Electronic Toll Collection System

Features: Automated vehicle identification

Red – copy pasted material

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Automated Vehicle Identification (AVI) is **a process that uses an advanced Radio Frequency Identification (RFID) technology to identify a vehicle as it passes the** RFID reader. Other types of AVI systems identify vehicles through license plate recognition.

First, the roadside antenna at the entrance tollgate sends a signal to the in-vehicle device with information about the entrance.

When exiting the expressway, at the exit tollgate, the in-vehicle device sends the previously received entrance information to the exit tollgate roadside antenna, the toll is calculated, and the roadside antenna sends toll information to the in-vehicle device.

Diagram

Description automatically generated

All users who want to use the ETC lane has to register themselves and once they do, they will receive a small device that looks like a card. With this card user has permission to travel using the ETC lane. Once a person enters into the highway, they should pass through a tollgate, where the signal is sent to the card, this card picks up the vehicle’s number plate and remaining balance to check whether the person can have a guaranteed journey with the amount available.

All cards should have up to 300 rupees minimum to pass through the ETC lane, once the vehicle goes through and user reaches the exit, they have to pass through another tollgate where the tollgate will extract the signal and check the vehicle category and vehicle identification. Then do the calculation and show the price deducted, remaining balance and number plate of the vehicle to the user in an LED screen located near the tollgate.