

Electronic Toll Collection based on Automatic Vehicle Classification

Challenge

Apart from cash payments, frequent users of toll bridges can use electronic toll collection (ETC) system at the plaza. This allows the users prepay the tolls and eliminating delays at the toll plaza. It is fast and efficient. Automating the solution reduces the operator error and tampering and allows different tolls to be collected automatically for different types of vehicles. Also, eliminates the need for cash or credit card payment. Also, the system maintains the usage and account balance.

Solution

The following are the key components of ETC using Automatic Vehicle Classification (AVC)

- A toll tag, which is placed inside the vehicle or carried by an individual vehicle operator
- A secure toll tag reader placed at the toll booth, which reads the toll tag and collects the toll
- Real time billing system
- Enforcement system which comprises of sophisticated software and surveillance cameras to identify toll evaders

Benefits

- Unlike no-stop automatic electronic toll collection solutions, the user is billed based on the results automatic vehicle classification
- Decreases transaction time and increased throughput
- Saves time on both sides of the counter; customer simply waves the tag in front of the reader
- Reduces cash management and costs by decreasing cash handling
- Toll tags can be designed in multiple form factors
- A single toll tag can be used to pay for multiple vehicle types
- Fraud resistant since toll is collected electronically based on AVC

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