

INTRODUCTION

FasTag is a new way of payment at toll booths which uses Radio Frequency Identification (RFID) technology for making direct payments at toll booths from prepaid/savings account linked to the FasTag system.

FASTag is operated by the National Highway Authority of India. This system must expand to every toll booth in India and be employed in all countries by governments as the ROI is massive.

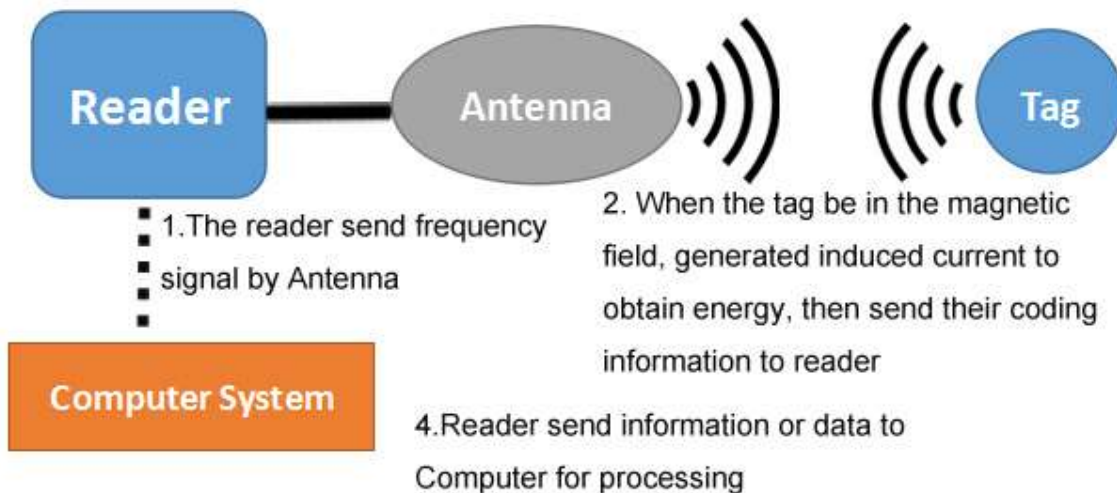
The device is fixed on the windscreen of cars enabling the driver to drive without stopping at toll plazas and the payment is automatically made.

As the vehicle approaches the toll plaza, a unique identification number which identifies the vehicle is read by the roadside RFID tag reader.

This identification number is sent to a central system through Internet.

The respective tax for the respective vehicle will be deducted directly from the prepaid FASTag account.

3. Reader Collecting information and decoding



The use of this technology is certainly currently very limited and it can and should be extended to the convenience of the general public. Making FasTag a more common mode of payment is a possibility which must be explored.

NEW FEATURES

Police can collect challans/fines directly from the FasTag account of the violator. Every policeman will be given a username and a password to login.

Petrol Pump Payments can be done using FasTag.

MODULES

FASTAG : This module contains two scripts namely getotp and clearscr.

The getotp script contains a function which generates a random 5 digit OTP used for the confirmation of Petrol Pump payments making them secure.

The clearscr script contains a function which is used to clear the command prompt(for Windows)

API

fast2sms : This API is used to send text messages to the phone number of the registered user.

The Developer's API has a unique API Authorization Key which is used to send 20 free sms per day.

BACKGROUND

User : The user must be able to operate Windows.

The user must know basic command prompt commands.

Developer : The developer must have knowledge of Python3.8.

The developer should have knowledge about distribution of packages.

GETTING STARTED

(The user must have python installed on the system)

1. Download the WinRAR Archive file.
2. Unzip the file.
3. Open FASTAG-1.0
4. Hold Shift Key and right click.
5. Click on 'Open Powershell Window here'.
6. Type : `python setup.py install`
7. Type: `cd bin`
8. Type: `python Run.py`

WORKING

The customer can add money in his account using various banking options. He can also view his Balance. The customer will get a sms on the registered phone number informing him about his balance.

The police can scan the FasTag and collect the challan, by choosing which rule was violated; in the app. The vehicle type of the violator is an attribute of its account. When the police scans the FasTag,

the app automatically opens the rule violation list for the particular type of vehicle without manual entry.

The petrol pump executive will scan the FasTag and enter the amount fuel to be filled. The customer will get a verification OTP and after verifying the OTP, the amount will be deducted from the customers FasTag account.

BENEFITS

TOLL : There will be less congestion at toll booths due to faster working of FASTag system when compared with manual transaction. Currently there is an average waiting time of 5 minutes which can be significantly be reduced to less than 10 seconds (3000% faster).

POLICE : The time taken to collect challan will be reduced. If the violator doesn't have the money to pay the challan, the amount will be deducted from the FasTag even if there is no balance thus updating the balance to negative. The user can add balance in its FasTag account later to make it zero(Within limited time frame of 10 days).

PETROL PUMP : The user won't have to get down of the vehicle or even roll down the windows to make payment which is convenient and safe in many ways.

FUTURE EXTENTION

Overspeeding vehicles could be easily caught without manual interception of Police having to take down violator which can be risky at times for Police as well. Violators won't be able to flee fines.

We can use AI for enhancing it more by doing all the work automatically without the need of an Petrol Pump executive/Policemen to be present.

This can further be enhanced by collecting fines for no seatbelt/helmet by determining if the user has violated the law using cameras and AI.

##Make an account on fast2sms.com and get a new API authorization key. Copy it and replace it in the authorisation field in Run.py##

##You can use any other API you want.