

Parking Management System

What is Parking Management System?

The main objectives of the Parking Management Systems are to provide a quality parking service and facility to customers, facilitate quick entry and exit from the parking points and reduce dwell time, streamline the entire traffic movement around the Vehicle parking area and build MIS systems to support future planning and development.

Why Parking Management System is required ?

Most of the urban areas suffer from what is called parking traffic, which means traffic caused by motorists looking for parking space or moving their vehicles out of parking areas. For traffic planners, multi-story car park operators and other interested groups, development of a comprehensive parking management solution is real challenge.

To meet this challenge and manage the parking areas at minimum cost by utilizing the latest technological advances to develop an innovative parking system that is superior to conventional parking systems. It is easy to use and optimizing the available space.

Functional details:

Parking of vehicles in a convenient and protected area controlled by automated entry and exit gate.

Parking Management System shall ensure

- effective flow control and monitoring
- vehicle entry check into the facility,
- movement across parking floors,
- movement across zones

Parking Management System recognizes two types of users,

- Registered Users
- Visitors

Registered users are the ones who regularly use the facility for parking. Registered users are frequently seen and might have their own assigned parking area. Instances of registered users are owners of apartment, employees of an office in a corporate building, etc.

Registered users are so called because the PMS provides them with RFID-based permanent PMS cards.

Visitors are the users who are using the facility for one time use. Instances of visitors are, shoppers in a mall, friends of owners, visitors to offices, passengers at airports, etc.

Visitors are provided with temporary RFID-based cards.

Registered Users:

The PMS cards issued to registered users would contain information such as,

- Personal Identification
- Office/Group Identification
- Vehicle Identification Details
- Parking Amount
- etc

Use Case for Registered Users:

ENTRY

1. A boom or bollard barrier would be restricting the access to the parking lot.
2. Whenever a vehicle approaches the parking lot the registered user flashes the RFID card onto the reader erected near entry.
3. The reader reads the card and, if authenticated, the relay for moving the boom barrier is fired and access to the parking lot is enabled.
4. The registered user can now enter the parking lot and park his vehicle.

EXIT

While leaving the parking lot a similar process happens.

1. The parking exit is blocked by a access barrier
2. When the vehicle reaches the exit gates/barrier, the driver will flash the card on the RFID R/W unit.
3. The RFID R/W unit reads the cards and determines the number of hours spent in the parking lot.
4. Based on the number of hours, the RFID R/W unit updates the card with the balance amount.
5. Then the barrier opens for the vehicle to leave the parking lot.

Visitors/Temporary Users:

ENTRY

1. Visitor and Unregistered vehicles carrying VIPs would be issued with a temporary tag at splitters or by the security officer for entry into the parking area and the same tag would be recovered at the exit point.
2. At the parking lot the Visitor flashes the RFID card onto the reader erected near entry
3. The Visitor can now enter the parking lot and park his vehicle.

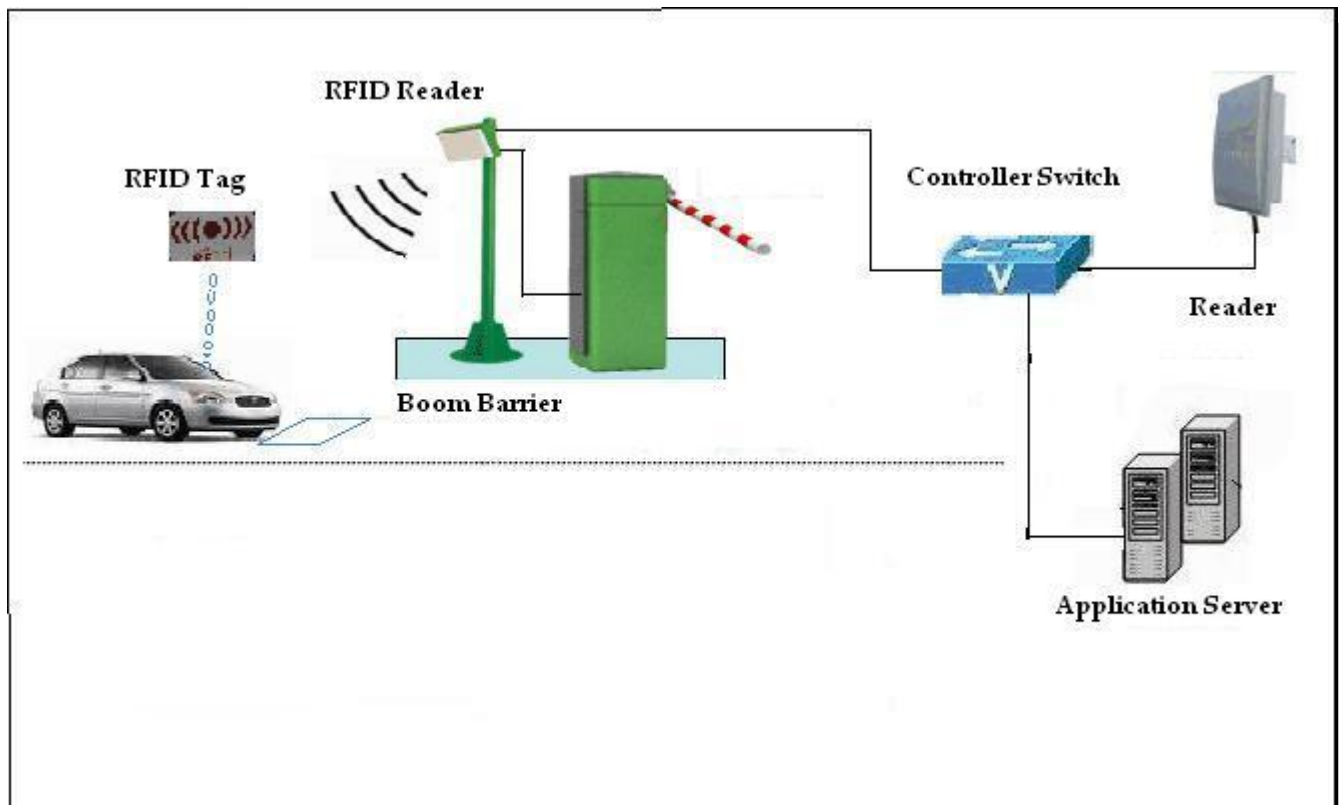
EXIT

While leaving the parking lot.

1. The parking exit is blocked by a access barrier.

2. When the vehicle reaches the exit gates/barrier, he needs to submit the above temporary tag to the officer at exit gate.
3. Officer will read the tag at exit point using reader and the amount will be charged from the user based on number of hours vehicle is parked at the parking area.
4. Once the payment is done, the barrier opens for the vehicle to leave the parking lot.

Parking Management System Architecture



Bill of Material

1. RFID Readers
2. RFID Tags
3. Parking Slip Spitter
4. Tripods
5. Boom Barrier (at the parking entry)
6. Application Server
7. LCD Display

Benefits of Parking Management System

- INFRONICS RFID gives operators the ability to enhance parking control management systems by using RFID.

- The use of RFID tags, readers and antennas makes it easier to automate the 'in and out' privileges of parking subscribers.
- Security, critical in today's world can be improved.
- The automation of in and out and payment eliminates the need for additional staffing as the facility grows.
- Automated entry and exit, automated payment and shorter queues equate to satisfied customers.
- Above all, these benefits will drive higher revenues.
- Reduction in travel time, fuel consumed and emissions while searching for available parking space.
- Better use of parking capacity due to real-time counting and guidance.
- Efficient circulation due to guidance of vehicles directly to vacant floor or area.
- Higher revenues for the parking facilities.
- Higher customer satisfaction