUCTION

Individuals who own the vehicle will drive their vehicles will also drive their four wheelers through the highways. In this each highways will have the toll gates between the districts. In this situation if we want to cross the toll gate we want to pay money.

But we usually wait in the line and there will be some persons in the toll to collect some cash. It takes some time for receiving process. It takes into trouble for some emergency purpose. And also in case of festival time people will return from their native land to working place.

In this situation there are some tolls they use RFID [Radio-Frequency Identification] tags in the roadways. But however we can propose some other system instead of this tag we can use Bar Code Scanner.

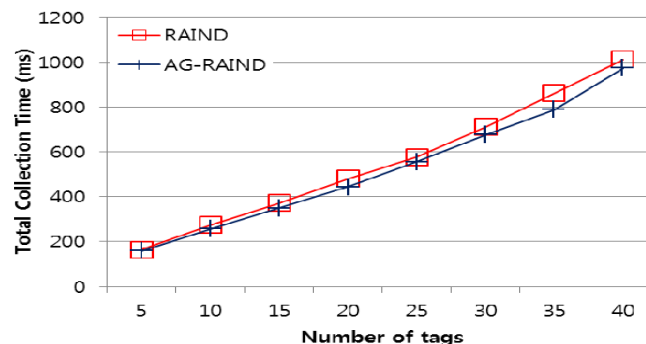


Chart - 1: Ranges on Tags

The above image shows the variation in the tag level and the total collection time. And this makes us to think that we have to upgrade some other option. But the RFID Tags will also takes less time but it also has some problem. It takes some time to scan but there are some failure issues regarding the tag over the radio-frequency identification.

In this if we use the bar code scanner and we can also introduce the some card. In the plastic material and that has some bar code for individuals that may have the details of registered person. That card contains the basic details of the vehicle and it may also contain our bank detail. We use the bar code scanner and some of the scanning sensor in the machine. This helps us to save the time. For that purpose, our project paves a way.

2. METHODOLOGY

The problems of the people in the toll gate are mainly time lapse and lots of fuel consumption, they have to wait for longer time and the fuel which they wait to pay their toll tax is high. Because nowadays the fuel like petrol diesel rate are reaching a high

level and the consumption of fuel is also high. So we have decided to introduce a Smart Card along with the details of the owner and vehicle registration number. In this process we save our time fuel.

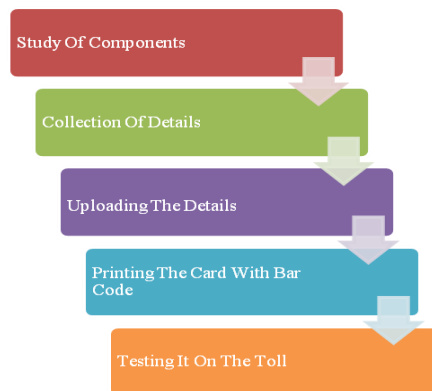


Chart – 2: Work Flow of System

3. CHARGE COUPLED DEVICE

Charge Coupled Device (CCD) sensor is a complex electronic component that consists of a multiple array of sensible semiconductors elements. In this with the control of external circuit each capacitor can transfer its electric charge to a neighbouring capacitor. With this it will transfer the electrical signal and it will scan the bar code in the given card.

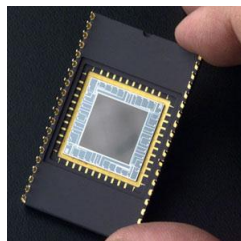


Figure – 1: Charge Coupled Device

4. WORKING OF CHARGE COUPLED DEVICE

Charge Coupled Device (CCD) has a single charge to voltage conversion circuit and single amplifier. So change from each pixel is transferred to the next row and eventually to the shift register, therefore the charge is transferred one by one and then it is converted into the voltage.

Sensor Size: Sensors come in various sizes or image sensor format. These sizes designation such as 1/1.8” (or) 2/3” called the optical format.

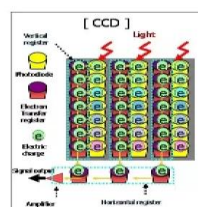


Figure – 2: Inner Parts of Charge Coupled Device

5. BAR CODE READER

A Universal Product Code Reader (or) Universal Product Code Scanner is an optical scanner which will read printed Universal Product Codes and decode the info contained within the bar code and send the data to a computer. Additionally bar code reader contain its own decodes circuitry that can analyze the bar code's image and data provided by the sensor and sending the bar code content to the output port.



Figure – 3: Bar Code Reader

6. ADVANTAGES OF BAR CODE READER

- I. Bar Code eliminates the possibilities of human error.
- II. Using a bar code system it reduces the employee training time.
- III. Bar Codes are inexpensive to design and print.
- IV. Bar Code provides better data.
- V. Data obtained through bar code will be available rapidly.

7. EXISTING SYSTEM

In recent times the toll gates are increased. In that manner there will be a huge process of crossing the gates. The drivers will be waiting for long time to cross the toll gate. There is a condition that two-wheelers have to go in a particular way. And four-wheeler, lorry and huge load trucks should go in a separate line in order to pay their toll tax. Because each vehicle has some separate amount which is allocated by the government. And on the other way there is recent proposal by Indian government is fast tag using RFID (Radio Frequency Identification). They said RFID tag will help the drivers to cross the toll gates in short time period. Initially it runs in a good manner, but there is a problem over there. RFID tags can read without any knowledge. For sometimes the radio signals will not attain the frequency. Till now in India the RFID tag system is consider as a failure one. So, therefore RFID tag system and initial money collecting system is a failure one in India.

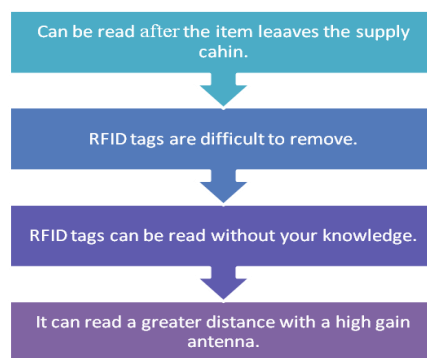


Chart – 3: Problems on RFID

8. PROPOSED SYSTEM

Atlas we have proposed a solution which will bring end to this problem. For this issue we can attach a card with our Name, Vehicle no, License no, and our Bank details will also linked to it, which will be similar to ATM card. When we drive a vehicle in a national highway and move towards the district, we have to cross the toll gate. So that instead of paying the money to a person. We can handle this process. We can provide a plastic card in a small size placed with a bar code. It can be consist of our vehicle no, license no, and our bank details will be linked to it. So when we reach the gate there will be a scanner. The scanner consists of Charge Coupled Device sensor. There can be a one person. Then it will scan the bar code. Once it is scanned. Then it

will show your details in the screen, then if we press the enter. The amount will be deducted in from the account. We will receive the message. This process will save the time and illegal transaction.

9. CONCLUSION

With this process we can show how we are initiating the digital trade. In this process we can save the time avoid the mishandling of money to a third person. Though in this process we can say that there are lots of initials who are trying to overcome this problem. Because this problem not only occurs in one place, it took place all over the nation. Many people proposed different solution. Though some of the proposed solution may get into the trouble. So this will be our one of the proposed solution.

BAR CODE	RFID
1. Less Expensive.	1. More Expensive.
2.Environmental Damage	2. No Damage.
3. Need Human Interface.	3. Do Not Need Human Interface.

Table-1: Comparism

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