

## Intelligent Parking Lot Management System

Easy Park (ePARK) is an Intelligent Parking Lot Management System that helps travelers find parking spots quickly, thereby reducing frustration and enhancing their overall experience. ePARK include elements ranging from traditional traveller information systems to quick and automated gate control systems, individual bay monitoring electronics, advanced parking management applications, pre-trip web-based information systems, VMS display boards, driver guidance and navigation systems that provide directions all the way to an individual parking space. ePARK has been developed under "Intelligent Transportation System Endeavour (InTranSe) for Indian IndianCities" which is a National level Collaborative Research and Development Program funded by the Department of Electronics and Information Technology (DeitY), Ministry of Communications and Information Technology, Government of India.

### SALIENT FEATURES

- Real time parking information
- Quick Identification of parking spots
- Enhanced capacity utilization
- Modular design and architecture
- Suitable for Multilevel parking
- Driver Guidance and Navigation Aids
- Reports and revenue management

### ENTRY GATE SYSTEM

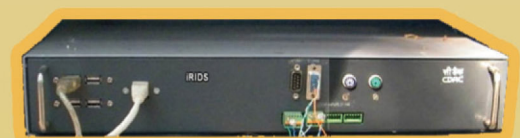
- Manned and unmanned operation
- Entry based on parking availability
- Driver and vehicle registration number image capture
- Bar code based entry token
- Automated boom barrier control
- Web based application

### EXIT GATE SYSTEM

- Entry token scanned
- Entry exit details displayed
- Live streaming of vehicle registration number
- Generate receipt & print bill
- Web based application



Site implementation



Entry and Exit Gate Controller



## BAY SENSOR

- Real time bay status updation
- Trigger bay indicator lamp
- Ultrasonic sensor
- 16 bit microcontroller
- Configuration stored in Flash memory
- RS485 communication
- LED status indicator
- 12V DC



Bay sensor



Bay Lamp

## DATA CONCENTRATOR

- Update bay status to server
- 16 bit microcontroller
- Configuration stored in Flash memory
- Supports maximum of 128 bay sensors
- RS485 interfaces – Primary, failover and server channel
- Channel status indicator
- 12V DC



Data Concentrator

## DRIVER GUIDANCE & NAVIGATION AIDS

- Real time parking availability
  - Internet
  - VMS assisted visual guidance
    - Strategic locations
    - Entry gate
    - Levels
- Bay indication lamps
- Sign boards



Entry Gate VMS



VMS level display

## SOFTWARE FEATURES

- Web Based Configurator
- Web based real time information
  - Pretrip parking
  - Online reservation
  - Bay status and level vacancy count through HMI
- Reports
  - Entry/exit vehicle information
  - Real time vacancy report
  - Daily & monthly revenue collection
  - Parking load and efficiency at different time of day