Centralized Toll Booth Payment system

Problem to be solved:

- Slow mobility
- Scams and corruption

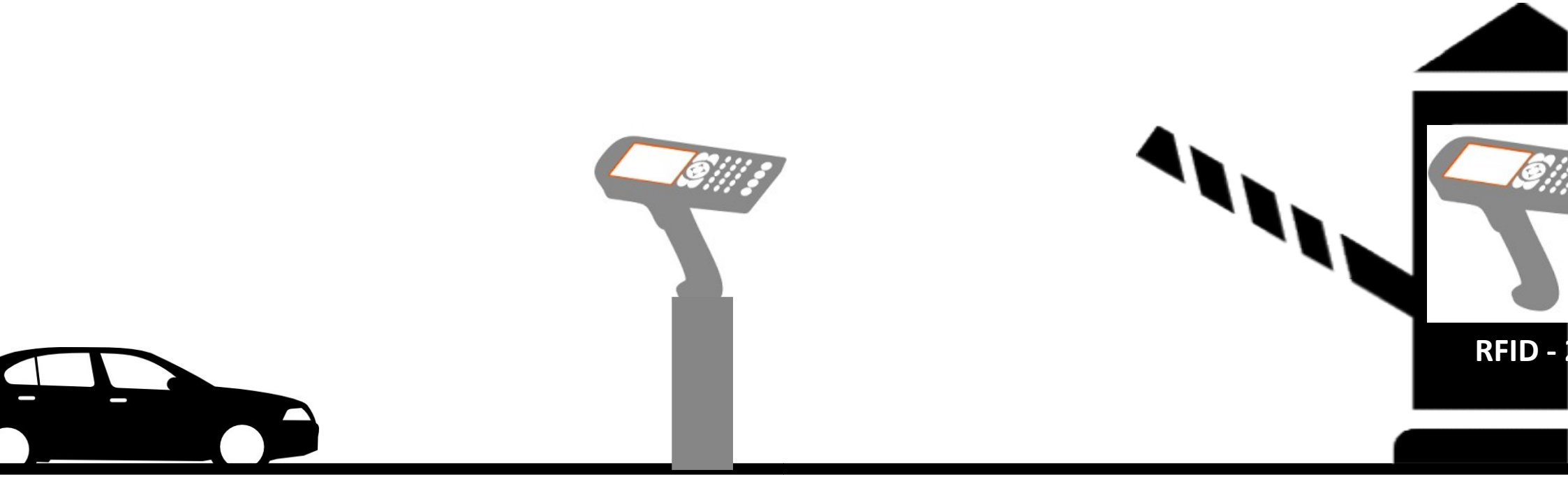
RFID

IOT based Centralized System

A vehicle with

RFID enabled number plate

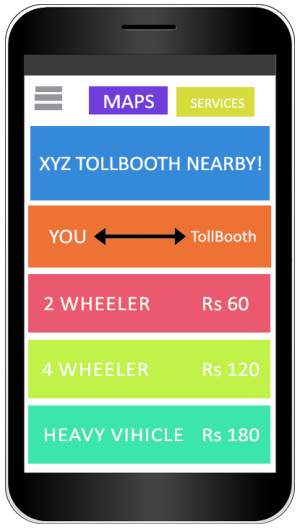
1.5km



RFID - 1

NOTIFICATION

1.5km



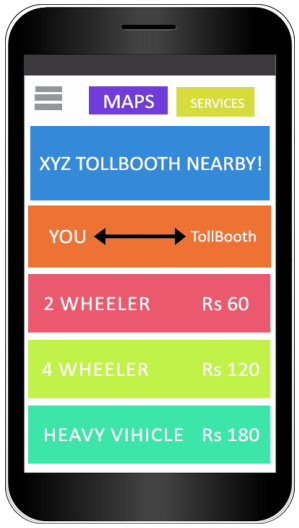
For APP users

For non-APP users

RFID - 1

Tollboo

NOTIFICATION



For APP users

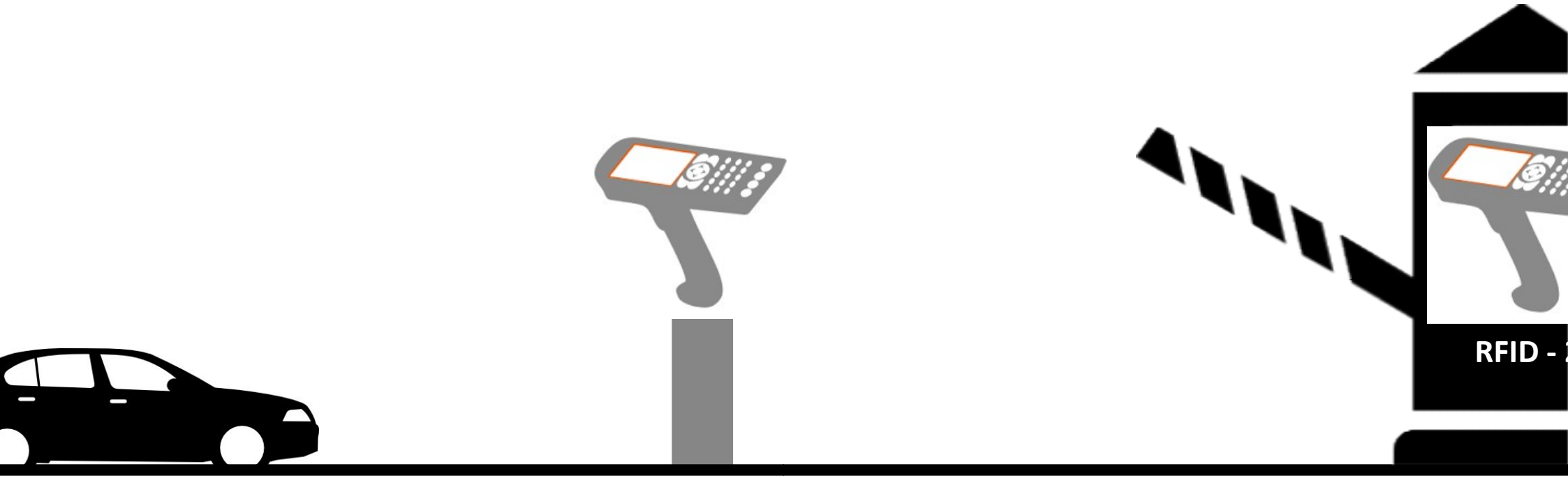
For non-APP users

RFID - 1

Tollboo

NOTIFICATION

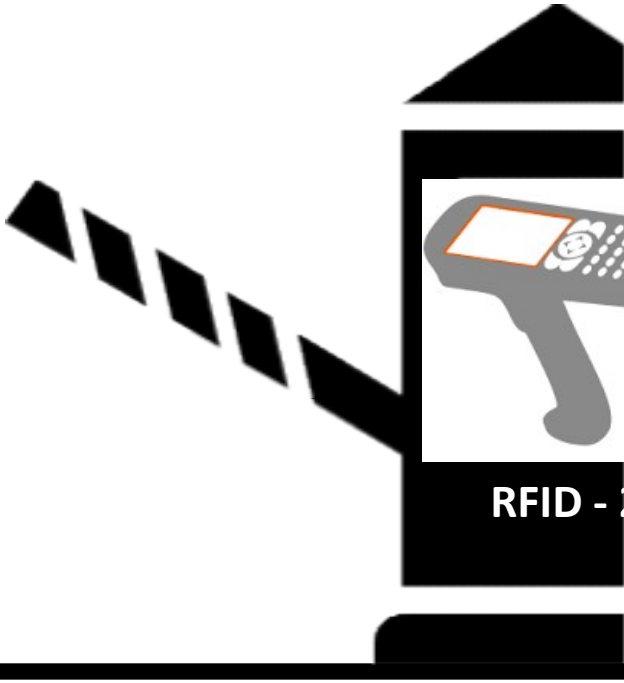
using Geofencing



scanned

Vehicle Type Detected

Sent to server
Balanced checked



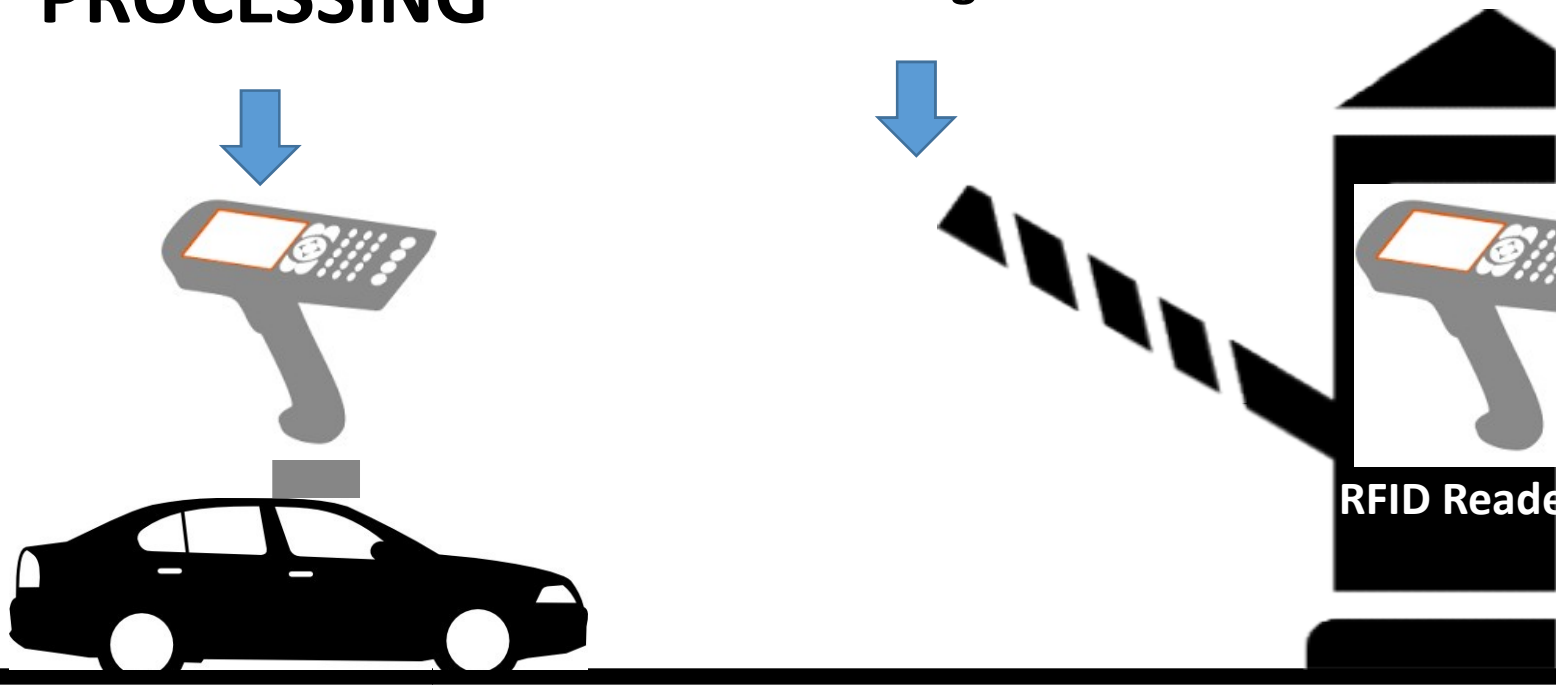
RFID - 1

Tollboo

RFID Scanning and PROCESSING

Money Deduction

while reaching to barrier



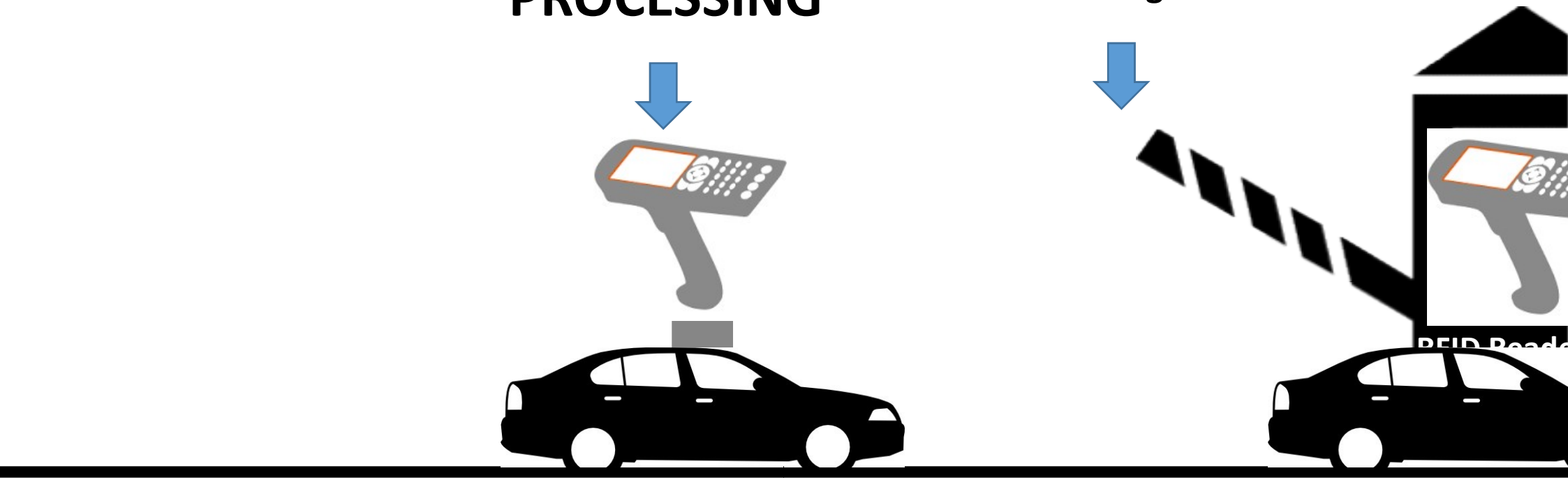
RFID Reader - 1

Tollboo

Concurrency = Saving time

RFID Scanning and PROCESSING

Money Deduction
while reaching to barrier

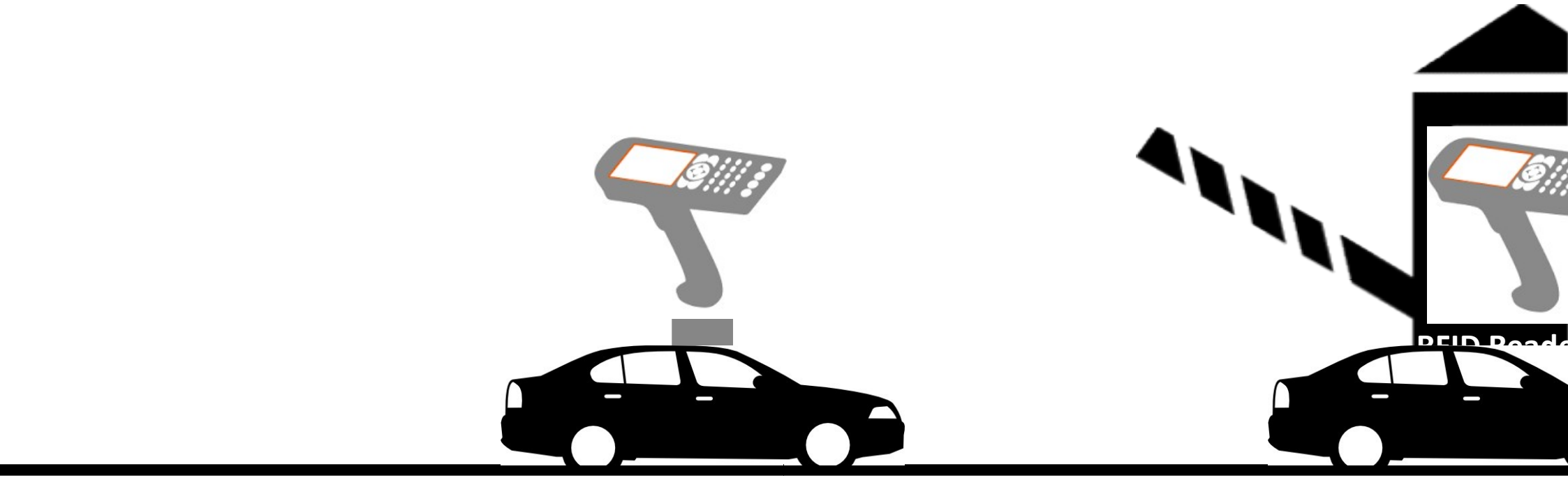


RFID Reader - 1

Tollboo

Payment confirmation from server

RFID scanned and Gate opens for vehicle 1



RFID Reader - 1

Tollboo

Theft Detection

Owner of vehicle notified ALWAYS

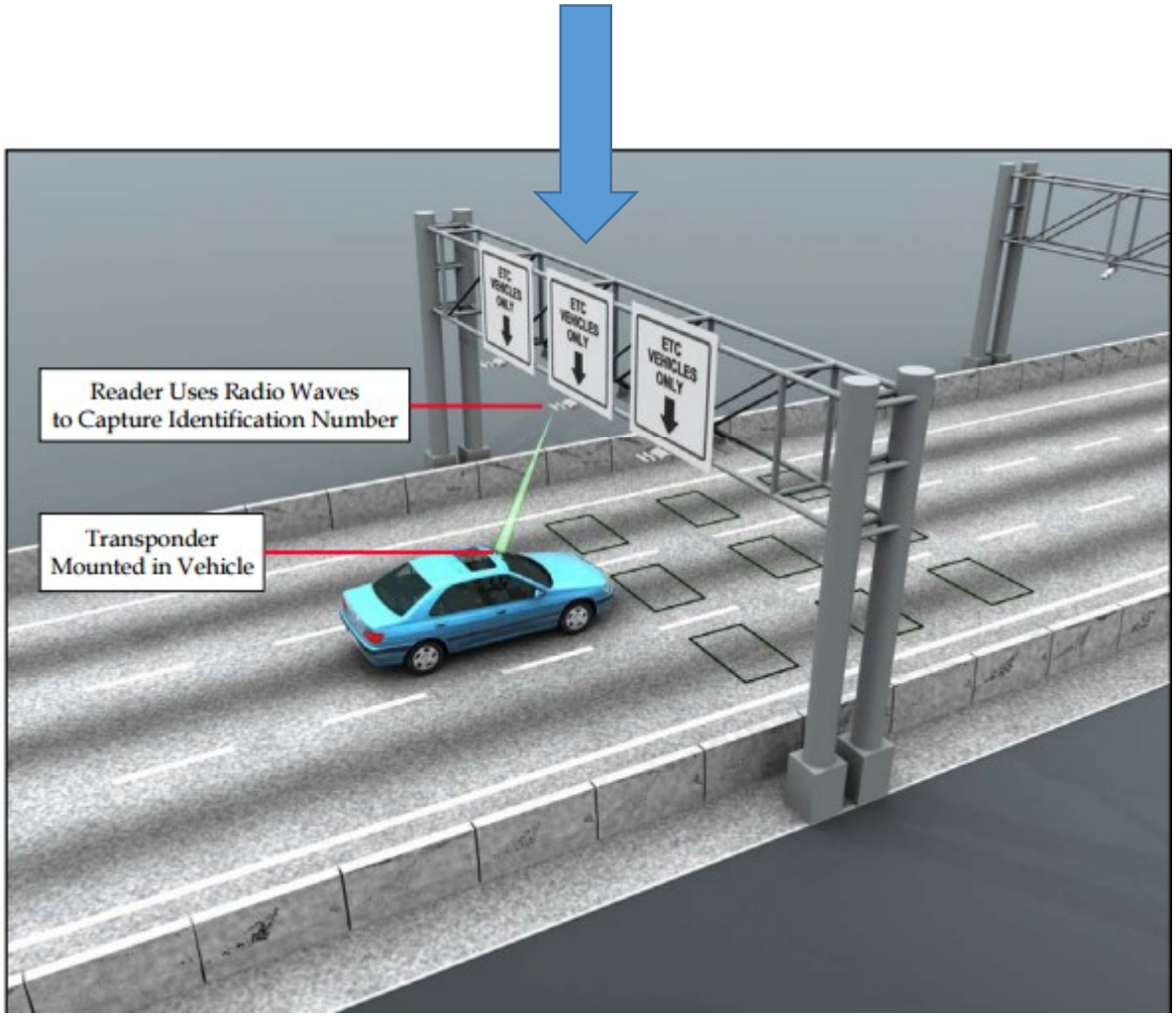
Cost efficient vehicle detection

+

Encrypted RFIDs

No tampering with our RFIDs!

Location of RFID reader



RTO Account

Categories of user

People **with**
Data connectivity

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

People **without**
Data connectivity

- Recharge : Through billing system
  From offline center like post off
- 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, Phython	Open Source Apache License
TOTAL	1,01,30,000

For a sample set of 100 Toll Plazas

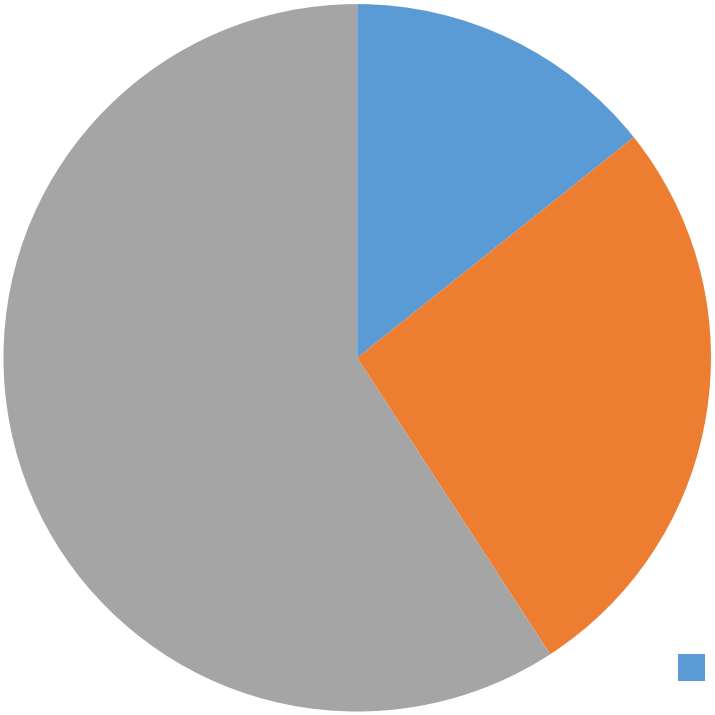
1. Current Manual System – 3,00,00,000*

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

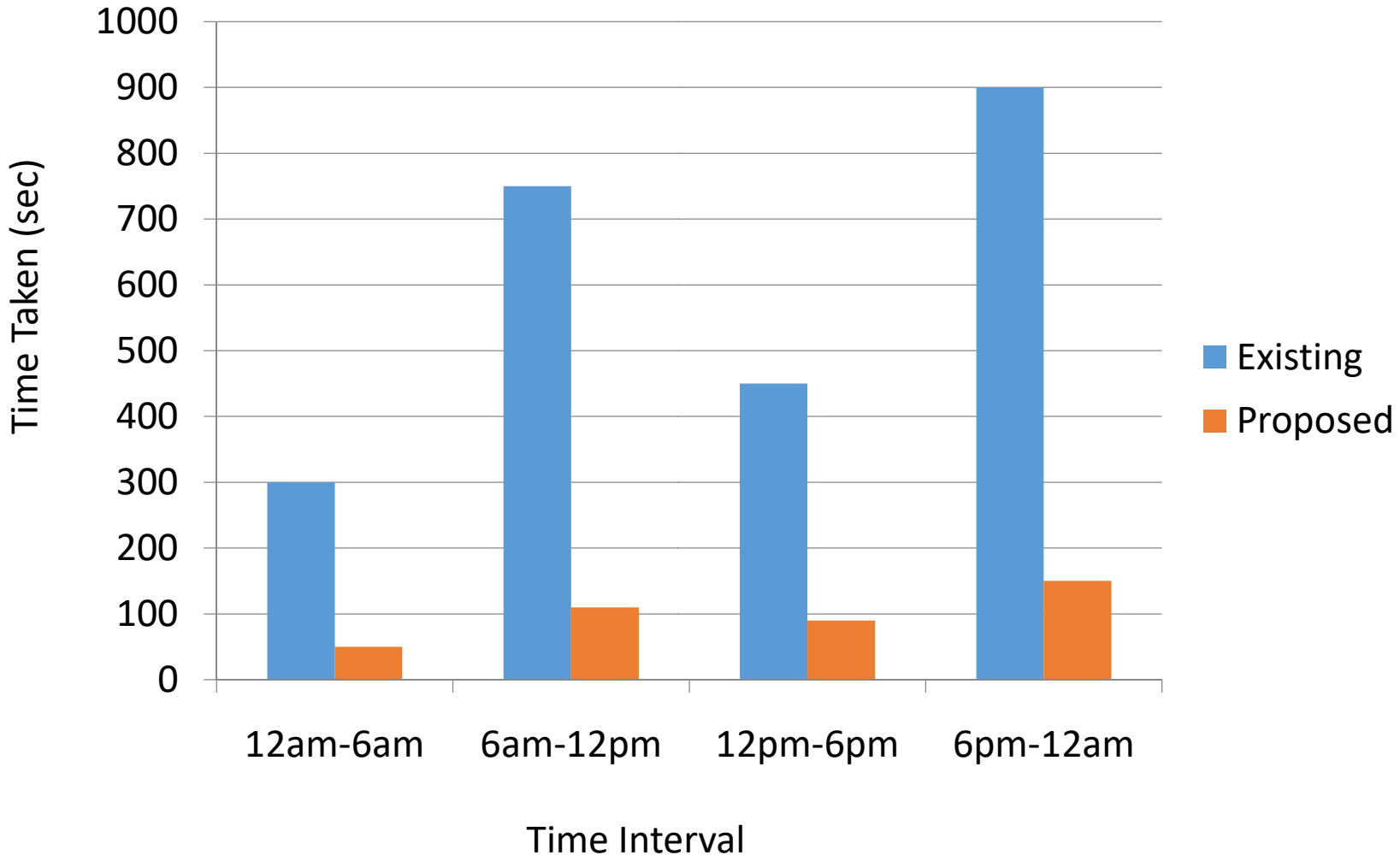
2. Upgraded System -

	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

Savings/Profit per month



STATISTICS


1000
900
800
700
600
500
400
300
200
100
0
Time Taken (sec)
12am-6am
6am-12pm
12pm-6pm
6pm-12am
Time Interval
Existing
Proposed

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!