

Centralized Toll Booth Payment system

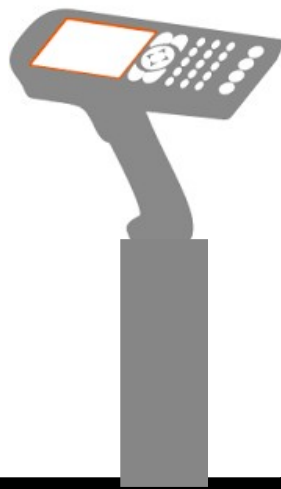
Problem to be solved:

- Slow mobility
- Scams and corruption

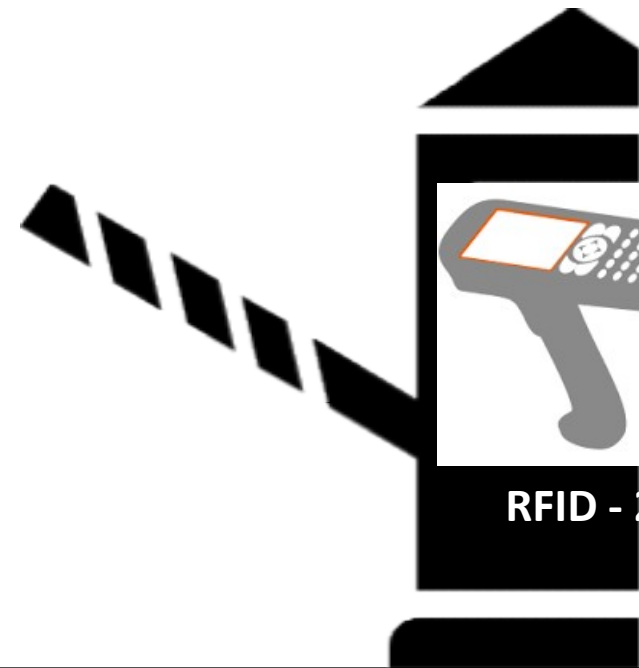
RFID

IOT based Centralized System

A vehicle with
RFID enabled number plate



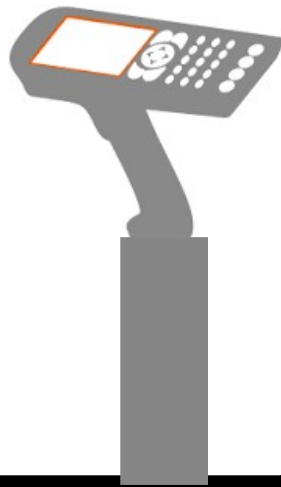
RFID - 1



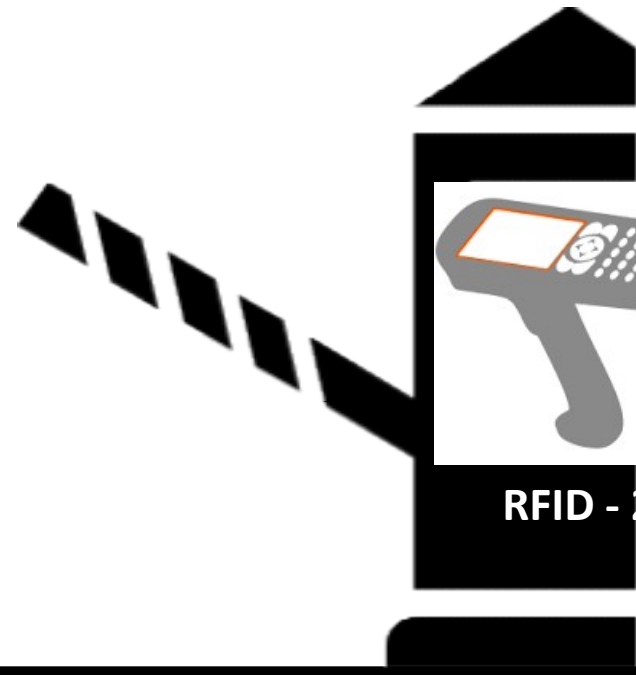
Tollbooth



1.5km



RFID - 1



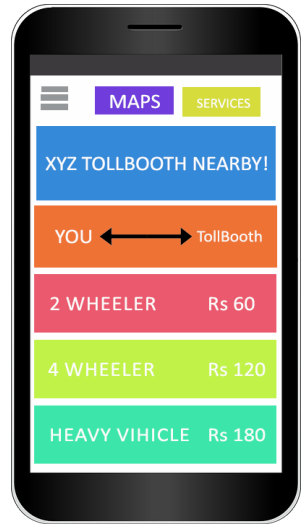
RFID - 2

Tollbooth



1.5km

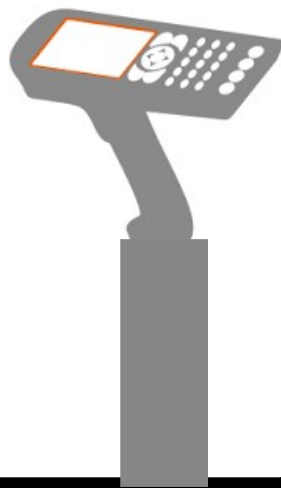
NOTIFICATION



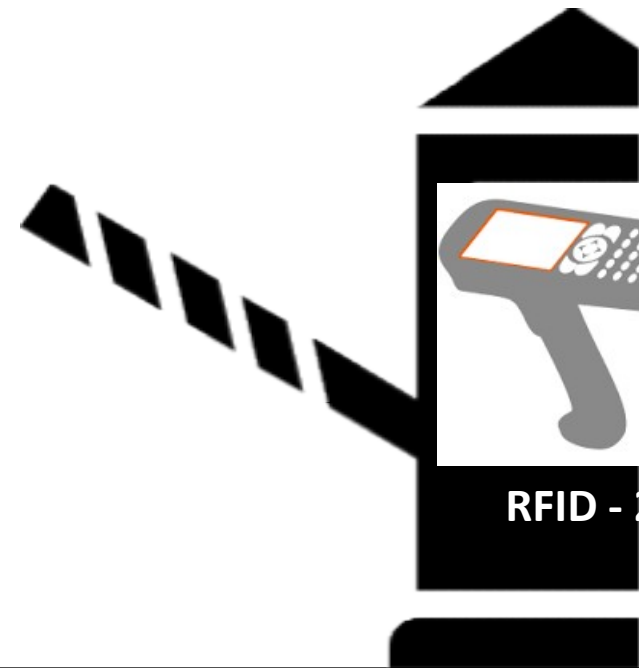
For APP users



For non-APP users



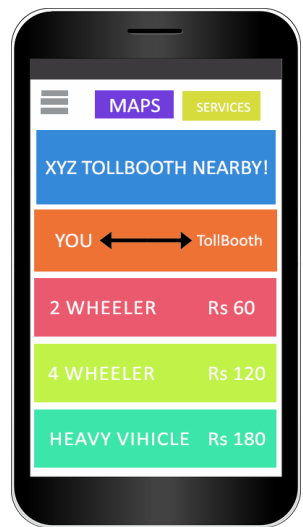
RFID - 1



RFID - 2

Tollbooth

NOTIFICATION



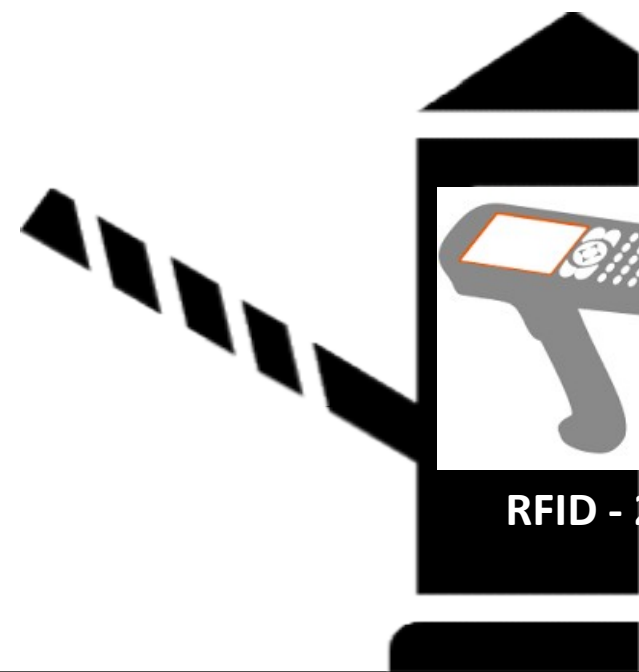
For APP users



For non-APP users

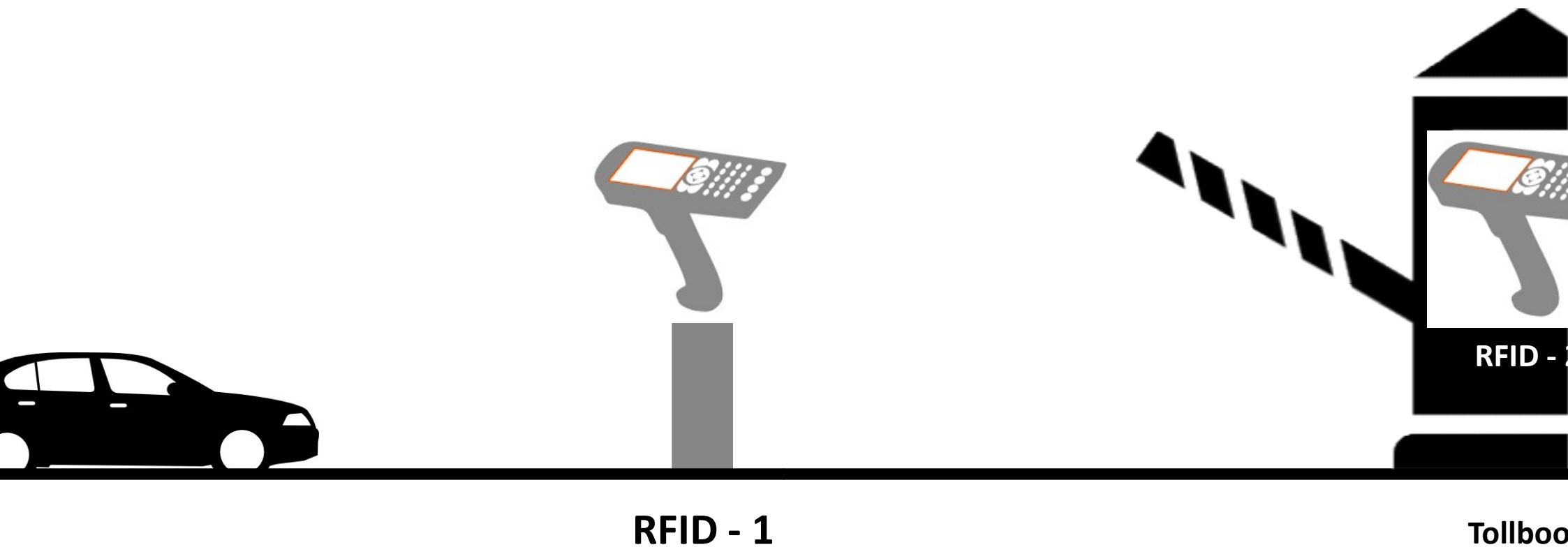


RFID - 1



Tollbooth

NOTIFICATION using Geofencing





scanned

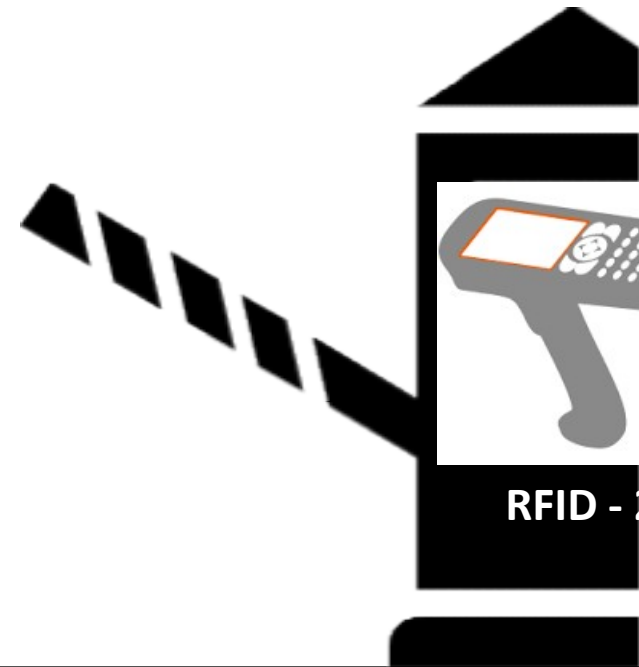


Vehicle Type Detected

**Sent to server
Balanced checked**



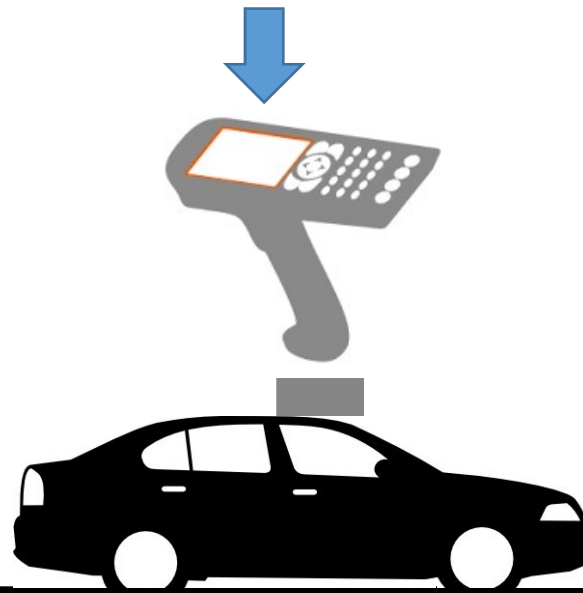
RFID - 1



RFID - 2

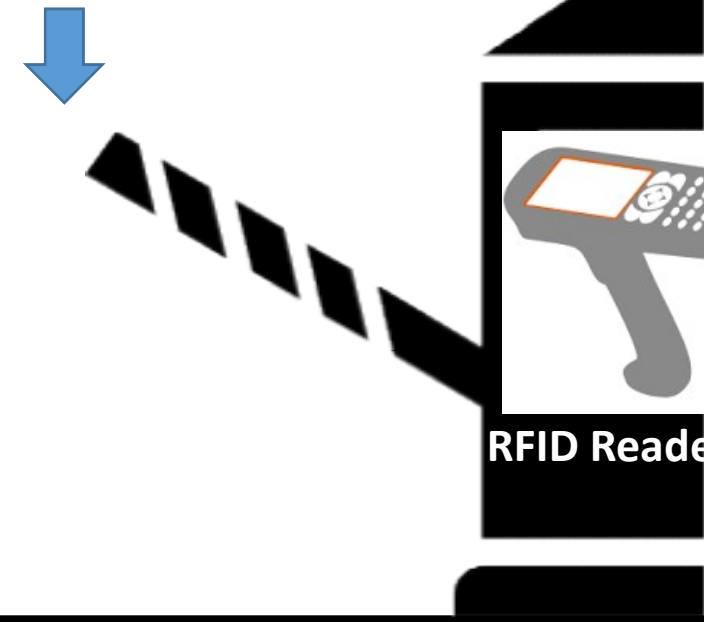
Tollbooth

RFID Scanning and PROCESSING



RFID Reader - 1

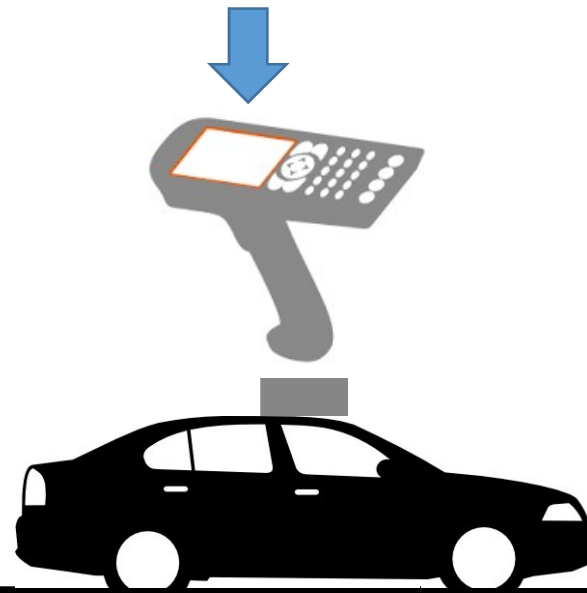
Money Deduction while reaching to barrier



Tollbooth

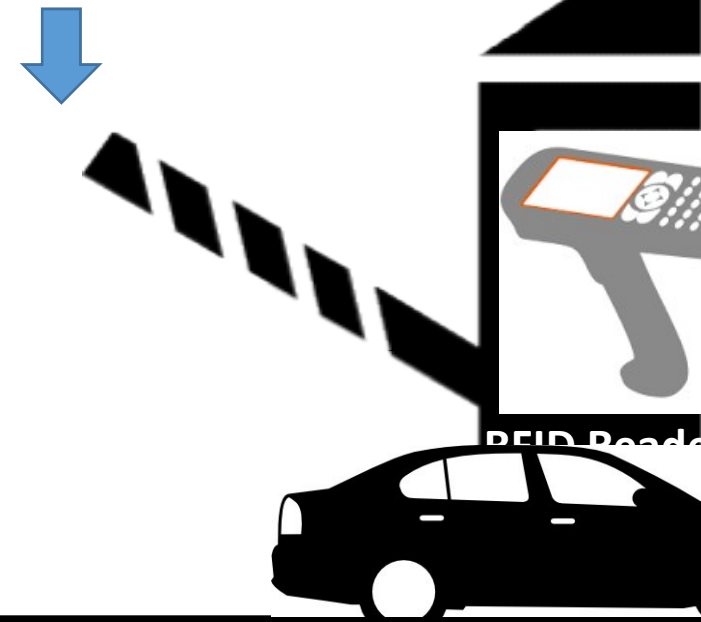
Concurrency = Saving time

**RFID Scanning
and
PROCESSING**



RFID Reader - 1

**Money
Deduction**
while reaching to barrier



Tollbooth

Payment confirmation from server

RFID scanned and Gate opens
for vehicle 1



RFID Reader - 1



Tollbooth

Theft Detection



Owner of vehicle notified **ALWAYS**

Cost efficient vehicle detection

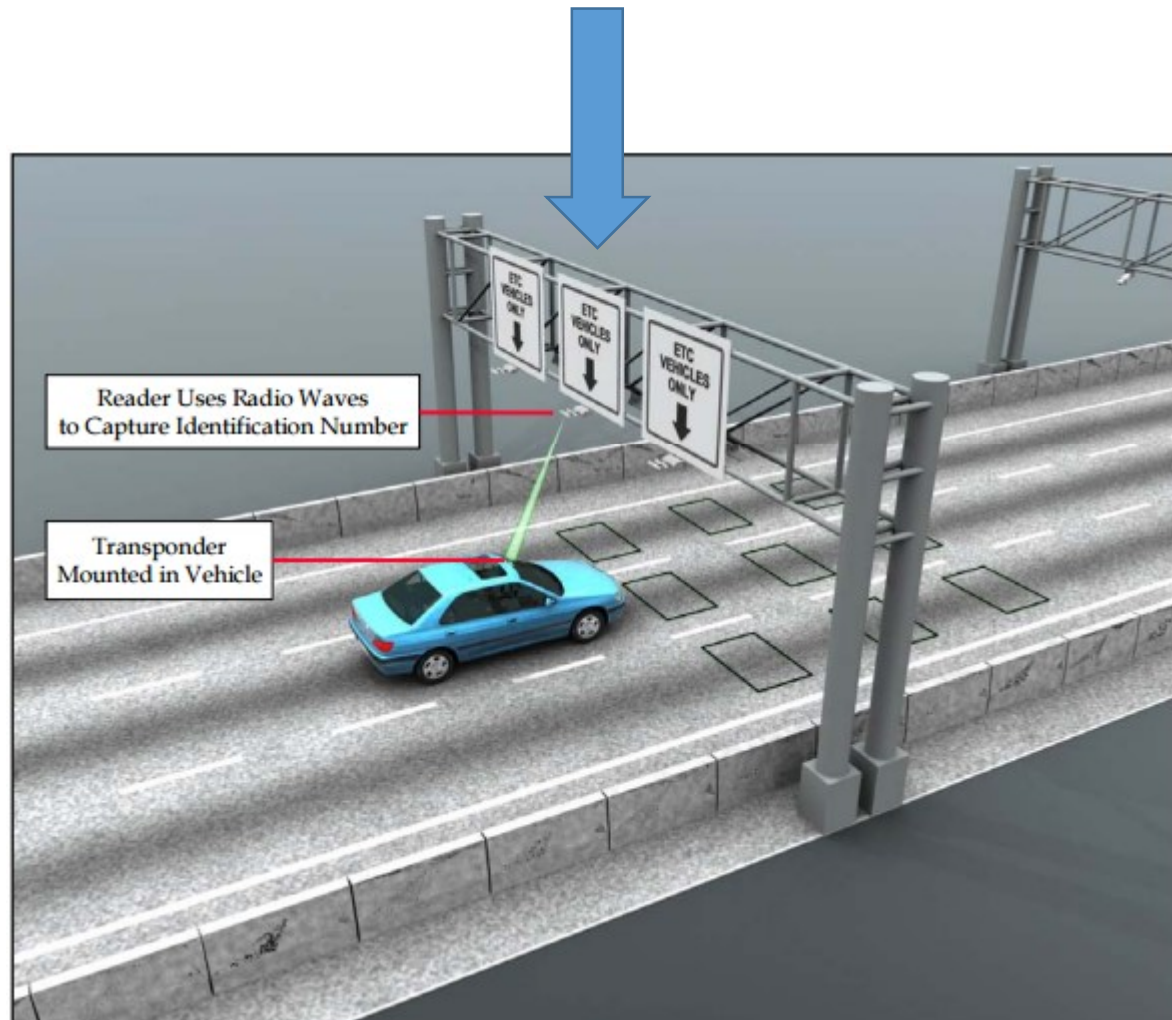
+

Encrypted RFIDs

No tampering with our RFIDs!




Location of RFID reader



RTO Account

Categories of user



People **with**
Data connectivity

People **without**
Data connectivity

- Recharge : Through App **SAFAR PAY**

- Low balance notification :
Through App **SAFAR PAY**

- Recharge : Through billing system
From offline center like post office

- Low balance notification :
Texts on account holders no

SAFAR PAY :

An app developed by us (in context to the Road Transportation) as add-on to the existing cashless payment system like **BHIM**

RTO Account

Advantages

- Cashless transaction
- Refund possible due to preprocessing
- Multiple payment gateways

Business Model

ONE TIME SET UP COST
for a sample set of 100 Toll Plazas

PROPOSED SYSTEM	COST(INR)
RFID (10M Range)	99,60,000
WIFI Module	50,000
Ultrasonic Sensor	1,20,000
DATABASE- Use existing VAHAN Db	-
SERVERS – Django, Python	Open Source Apache License
TOTAL	1,01,30,000

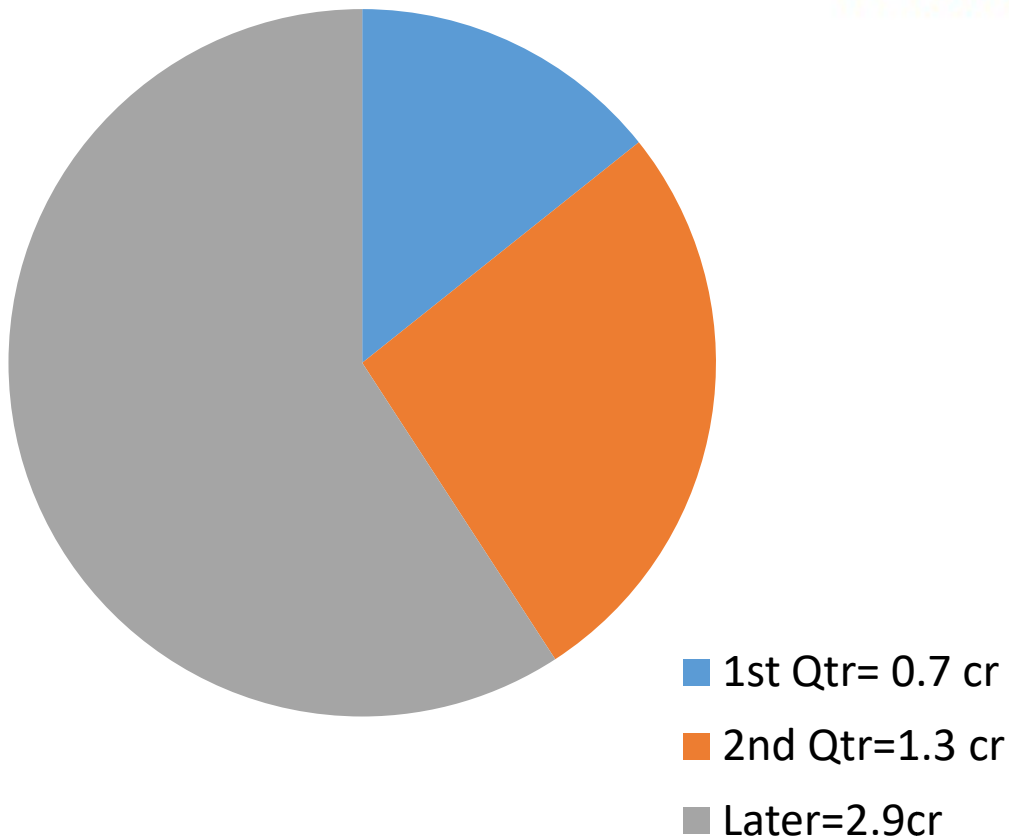
For a sample set of 100 Toll Plazas

1. Current Manual System – 3,00,00,000*

(*based on assumption that on average individual toll plazas having 4 gates each side.)

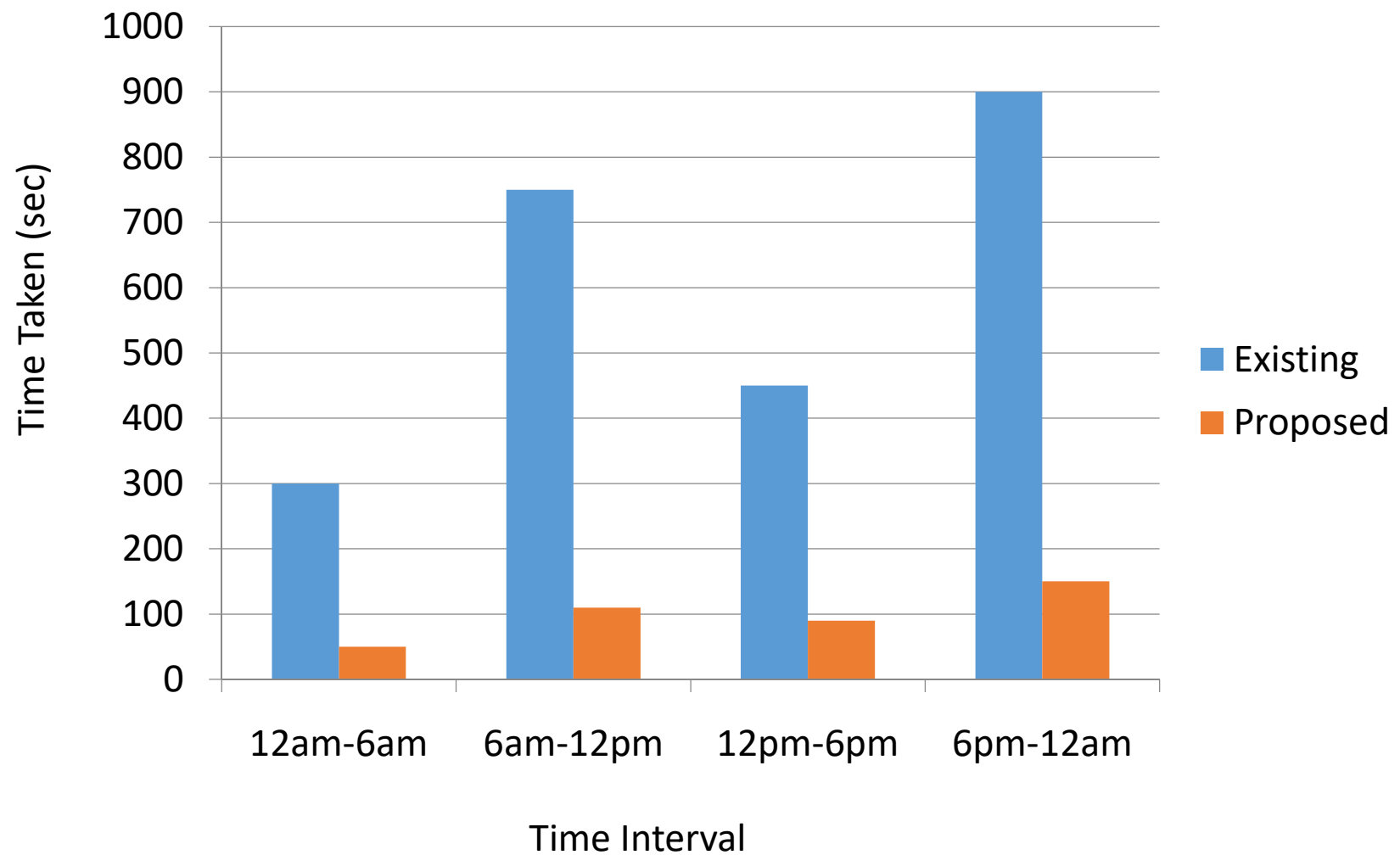
2. Upgraded System -

Savings/Profit per month



	First Quarter	Second Quarter	Later On
Manual Efforts	1,80,00,000	1,20,00,000	60,00,000
Maintenance cost	50,00,000	50,00,000	50,00,000
Total	2,30,00,000	1,70,00,000	1,10,00,000
Saving	70,00,000	1,30,00,000	2,90,00,000

STATISTICS



Revenue Streams

- PPP (Public Private Partnership)
- Getting Revenue directly from the toll booth without any third party interference after installation
- Fees for advertising a product , service or brand at the toll booth

Closest competition : FASTag Technology

- Radio-frequency Identification (RFID) technology
Automatic deduction of money

Product different from the existing solution ?

- Centralisation
- Theft Detection
- Keeping the user informed

Channels Required For Marketing

- Government Institutions
- RTO
- Housing Societies
- Toll Booths

PREREQUISITE	SOLUTIONS
All vehicles need to have RFID number plates	Using existing websites like VAHAN we can implement vehicle registration services
Centralized Vehicle Database	Collect data from RTO office of all registered vehicles.

Advantages

- Exemption of Special vehicles possible
- Collaboration with gov. agency and system like Vahan, RTO
- Admin configurability
- Environment friendly
- OpenSource Tech

Thank you!