



Your New Dynamic Parking
Guidance System

LEADER PARK® is a user-friendly, next-generation parking guidance and dynamic information system:

- For the users: reliable & intuitive real-time guidance to vacant parking spaces and useful variable messages.
- For the operators: real-time vision, attendance, time spent on site, statistics, optimized parking lot management – creation of additional parking spaces!

LEADER PARK® reduces traffic, noises, wear & pollution; and increases parking spaces rotation.

- The users save time and are fully satisfied with their visit!
- The use of all spaces is optimal!

LEADER PARK® integrates a **completely user-friendly system with variable messages displays for users!** E.g. Logos, prices, opening hours, discounts, welcome messages, events, etc...

MONITORING & MANAGEMENT WEB APPLICATION

The new LEADER PARK® supervision offers a wide range of innovative functions for operators:



- Real-time view of each car park level, with all parking spaces & dynamic displays implemented across the car park.
- Parking occupancy data & analysis by periods, zones or levels, type of places.
- Customisable metrics set up such as average length of stay, overstaying car.
- Statistics data export on standard formats csv, xls, ...
- Data visualisation through dashboards and graphs.
- Parking equipment management, parking spaces pre-booking
- Dynamic displays programming, in real-time or via calendar: counting numbers, pictograms, arrows, variable messages, scrolls, display colors, etc...
- Eco-sleep mode set up according to days & times schedules (signals turned off).
- Multiple user accounts creation with different level access to the system.
- Secure system on Linux with 4 different databases for maximum reliability.
- Global config backup allows for “plug & play” maintenance.
- Multi-Parking central management.
- Local and/or remote “Web Service” monitoring and management solution.
- API REST open interface for links to third systems.
- The LEADER PARK® supervision is constantly evolving to meet the users’ and operators’ new needs.

CENTRAL MANAGEMENT HUB



All LEADER PARK® equipment is centralized in a management cabinet, only the sensors and dynamic displays are visible to users. The car park layout is clear and the maintenance is simple & economic!

The “Central Server” can **manage over 8,000 sensors and their dynamic displays**. Each “Controller” can pilot up to 250 sensors and 12 dynamic displays.

The LEADER PARK® central server transfers the commands from the “monitoring and management web app” to the equipment in the car park (sensors & displays). It also integrates all maintenance, programming, and security functions of the system.

INDOOR & OUTDOOR DETECTION

Whatever the environment, LEADER PARK® provides accurate, **real-time parking space detection** through purpose-built **sensors and camera technology** adapted to every type of facility. **From covered car parks to open-air lots**, our detection technology delivers reliable occupancy data in all conditions — day or night, rain or shine.

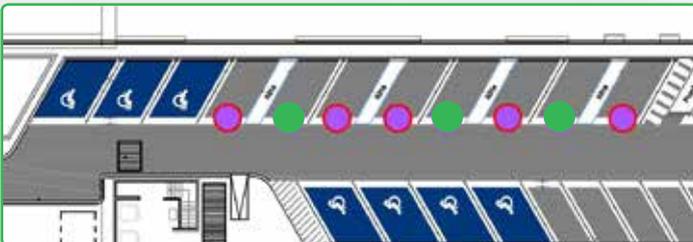
Indoor

Our **ultrasonic sensors** mounted above each parking space detect occupancy with up to 99.7% accuracy. Integrated full-color LEDs, visible 360° from up to 100 meters, guide drivers toward available spaces. Colors are programmable by zone, user group, or space type, making it straightforward to manage even complex layouts.



Outdoor

A **cameras based system** combined with our **AI-powered server-side image analysis** monitor open-air lots in real time. Dynamic signage at entrances and key decision points displays live availability, helping reduce congestion and unnecessary recirculation.



Both solutions are built for long-term reliability and can be integrated with third-party systems such as reservation platforms, payment systems, and urban wayfinding networks.

DYNAMIC GUIDANCE

The LEADER PARK® **full-color LEDs dynamic displays** can show a wide range of information to users.

The LEADER PARK® dynamic displays are conveniently placed at each spot where **users need to receive useful information** such as vacant parking spaces location or variable messages.

The LEADER PARK® “Positive Communication”:

The new **Smart System** will only guide car drivers to vacant spaces (the occupied parking spaces do not bring any value to the users).

Dynamic alternating counting & arrows to the different types of vacant parking spaces, with their pictogram in the same color of the LEDs signals in the car park (Generic, Disabled, Family, Electric, Subscriber, VIP, Reserved, ...).



Dynamic variables messages, operator’s or occupants’ logos, welcome messages, opening hours, prices, promotions, special events, etc.

Large selection of pre-programmed texts, free entry texts, colors choices, multilingual displays, scrolling, flashing or fixed arrows, etc.

Available in **multiple heights & widths, and various configurations** adapted to the information to display & to the vision distances.



All our displays can be supplied integrated into **customized signage cabinets and dynamic information totems**.

Ultrasonic Sensor

Presentation

- The **new LEADER PARK® ultrasonic sensor** is the key of **the most innovative Dynamic Parking Guidance System for parking garages!**
- The LEADER PARK® sensor with angular detection & integrated LEDs signal offers an **attractive design with a perfect vision 360° wide up to 100 m distance.**
- It is equipped with **5 “full color” ultra-high brightness next-generation LEDs** (11.400 mCd / sensor!). It is **among the most visible Parking Guidance Systems.**
- Its design and high-tech technology is the result of an intensive R&D to fulfill the requirements of operators, architects, shopping malls, users, & installers in terms of aesthetics, visibility, long term reliability, and time & energy savings.



Reliability & quadruple-angular ultrasonic detection

- The LEADER PARK® sensors with **quadruple ultrasonic signal detection** are fixed at the **“front” of the car spaces, along the traffic alleys, at a height up to 2,70m.**
- This conception **“all in one”** allows the widest range of positions for an **aesthetic & perfectly aligned installation, simple & economic, with reduced installation times.**
- The electronic control of the next-generation ultrasonic detection is **finely filtered to eliminate the “noises” and “false detections”**, to grant a stable & up to **99,70%** reliable detection, for all kinds of vehicles.

Features for the operation

- **Innovative & attractive design** with matching accessories for simple & practical installations.
- **“FULL COLOR” LEDs signal highly-visible 360° wide, up to 100 m.**
- **Customizable** colors “scenes” & synchronized flashing of the LEDs:
- **Spontaneous identification** of the “specific” parking spaces: Disabled, electric, family, VIP, car share, reserved...
- The light signal color **changes** according to the car space occupation:

Examples :

Pure Green
“Generic”

Purple
“Special”
Electric

Blue
“Disabled
persons”

Orange
“Special”
Family

Red
“Occupied”

White
“Special”
VIP

- **2 heights of sensors available:** standard 85 mm or ultra-flat 49 mm.
- **Forcing of the states or colors** of the signals through the supervision.
- **Customizable “Overstay” function** to detect the overstaying parked cars.
- **Programmable “Eco-sleep” mode** to extinguish LEDs according to closing days & times.
- **“Plug & Play” ultra-easy & economic maintenance.**
- Design, development, production & assembly **100% in France.**

Indoor Detection

Technical features

- LEADER PARK® robust ABS housing & transparent polycarbonate globe anti-vandalism (Index IK-08)
- Wide distance range of detection: 0,80 m to 3,20 m.
- Installation height: between 1,90 m & 2,70 m from the ground.
- Sensor position: between 4,50 m & 5,00 m from rear of the parking spaces.
- Automatic calibration of detection from the supervision, without need of tool or housing opening.
- Automatic sensor's ID addressing & settings by the powerful supervision.
- Autonomous operation when only powered.
- Voltage regulator 72V-DC: homogeneous brilliance of the signals over the parking.
- Ultra-low consumption < 1,4 W.
- High efficiency > 90 %.
- Sealed installation (Index IP-54)
- Dimensions:
 - Standard sensor: 85 mm height- housing base diameter 75 mm.
 - Ultra-flat sensor (for low ceiling height parkings): 49 mm height - oval housing base 126 mm x 197 mm.

Communication & wirings

- Most reliable protocol BUS CAN sensor communication.
- Up to 125 sensors may be "chained" on each BUS "loop".
- No additional "relay" power cabinets.
- Single UTP cable for power supply & BUS communication, with RJ-45 connectors.
- Invisible cablings penetrating the housings via rubber sleeves or hangers.
- Easy connections between sensors by patch cables with molded RJ45 connectors (UTP Cat5E AWG-24).
- No screw connections: no error risks, long term reliability, and easy maintenance.

Easy & Fast installation

Extremely easy & fast installation, with top level standard industrial components.

The sensor base case is fixed to the structure by only one central screw.

The electronic boards are supplied 100 % tested and pre-assembled in their transparent globe: sensors are put & connected without tools, fixed with solid anti-vandalism clips.

Easy mounting & maintenance even in operation (sensors accessible even with vehicles).

Wide range of assorted accessories specially designed for quick & esthetic mounting in all types of structures:

- ▶ Fixed directly under the concrete ceiling with cables in penetrating PVC pipes 25 mm diameter.
- ▶ Under electric cable trays, ideally shared with lightings.
- ▶ Under assorted extension base of 5 cm.
- ▶ Under assorted aluminum hanger with invisible cables inside.



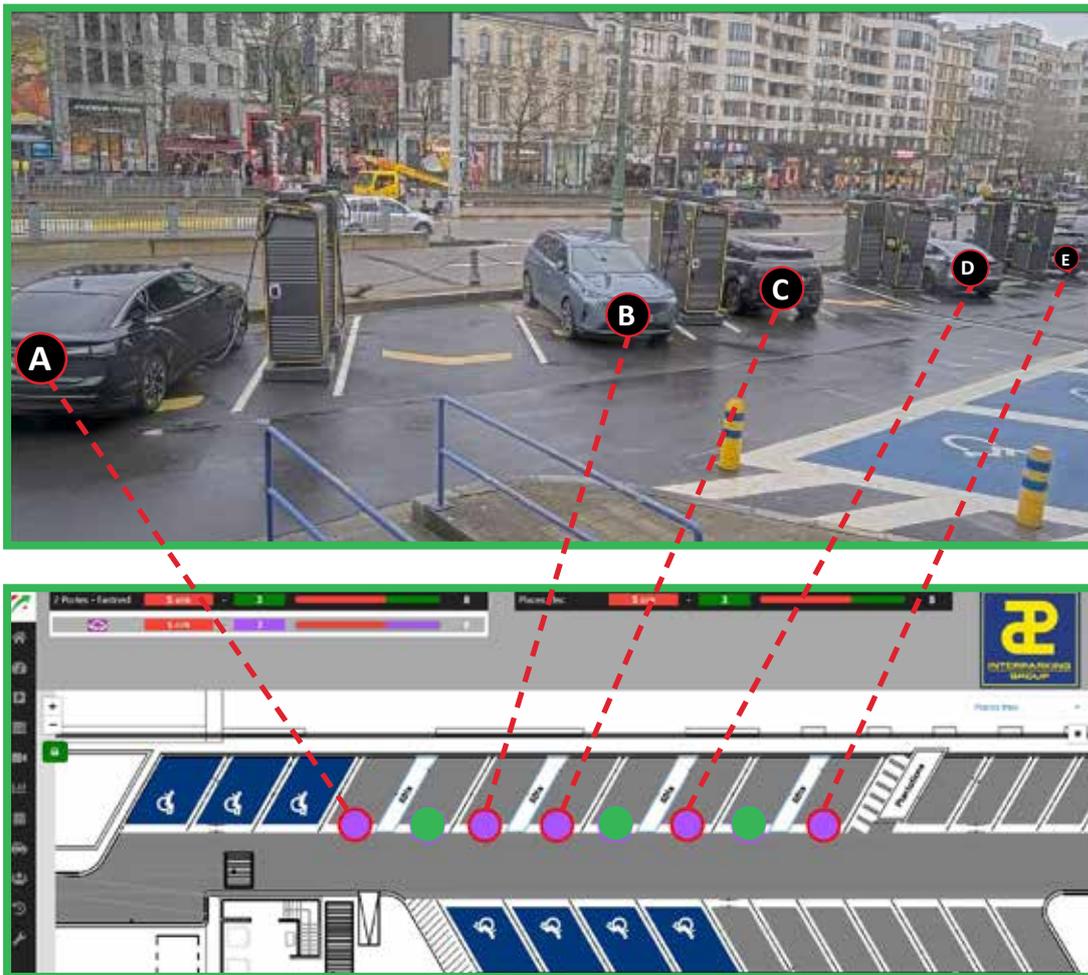
Simple & Aesthetic Assembly Solutions



Camera & AI Detection

Presentation

- The LEADER PARK® dynamic guidance system for **outdoor parking** lots uses outdoor cameras to **capture real-time images** of the parking facility, without any on-board image processing within the cameras themselves. All **image analysis** is performed entirely on our **central server**, powered by **artificial intelligence algorithms**.
- This approach ensures **maximum flexibility** and **independence from camera manufacturers**, with full in-house control over the system — enabling continuous scalability and optimization through software updates.
- The system is designed to **improve the user experience** by displaying real-time parking availability information on dynamic signage. It also **provides operators** with a **comprehensive view of parking facility usage**, going far beyond simple space availability management.



The outdoor camera + AI detection can help monitoring the misuse of EV parking space by regular car.

System Benefits

- **Efficiency:** Reduces the time spent searching for a parking space, minimizing delays, traffic congestion, unnecessary recirculation, driver frustration, accident risk, and CO₂ emissions.
- **Flexibility:** The system can be reconfigured to accommodate changes in parking lot layout.
- **Reliability:** Accurate vehicle detection powered by AI, even under challenging environmental conditions.
- **Adaptability:** Compatible with other smart parking solutions, such as space reservation and online payment systems.

Outdoor Detection

Technical Specifications

Type: High-performance high-definition (HD) cameras with wide-angle lenses to cover large areas.

Positioning: Mounted on rigid poles or fixed structures designed to maximize camera visibility across parking zones.

Durability: Weatherproof and resistant to outdoor conditions (IP66 minimum), suitable for all lighting and weather conditions.

Artificial Intelligence Analysis

Features

- Recognition of individual parking space boundaries.
- Detection of vehicles parked in spaces.
- Identification of occupied and available spaces.

Technology

- Deep learning algorithms trained to recognize vehicles under varying conditions (day/night, rain, shadows).

Processing

- Images are transmitted to the server for analysis and are not stored on-site, ensuring complete data privacy.



Centralized Server

Role

- Processes data from all connected cameras.
- Centralizes and updates parking space occupancy status in real time.

Connectivity

- Connected to cameras via a secure local network (copper or fiber optic cabling for longer distances).

Scalability

- Capable of managing multiple parking zones simultaneously.

API Interface

Enables real-time reading of occupancy counters by third-party systems, including:

- Remote display of parking availability within urban dynamic wayfinding systems.
- Integration with apps or websites allowing users to remotely check parking occupancy.

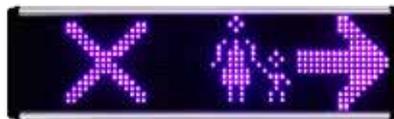
Description

- The **LEADER PARK® dynamic displays** are made of an assembly of **graphic matrixes of 512 pixels “full color” high-brilliance LEDs**.
- Each dynamic display can be **divided in several “virtual” sub-displays** allowing to display **different types of informations upon a big LEDs matrix**.
- They can display **in real time any useful informations for users & operators**, in the car park and at the entrances:
 - Countings & real-time guidance to the different types of vacant spaces,
 - Variables messages,
 - Opening hours,
 - Prices or discounts,
 - Welcoming messages,
 - Guidance to the exits with low traffic,
 - Security alarms,
 - Pictograms,
 - Operator’s logo,
 - Users groups identification...
- The LEDs matrixes are assembled into **elegant slim designed charcoal grey aluminum profiles**. A wide range of formats with different heights & width allow information display to be **perfectly adapted to each situation and to the view distances**.



Smart Dynamic Guidance with “Positive Communication”

- The LEADER PARK® system server generates - **in real time** - “counters” of vacant spaces in the car park, in each level, and in the parking zones defined in the programming. These “counters” are then programmed in the dynamic displays to **indicate vacant parking spaces** in the aisles, zones of various aisles, levels, sum of multiple levels, or the entire car park.
- Each dynamic display can alternatively indicate the vacant parking spaces of **different types with their “intuitive” pictogram**: Generic, Disabled, Family, Electric, Car-sharing, Reserved, VIP, etc... This makes it possible to **maximize dynamic information for users while reducing equipments and installations costs**.
- Customizable arrows - **dynamic, flashing, or static** - guide users on their way to **vacant spaces**. The arrow is on the display side of the indicated vacant spaces, and can be configured in 8 directions (45° steps).



- For an immediate and intuitive identification, the counting numbers, pictograms, and guidance arrows have the same color as the LEDs of corresponding sensors for each type of parking spaces. The numbers are centered and “without zero before”.
- The displays are placed at **the entrances** of the parking site, at the **access ramps** of each levels, and at each **“decision point” in the traffic flows of the car park**.

Dynamic Color LED Displays

- Occupied spaced and saturated zones have no interest for users who are always looking for vacant spaces! Our **“Positive Communication”** consists of **always showing users the shortest paths to vacant parking spaces**, regardless of how busy the car park is, so that they can **access them quickly and without hesitation!**
- LEADER PARK® allows the programming of counters “in cascade” so as to always indicate on the displays the shortest routes to vacant places: when a counting zone is saturated or very busy, instead of indicating “ full” the display will indicate the free places in another nearest zone! Users are thus permanently guided to free spaces throughout the car park.

Display of variable messages

Each dynamic display can display **different types of static or dynamic text:**

- Selection of height and font.
- Selection of short texts & pictograms displayed according to the counters status: Ex: Full, go up, go down, closed, Exit...
- Multilingual programming of texts for tourist sites, airports, railways stations, multilingual countries...
- By selecting pre-programmed multilingual short messages.
- Free entry of texts on keyboard, drawing of logos & graphic pictograms (closed at 10:00 PM, Date & Time...)



Dimensions

- Matrix Display height 128 mm: Lengths 512 mm - 768 mm - 1024 mm - 1280 mm - 1536 mm
- Matrix Display height 256 mm: Lengths 512 mm - 768 mm - 1024 mm - 1280 mm - 1536 mm
- Matrix Display height 384 mm: Lengths 512 mm - 768 mm - 1024 mm - 1280 mm
- Matrix Display height 512 mm: Lengths 512 mm - 768 mm - 1024 mm
- Matrix Display height 640 mm: Lengths 512 mm - 768 mm
- Thickness: 55 mm.

Signs & Totems for Dynamic Displays



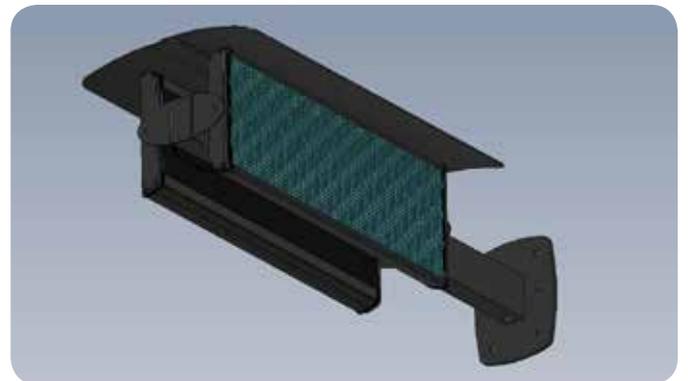
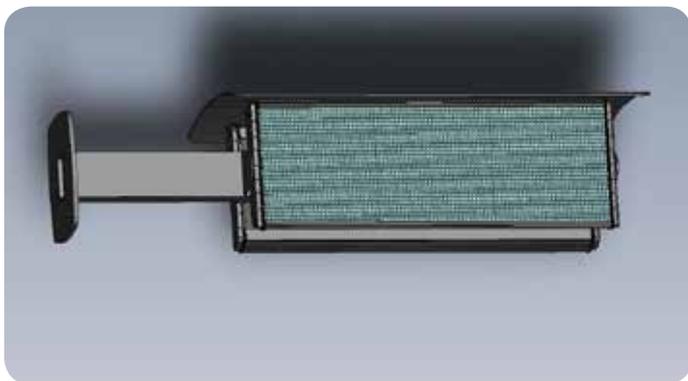
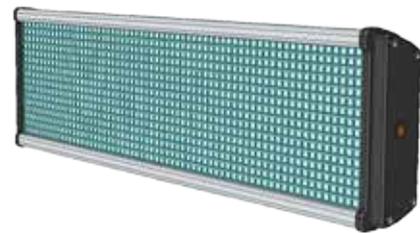
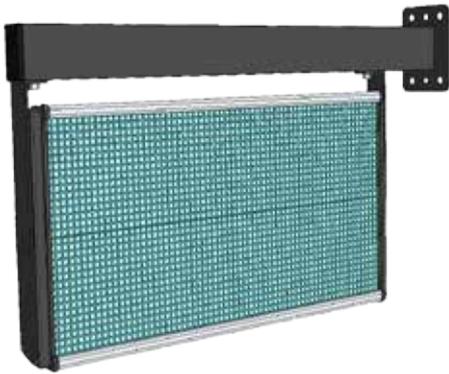
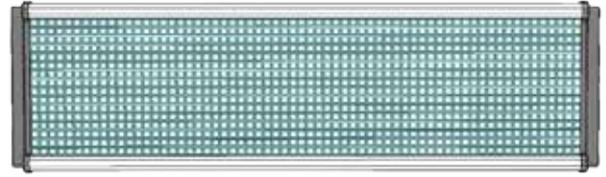
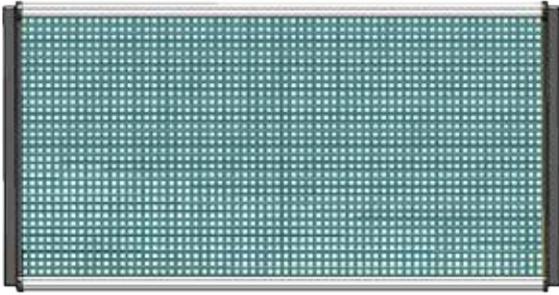
- Dynamic displays can be offered integrated into **customizable signage signs and information totems**, for simultaneous viewing of several levels of information. These signs can be backlit by LEDs.
- We can offer you a **personalized study of your project**, to optimize the positions and types of dynamic displays, signs, and totems.



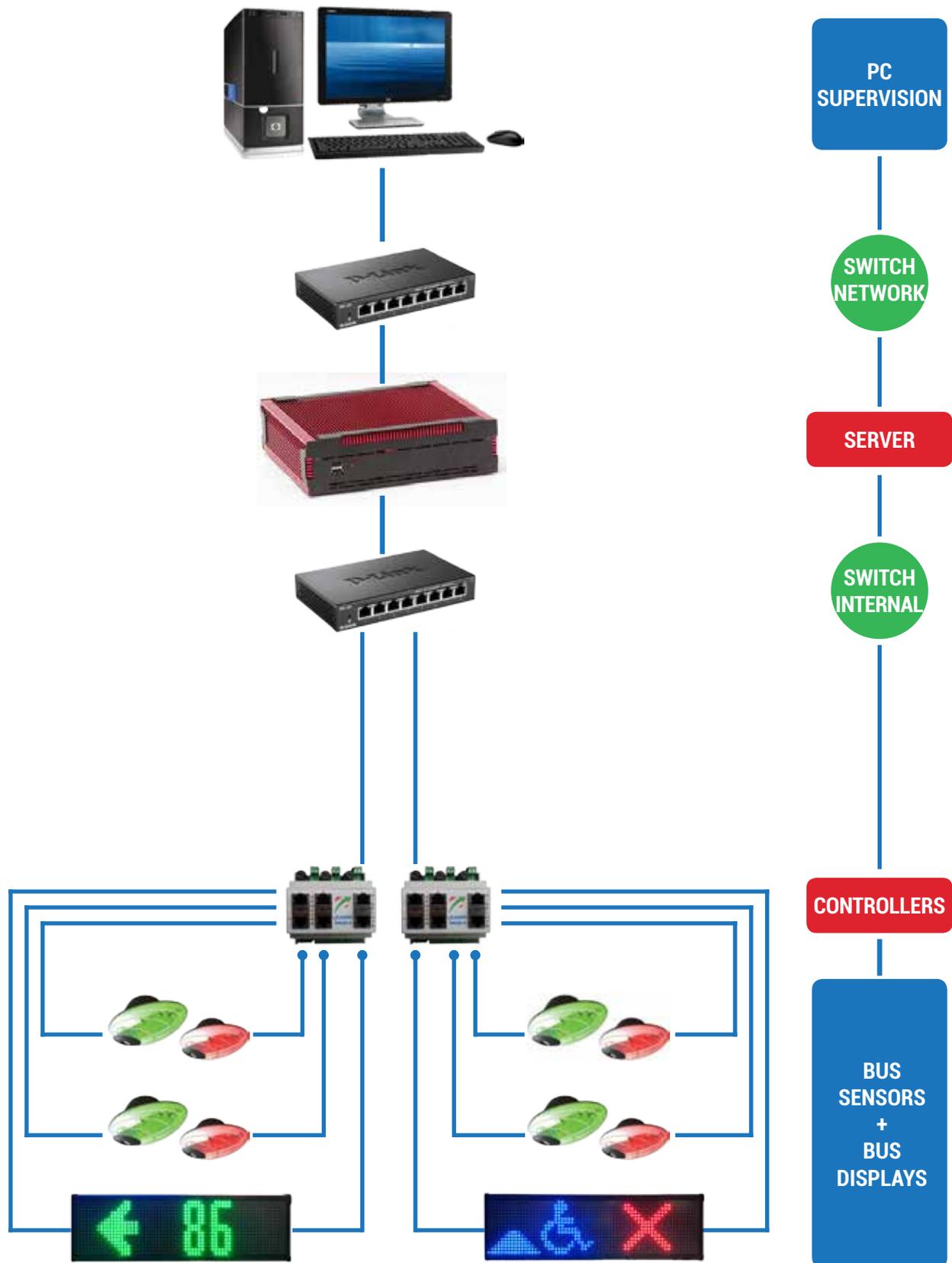
Technical Features

- Assembly of matrices of 512 "Full Color" R-G-B high-brightness LEDs.
- Pitch (inter-pixels distance): 8 mm.
- Optimal viewing comfort distance: 5 m > 100 m.
- Viewing angles: horizontal 110 ° - vertical 110 °
- Density: 15.625 pixels/m²
- Luminosity: 65.000 Cd /m² (adjustable by the supervision).
- Scan mode: ¼ Scan - Refresh rate: 1920 Hz.
- Communication protocol: RS-485.
- Single cable for BUS power supply & communication (U/UTP Cat6 AWG23) with RJ-45 connectors.
- Alimentation: 72 V-DC via the UTP communication cable & connectors RJ45.
- Low consumption: < 4 Watt / matrix.
- Connector for 12V-DC output power supply for a LED back-light of static pictograms.
- 4 contacts for electric triggering of messages programmable by the Supervision.
- Operating T°: -15 °C to + 50 °C.
- Manufacture: Housing made of injected aluminum profile.
 - > Front face: anti-reflective and anti-UV transparent polycarbonate.
 - > Rear face: Injected profile or 3 mm black aluminum dibond.
- Coating: Factory baked anthracite gray lacquer matching the sensors.
- Sealing: IP 64.
- Installation: robust fixing by screws on supplied lacquered steel brackets, allowing the inclination of the display to be adjusted for a perfect visibility for users.
- LEDs lifetime: 100.000 H.
- MTBF: 10.000 H.
- Design & manufacture: 100 % made in France.

Illustrations



Network Architecture



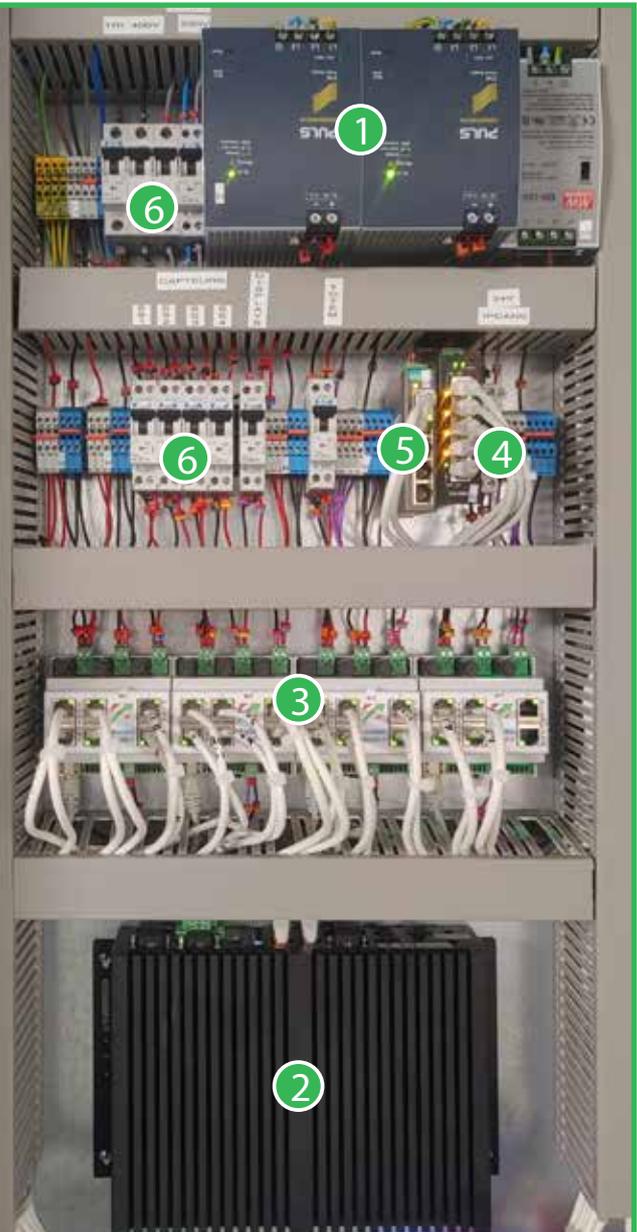
The Central Management Hub

- **Only the sensors and displays are located in the public areas of the car park:** ALL the other power supply and communication equipment are grouped in the **Central Management Cabinet**.
- The Central Management Cabinet is placed in a technical room **out of sight and not accessible to the public**.
- Each Central Management Cabinet **manages the entire system of sensors and displays** throughout the site.
- For very large car parks, and for multi car park systems, it is **possible to install several central management cabinets**. They are then connected to each other via a TCP / IP local area network or dedicated VPN.
- The **central server is locally based** and includes all the **system programming & equipment settings**, the **database** and the LEADER PARK® **interactive monitoring application**. The operation supervision station is connected with the central server via a **local area network (LAN) or a web-service**.

View of a Central Management Cabinet

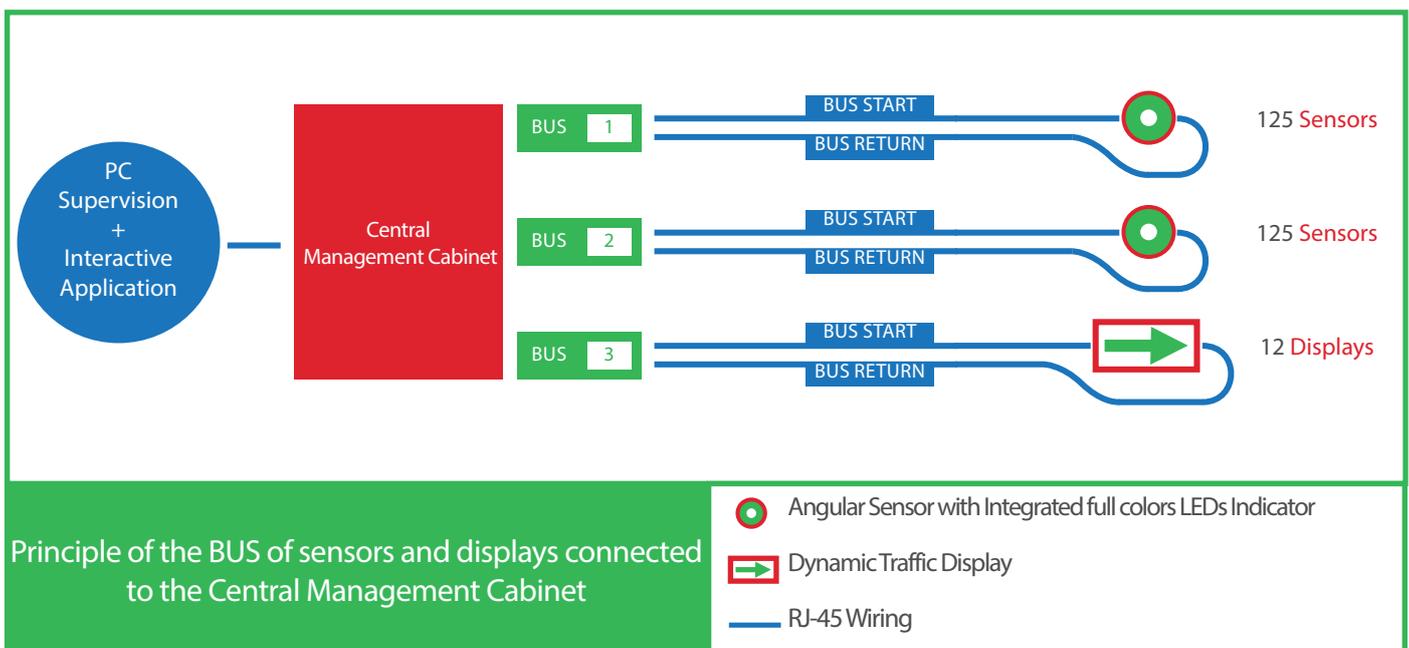
Components

- 1 Power supplies
- 2 Leader Park® PLC
- 3 Leader Park® Controllers
- 4 Ethernet Switch to private LEADER PARK® LAN for controllers-modules
- 5 Ethernet Switch to customer's LAN
- 6 Protective circuit breakers and electric power shutdown



Wiring & Connection Design

- The equipment is connected by single standard multi-strand U/UTP cables for power supply and communication.
- The devices are **connected one to each other in “loops” (BUS) connected to the controllers’ modules** in the Central Management Cabinet.
- The sensors and displays are wired though **BUS different from the sensors:**
 - Each sensor BUS can integrate up to **125 sensors**.
 - Each display BUS can integrate up to **12 displays**.
- The BUS start and return cables are **directly connected to the Central Management Cabinet**.
- **All equipment connectors are standard “click” RJ-45 connectors** (sensors, displays & controllers).
- BUS cable specifications:
 - ▶ Connection patch cables between sensors:
2x RJ-45 UTP CAT5e - AWG 24 (unshielded) 3-4-5-7 m certified 100% tested.
 - ▶ BUS cables starting and returning from the Central Management Cabinet, cables for crossing aisles, BUS cables for displays:
BUS: U/UTP Cat6 - AWG 23 (unshielded) in reels, with RJ45 connectors crimped at each end.
- When it comes to extensively long long BUS wiring for certain configurations, **“Boosters” may be necessary for a perfect communication in the BUS.**



Sensors and Displays BUS Loop Synoptic

Sensors BUS Loops Synoptic

- Angular Sensor with Integrated full colors LEDs Indicator
- Central Management Cabinet
- RJ45-45 Wiring
- Starting or Return Point to the Cabinet



Displays BUS Loops Synoptic

- Dynamic Traffic Display
- Central Management Cabinet
- RJ45-45 Wiring
- Starting or Return Point to the Cabinet



Some References



Interparking

Spaces: 21,600
Projects: 24



Shopping Mall

Spaces: 27,000
Projects: 65



Airports & Train Stations

Spaces: 10,800
Projects: 11



Leclerc - Carrefour

Spaces: 8.800
Projects: 14



Ikea - Leroy Merlin

Spaces: 3.600
Projects: 4



Headquarters

Spaces: 9,500
Projects: 30



Banks

Spaces: 2,100
Projects: 6



Ski Stations

Spaces: 2,000
Projects: 10



Hospital

Spaces: 4,700
Projects: 11

Some Partners

Shopping Malls



Parking Operators



Cities

Corporate



Technical Partners



A Few References



33 Years Experience



**+ 150 Projects
in Europe**



+ 70 000 Spaces



Shopping Malls

**27.000 Spaces
65 Projects**



Airports & Train Stations

**10.800 Spaces
11 Projects**



Urban Car Parks & Hospitals

**13.000 Spaces
35 Projects**



Business Centers

**8.600 Spaces
24 Projects**



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