PARKING GUIDANCE SYSTEM

THE NEED:
With the development of modern life, the amount of cars is growing rapidly and the difference between cars and parking spaces becomes a problem in the crowded urban areas. The public parking space cannot satisfy the increasing demand. So, how can you make full use of the existing parking facilities to meet the parking demand? These facilities have the following problems:

1. The parking’s management is unable to control the free parking spaces. Therefore, they are obliged to send employee(s) for inspection and this may cause waste of customers' patience & time.
2. The driver will not easily find an empty space and has to circulate in disorder which creates a traffic jam.
3. Management may hire some employees to help cars find an empty space which increases cost.
4. Management is unable to generate statistics to optimize revenues.

THE BENEFITS:
Here comes the parking guidance system to resolve these problems:

5. Saves time and energy to both the client and the management.
6. It leads the driver/customer directly and quickly to the first available space.
7. Reduced congestion in the parking facilities
8. Reduced pollution as cars circulate for shorter time
9. Potentially stress full situation are minimized
10. Helps to plan for rush hours
11. Decreases the management cost

The Intelligent Parking Guidance System provides a significant advantage to garage operations, particularly when parking is at a peak. Management is also able to see the peak operation hours and could schedule staff accordingly. The system provides real-time capacity management that allows for better auditing capabilities. The average utilization and occupation of the bays increases significantly because drivers are directed to an open space more efficiently: as soon as a bay becomes available, it will display on electronic signs. Drivers are also able to find spaces that are hidden by obstruction and generally not utilized.

THE SYSTEM:
With LED information panels to provide driving direction guidance starting at the entrance, including a lamp indicator on top of every parking space for a clear visual of overall vacancy status visible from a distance, Parking Guidance System helps guiding drivers to find a free space with no extra turning or driving around!

The detector lamp installed on top of every parking space has an ultrasonic sensor and a LED lamp indicator combined in one device unit. It continuously checks the vacant status of a parking space and provides the information to a zone controller, and controls its LED lamp indicator. The LED lamp indicator has two colors standard red/green (as red indicates “occupied” and green indicates “vacant”) or optional red/blue (as blue indicates “reserved/handicap”).

A zone controller is allowed to connect and collect data from many ultrasonic detectors. Required LED information panels are configured to display information according to the zone controller connected. And a central control unit can connect predetermined controllers and process all the data gathered from all zone controllers.
to the parking guidance software running on the server.

An optional floor space counting system can be easily integrated and installed. Simply connect a loop detector controller to the central control unit, the central control unit will control the LED floor counting displays according to the signals from the loop detectors. A loop detector controller has predetermined signal contact points.

The parking guidance software provides a full graphic interface for managing the system and monitoring the entire parking facility remotely.

**FEATURES**
- Detector and lamp are combined into one unit
- Bi-colored vacancy lamps with 360° emitting angle provides the best visibility.
- Adjustable detection distance from 0.5~4M of vacancy detectors
- Full graphic interface for a real time monitoring and remote management.
- Guiding system can be operated standalone without management server.

**RS485 System Structure**

1. **RS 485 communication:**

RS485 use shielded twisted pair to connect node controllers in the carpark together in the terms of “hand in hand” and finally output to central controller. RS485 has good quality of anti-noise, long transmission distance and multi-station capabilities. The biggest advantage is the low costs of wire material and the disadvantage is that the communication speed is slower than that of LAN and wireless transmission.
2. LAN communication:
LAN use network cables to connect many node controllers in the yard separately to network switches for parallel communication with very high rate and the transmission speed is higher than RS485 communication.

3. Wireless communication:
Wireless communication uses the wireless receiver installed in every storey of the carpark to receive the communication signals that the node controllers in the same storey has sent then transmits them to the central controller through network switches. The advantage is greatly reducing the system wiring and the construction volume.
Customized PGS System

You can customize your own PGS according to your CarPark.

**BASIC:** UD&LED indicator

**CLASSIC:** UD&LED indicator / CCU&ZCU / LED Guide display

**ADVANCED:** UD&LED indicator / CCU&ZCU / LED Guide display / KIS software

In BASIC level, you have to identify the Empty/Full via Green/Red indicator with the naked eye. In CLASSIC level, you could also get help from the LED guide signs. In ADVANCED level, beside the CLASSIC level’s advantage, you could monitor your CarPark in PC and get your operation data.

**Outdoor Parking Guidance System**

Outdoor Parking System can provide open carparks with cost-effective wireless solution which includes data collecting, conversion and processing as well as release of real time parking information through dynamic guidance board.

Detects Vehicles by analysing the change of geomagnetic field; information detected by detector (presence, flow, speed, etc..) will be transmitted wireless to the receivers installed at roadside.
SYSTEM HARDWARE COMPONENTS

**Ultrasonic Detector**
Installed right above every parking space, collects the real-time parking space information, through the principle of ultrasonic, measuring the distance, then transmits feedback of collected information to led and node controllers through RS-485.

**Led Indicator**
Installed at the front of every parking space to display the current parking space status. When the indicator displays green, it means there is an available parking space; when the indicator displays red, it signals that there is a car parked.

**Ultrasonic detector Combined**
The ultrasonic detector lamp combines ultrasonic sensors and LED lamp indicators into one device. Each parking space requires one ultrasonic detector lamp installed on top center of the parking space. The LED lamp indicator has two colors standard red/green as red indicates “occupied” and green indicates “vacant” or optional red/blue as blue indicates “reserved/handicap”.

**Zone Controller (ZCU)**
One Zone controller can connect to predetermined (40 to 60) ultrasonic detectors. It gathers and forwards vacancy information from all the detectors to the Central Control Unit, and also forwards commands from the Central Control Unit to the LED information panels connected to it for displaying proper vacant information.

**Central Controller (CCU) general edition**
The core of whole system, is mainly responsible for the collection of carport information and data processing of the whole yard, then send feedback of the processing data to LED display to show space information. The general edition does not have the data storage function. You need to connect it to the server and install the parking guidance system software.

**Central Controller (CCU) premium edition**
The premium edition central controller (CCU) is installed with the parking guidance system and can directly save the data of the carpark and allows you to inquire download through WEB.

**Indoor Led Display**
The indoor led display receives the carport information from the central controller (CCU) and displays the total number of available lots in terms of number and word. It can be used 24 hours a day. Internal procedure can be revised at any time according to the demands of the users, displaying other needed information.
The most complete solution. It can have up to 16 channels, either loops or ultrasonic counting sensors. Its advantage is that it gives information to the server when the parking is full even though not all cars are yet parked. Reducing the jam and eliminating the probability of having circulating cars that will eventually not find a free space.

**Outdoor Led Display**

Outdoor Led Display is composed of high intensity outdoor Led module, driving circuit, controlling circuit, frame and other parts. It receives the parking space statistics from the central collector, displaying the total available parking spaces in real time and can be used 24 hours a day. Internal procedure can be revised at any time according to the users demands, displaying other information.

**Variable Message Sign (VMS)**

The VMS is used in the parking guidance system as a message display and to indicate the number of available parking bays. The VMS receives display information from the communications bus. Using this information the VMS displays the information on an LED display. The VMS is capable of determining the ambient light intensity and adjusting the display’s intensity accordingly. The VMS is designed for indoors as well as outdoors.

**Intersection Guidance Display (IGD)**

The Intersection Guidance Display is used in the parking guidance system to indicate the availability of parking spaces within a certain lane or lanes associated with the display. The display is composed of a set of three arrows of green light emitting diodes (LEDs) –LEFT, STRAIGHT and RIGHT - and a single cross of red light emitting diodes (LEDs). The arrows are used to indicate the direction in which there are available spaces by illuminating one of the arrows or any combination thereof. The cross is used to indicate that all bays in the associated area are full.

**Parking Guidance System Management Software**

An Electronic map of the parking space is embedded in the software, which can directly display the status of carpark in real time. The operators can monitor the situation according to the electronic map. As for the improperly parked vehicles, the system supports manual updating spaces to adjust the real status of the occupied parking space.

**IdentIPark Vehicle Counter (IVC)**

In order to establish vehicle counts in the Facility, on a level or in a Zone, the IVC offers...